Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

Essays on Mergers and Acquisitions: Acquisition Target Prediction, CEO Deal Experience on Deal Performance, and Value Creation on a Massive Scale

by

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Declaration of Original Authorship

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Abstract

This thesis examines three important issues in the financial literature strand of M&As. The first analysis regards the field of acquisition target prediction (ATP) and the construction of profitable investment strategies based on identifying prospective targets and investing in their stock. The study introduces novel predictors, which connect market conditions to individual firm targetiveness, but the prediction accuracy does not seem to materially improve when compared to the literature. However, the investment performance of predicted targets is firmly positive, resembling the performance magnitude of actual targets. In a novel construct of rolling estimation, the model seems to have low intertemporality, suggesting opportunistic performance in both prediction accuracy and importance of predicting factors.

The second analysis regards the effect of CEO deal experience on deal performance. Based on manually collected data, the CEO experience at the time of the appointment in the firm seems to be insignificant for the returns around the announcement, but long-run returns form an inverse U-shaped relationship with experience, suggesting positive effects from modest experience and exponentially decreasing effects for more experienced CEOs. The significance only for long-run returns suggests that investors have yet to account for the effects of experience on deal performance. As for the relationship pattern, the shift is attributed to the different behaviour expected by CEOs with different levels of experience. Inexperienced CEOs are alert and cautious, deliberating on the appropriate course of action, while more experienced CEOs may rely on their past experience, ignoring the special circumstances of each deal and applying their intuition indiscriminately. The latter behaviour can be classified as overconfident and hubristic.

The third analysis focuses on the value creation of large deals (> $500 mil) in the aftermath of the 2008 crisis. For the first time in academic literature, the general population of deals creates positive and significant wealth for acquirer shareholders. This outcome stands contrary to the status quo of the several decades leading up to the crisis, when the average deal was value-destroying for the acquirer. The improvement in returns holds for any type of deal that has been reported to lead to adverse stock performance. This market-wide shift connects to the recent financial crisis of 2008. The economic meltdown brought a stream of regulations in the U.S. market in an attempt to prevent the re-enactment of a similar crisis. The Dodd-Frank act improved several aspects of reporting and accountability for listed firms. The stunning improvement in corporate governance metrics and the ample testing for the effect of different factors suggest that superior corporate governance is the main factor for the new deal-performance standard.

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Part I

Introduction to the Thesis

1. Overview and Contribution

Corporations have long been at the epicentre of most societies and economies. They are responsible for the production and distribution of products, the provision of services, as well as the discovery of more effective and efficient solutions to existing or new problems. Citizens benefit from their output as consumers, but they also rely on them for their personal income by assuming the roles of employees, collaborators, or investors. The institution of corporation has facilitated inter-social cooperation, technological innovation, and redistribution of resources. The increasingly globalised environment places corporation at the intersection of international exchange of products, services, and money. The intercontinental environment hosting firms is subject to incessant changes and, more frequently than not, the shifts are abrupt, steering companies along with the whole economy violently in a new, eternally temporary equilibrium.

Mergers and acquisitions (M&A) have been a useful tool in the executives' relentless struggle for adjustment and prominence. In a typical organisation, the leading managerial team deliberates and agrees on the course of action for the foreseeable and distant future, allowing for contingencies in the niece economic environments. An implicit agreement among executives and directors postulates that the chartered route is continuously re-evaluated and compared to alternatives, all in order to identify the set of collective actions that will serve the company's aim better: maximisation of shareholder wealth. Executives are primarily responsible for interpreting and acting on information provided by the market's feedback mechanism, and when the time comes to amend their plans in a direction necessitating spending, they are given a binary option: make or buy. The decision of "making" regards the allocation of capital expenditure in order to grow a new technology, department, an independent entity, or even a joint venture, and it takes into consideration the alternatives in the market, the specialisation and discretion advised for the project, as well as the time available until the endeavour is expected to become fruitful. The decision of "buying" entails identifying an existing entity in the market, which can help the firm accelerate its strategic adjustment, and gaining control of it.

The trade-off between organic (CAPEX) and inorganic (M&A) growth is beyond the simple substitution of time with cost; the caveats pertaining to the relatively quicker solution of M&As have been documented to be numerous and, frequently, sizeable enough to overcome the corresponding benefits. Public status for target firms, stock consideration, highly competitive bidding, executive behavioural biases such as envy, narcissism, and overconfidence have all been argued to adversely impact bidder stock prices around the deal-announcement date. The nature of M&As as distinct events with presumably measurable effects on shareholder wealth have repeatedly led CEOs to be held in contempt, usually displacing them from the company, as well as exposing them to lawsuits for

misconduct. The solution of a company acquiring its path towards survival and dominance is risky for both shareholders and executives, and this reiterated fact has fuelled both the fascination and the dreaded awe of practitioners and academics over M&As.

The notoriety of acquisitions has not discouraged executives from undergoing a binge of deal-making, while the market concentrates its gluttony for combinations within industries and time periods, bearing the phenomena labelled as "Merger Waves". In the last two decades, the economy has witnessed two officially acknowledged waves in the U.S., the Fifth wave in late 1990s which ended with the collapse of the stock market in the advent of the millennia, and the Sixth wave, starting in 2003 and suddenly stopping due to the meltdown of the financial system. The few years following the crisis initially displayed a trough in deal activity, since the combined effect of liquidity scarcity and unprecedented uncertainty in the economy stalled plans for M&As. However, the market recovery after the crisis has born a rejuvenated attitude towards acquisitions, resulting in global record-spending levels $3.8 trillion for the year 2015 (Bloomberg, 2016).[1] While the eventful years after the crisis have yet to be classified as the Seventh U.S. merger wave, their passing has left us with voluminous activity, and a revitalised testing ground for existing and new M&A theories. The second chapter offers a detailed account on the general, prominent M&A theories and empirical evidence published in the course of the last century. Separate sections of literature review accompany the empirical chapters.

This thesis has been an elaborative and painstaking exercise on revisiting three well-studied ideas in the M&A academic literature. The first idea places the target firm in the spotlight in an attempt to identify the attributes transforming a regular company into a target. The studies that initiated the literature strand in the 1970s (Sevens, 1973; Simkowitz and Monroe, 1971) advised for a set of characteristics inviting acquirers to place bids for the company. Their initial motivation, which still stimulates activity in this strand, is dual. First, successful target identification would allow investors to achieve overwhelming performance, as long as they were able to receive the sizeable premia paid to target shareholders. A model capable of predicting accurately and timely prospective targets would allow them to allocate funds in securities which usually appreciate in value more intensely than the market. The second part of the motivation regards company managers, who aim at attaining target status for their firm, so that their shareholders will benefit from the hefty premium. The identification of the specific characteristics could direct managerial efforts towards increasing their own firm's targetiveness. Over time, studies have refined the methodological tools employed, and they have also enriched the list of factors predicting company targetiveness. The development of new theories in the general finance literature has consistently preceded the studies on company targetiveness, and it has frequently provided inspiration to targetiveness researchers.

[1] "2015 was Best-Ever Year for M&A; This Year Looks Good Too.", January 2016, Bloomberg.

Chapter 3 provides a new framework for measuring company targetiveness, balancing between reliance on existing frameworks and innovation in several aspects of the research structure. This chapter adds to the list of targetiveness factors by extending the focus beyond the unit of the prospective target. Existing theories, as well as newly devised conjectures, provide the basis for a new cohort of predictors attributing individual firm targetiveness to market-wide factors. The fundamental argument supporting all these environmental factors poses that firms are interacting constituents of complex economic systems, which display ever-changing configurations that usually overshadow the importance individual-firm attributes. A successful endeavour in deciphering the influence of concurrent trends on firm targetiveness will advance target prediction by several orders of magnitude.

An additional motivation for Chapter 3 has been the static approach of previous studies on targetiveness. The literature has relied on single-period models for both understanding targetiveness and devising investment strategies. However, this approach disregards the dynamic component of market factors and, consequently, their effect on the acquisition decision process. To the best of my knowledge, this study is the first to address rolling model estimation and investment performance in the framework of target prediction. The results are suggestive of the circumstantial importance of targetiveness factors, indicating that acquirer management acts on different sets of factors through time. This outcome raises questions on the intertemporality of the results provided by previous studies on the field, as well as on the actual ability of outsiders such as academic researchers or analysts to demystify and decode the opaque process of acquisition target selection.

The second idea empirically examined in this thesis regards the relationship of experience and performance in the setting of acquisitions. The literature has produced a few seminal works suggesting the adverse effect of experience, due to either the inappropriate generalisation of knowledge gained via deal-making (Haleblian and Finkelstein, 1999) or the gradual abasement of managers towards complacency and overconfidence (Billet and Qian, 2008). Despite the recency and popularity of the latter two studies, the literature has occasionally offered outcomes of positive or non-existent effects, indicating that consensus has yet to be reached. The majority of studies has mostly focused on organisational experience, and the few studies adopting CEOs as points of reference register the experience gained by the executive in the few years before the deal under investigation.

An inefficiency in the research structure has been the main reason in investigating experience and performance in the current thesis. Specifically, the definition of executive experience as the experience accumulated over the last few years before the acquisition at hand neglects the confounding component of organisational experience. Chapter 4 is dedicated to the construction of purer measures and a more efficient framework on studying the effect of executive experience. The

consideration of the experience assumed before the appointment in the positions, as well as the inclusion of general and related experience measures has contributed to the spectrum of experience dimensions explored in the literature.

The novel research structure instructed for manual data collection on CEO position and experience information for the years before the executive's appointment in the acquirer. The analysis revealed an inverse U-shaped relationship between experience and performance, highlighting the standard, complex, non-monotonic relationships present abundantly in the intricate system of corporations. In the context of Chapter 4, modest acquisition experience appears to have a beneficial effect on shareholder wealth, arguably due to the ability of the seasoned CEOs to apply past lessons appropriately and still remain vigilant towards unanticipated complications. However, as the level of experience increases, the effect on performance diminishes and, after a substantial number of deals have been consummated, experience becomes toxic and value-destroying. The latter pattern reversal can be attributed to a rise in confidence, implanting the vice of negligence and, in extreme, hubris in CEO behaviour.

An additional noteworthy outcome in Chapter 4 is the unexpected horizon over which CEO experience proves to be impactful. Announcement returns remain unaffected by such experience, while long-run returns reveal the aforementioned inverse U-shaped relationship. This discrepancy indicates the potential lack of adequate insight in the investor reaction surrounding the deal announcement, in contrast to the better educated and composed behaviour of investors over a longer period of time. If the recent trend of hiring seasoned CEOs persists in the future, investors may accept the lasting effects of experience and factor them in their attitude towards deal valuations earlier than they have done so far.

The effect of experience on acquisition performance can be categorised in the broad literature strand of value creation through M&As. The academic consensus has been bleak for acquirers in the aggregate, suggesting adverse market reaction around the deal announcement or, depending on the sample period, negligent performance at best. This stylised fact has been re-examined in a voluminous number of studies, but its resilience has not been tested against the most fierce paradigm shift in the recent economic history. The financial collapse of 2008 has been labelled as the "Great Depression", as it was characterised by market shocks, uncertainty, and misery that could be comparable only to the U.S. crisis in the 1930s. The financial sector, the fundamental pillar of capital-based societies and the main culprit for the crisis in 2008, crashed after a steep fall in the market's trust for its capacity to function rationally. The U.S. government and the respective regulatory authorities undertook the task of upgrading the extant legal framework in order to prevent similar instances in the future. The most highlighted legislative product has been the Dodd-Frank Act, named after its main instigators, and it

imposed stricter rules on administration, compensation, transparency, and accountability in U.S. firms.

The new legislation has laid the grounds for new formats of corporate governance, although even in the absence of regulatory intervention, executives and directors were bound to change their *modus operandi*. The aftermath of the crisis saw an overwhelming rate of CEO turnovers, which has been a draconian shareholder reaction to poor CEO performance in risk management and contingency planning. The market-wide overhaul of C-class executives has arguably set a memorable precedent: inadequate performance will not be left unpunished; similar treatment should be expected in cases of suboptimal acquisition performance.

The expected shift in acquisition performance is the third idea investigated in this thesis. Chapter 5 shows stunning improvement in the performance of mega acquisitions (deal value > $500 mil) during the years after the financial crisis, displaying positive average acquirer returns for the first time in academic literature. The focus on mega deals is deemed appropriate, as they comprise more than 80% of the total annual deal value at any point in time, and they have been held responsible for the value-destroying quality of deal-making. The improvement is further attributed to the stunning turnaround of public mega deals, which display positive gains in the short run, despite their notoriously negative performance in the past. The superior performance of acquirers persists for measures of various horizons and construction, showing positive returns in the long-run as well. After an extensive set of tests, the unprecedented improvement in acquisition returns can be attributed to the regime shift imposed by the financial crisis, which led to regulatory and unofficial changes in the fashion firms are run and the Board of Director's sincerity in monitoring and guiding CEOs. Furthermore, the agency costs, which have been a renowned suspect in driving deals or value destroying investments in general, are expected to have a decreasing effect after the crisis: firms display similar cash flows and even greater capital liquidity than in the past due to the low lending costs, but the deals pursued create value in the aggregate. Management seems to have grown less prone to self-servicing. Whether the positive performance persists through time remains to be seen.

The structure for the remaining of this thesis is as follows: in the next chapter, I provide a general literature review, elaborating on central and specialised aspects of M&As in the academic literature; then, I provide three empirical chapters as they have been described in the introduction; finally, I conclude the thesis with summarising remarks, as well as suggestions and insights on future research projects.

2. General Literature Review

2.1. Introduction

Mergers and acquisitions (M&As) constitute a vital area of corporate finance, since investors, practitioners, and academics are fascinated by the concept of M&As for a multitude of reasons. First, M&A representation in the economy is material. In 2015, the total value of deals globally amounted to a record figure of $4.28 tril, while more than 46% of those deals occurred in U.S., at a national total M&A value of $1.97 tril (IBT, 2016).[2] In order to conceive the magnitude of the latter figure, 2015 U.S. M&As valued as much as 11% of the respective year's GDP (Trading Economics, 2016). The frequency and worth of such deals are indicative of their significance to the normal function of corporations. Strategic shifts are performed swiftly owing to the relatively faster restructuring capacity of acquisitions, when compared to building or discontinuing a segment organically. In detail, managers who have decided to enter or exit a business segment, are not necessarily obliged to gradually grow the business function organically or de-escalate the investment, respectively. If they find it appropriate, they can acquire another firm or divest the unwanted business section as an independent entity. The flexibility added by the quick restructuring via M&As allows firms to adjust to the dynamic market environment in a timely fashion. Without the option of swift strategic shifts, companies would be less motivated to undertake risky, costly projects, as they would have to bias their investment decisions towards project with more probable high future relevance.

The following review offers a general insight on M&A literature, and it is by no means exhaustive, as the vastness of M&A work would require the full extent of a Ph.D. thesis. The selection of reviewed topics are seemingly unrelated to the niche areas investigated in the empirical chapters, as each empirical chapter is accompanied by a relevant section. The purpose of this literature review is to offer a contextual insight regarding M&As, which will allow for a more pleasant reading to the erudite reader.

[2] "Global M&A Activity in 2015 Worth $4.28 Trillion, Highest Ever", International Business Times, 8 January 2016).

2.2. Merger Activity

Theoretical and empirical research has identified several reasons for the observed M&A activity. The Neoclassical Theory (see e.g. Gort, 1969; Mitchell and Mulherin, 1996; Andrade and Stafford, 2004) postulates that merger waves, i.e. bursts of M&A activity clustered in time, are the market response to inefficiencies emerging due to industry-wide shocks in e.g. technology, regulation, input costs. Several independent, industry-specific merger waves may cluster in time and form an aggregate market merger wave, as long as there is enough liquidity to finance the deals (Harford, 2005). Investors can rely on Leveraged-Buyouts (LBOs) in order to foresee surges in the activity for corporate control, as LBOs provide strong signal about changes or shocks in the respective industries (Harford et al., 2016).

The second and more recent set of theories explaining M&A activity focuses on firm valuation. Overvalued acquirers place bids on firms in order to take advantage of their relatively cheap equity capital, before the market realises the inflated valuation and corrects the share price (Shleifer and Vishny, 2003). A more general version of this theory considers the relative valuation between the prospective pair of acquirer-target and suggests that acquisitions will happen between firms when the relative mispricing favours the acquirer. Even if both firms are over- or under-valued, a bid is plausible, and valuable, as long as the acquirer has relatively overvalued stock against the target (Rhodes-Kropf and Viswanathan, 2004).

The Neoclassical and the mispricing theories view the firm as an entity striving for efficiency maximisation, assuming the management is a perfect agent of the principals, i.e. the shareholders. There are theories bearing either homogeneous or contradictory views on the reasons behind merger activity. Q theory provides a framework supporting efficiency in the market for corporate control, suggesting that firms with more capable management teams will acquire their inferiorly performing peers, discipline the management as deemed appropriate, and, eventually, unlock the hidden value of target company's assets (Dong et al., 2006; Brainard and Tobin, 1968). This theory could be indirectly related to a behavioural explanation, i.e. managerial hubris. The main argument of this theory pertinent to M&As is that overconfident managers will resort to the acquisition of firms they believe they can administrate far better than the incumbent management (Roll, 1986). Hubris, or overconfidence, has been recognised as an international phenomenon that leads the number of deals CEOs perform (Ferris et al., 2013), and although it has been connected to value-destroying ventures (Malmendier and Tate, 2005, 2008), there have been theoretical frameworks where hubris serves as a catalyst for market efficiency in company pricing (Ko and Huang, 2007).

CEO overconfidence is not the only explanation based on behavioural characteristics. Top managers have reportedly pursued acquisitions due to feelings of envy of the benefits enjoyed by acquiring peer CEOs (Goel and Thakor, 2009). According to this reasoning, CEOs enjoy private benefits by conducting acquisitions, such as higher compensation throughout their career (Yim, 2013), as well as a materially larger area of influence, since they reign over bigger organisations after each deal. These benefits tempt other CEOs in the market, who thus become more likely to imitate the acquiring CEOs' behaviour in order to enjoy similar perks. Goel and Thakor (2009) claim that this socially-inspired incentive for deal-making could result in aggregate merger waves of acquisitions, as envy is spreading across and beyond industries, encouraging inactive CEOs to become acquirers.

The aforementioned theories of overconfidence and envy are only few examples of CEOs initiating acquisitions for their own personal benefit, a predicament that has been documented in the literature before (Morck, Shleifer and Vishny, 1990). Another theory explaining the reason behind M&A activity and waves has been provided by Gorton et al. (2009). They suggest managers perform acquisitions in order to prevent acquirers from attempting a bid on their own firm. In detail, CEOs consider the size distribution of firms in the broader business segment they belong, and, if most firms are of similar size and only few are significantly larger, CEOs resort to acquisitions that will enlarge their own firm and, consequently, render it a less feasible target to acquirers. These "defensive" acquisitions serve the management's incumbency and not the shareholders, as the underlying deals are not performed in contingence to the existence of profitable opportunities, but only with respect to the probability of the firm receiving an unsolicited offer. Gorton et al. (2009) suggest that defensive acquisitions can provoke market responses of more such acquisitions, clustering deal activity within a specific time period in the form of a merger wave (see also Phalippou et al., 2014).

2.3. Merger Waves

It is a common knowledge in M&A literature that deals occasionally cluster in time, resulting in the phenomenon of merger waves (see e.g. Nelson, 1959; Golbe and White, 1993). As it can be inferred by the review so far, academics have not reached a unifying theory explaining the causes of merger waves, which is unsurprising, as reasons stimulating waves span from rational reactions (Neoclassical theory) and mispricing to CEO overconfidence and self-servicing (Behavioural theories). In recent history, the U.S. market has been familiar with six merger waves, each one of which was triggered on different premises. In this section, I describe the general characteristics of the prominent merger waves.

2.3.1. First Wave

A surge in the market for corporate control was observed during the period 1898 – 1902 (Lamoreaux, 1980). The First U.S. merger wave was led by innovation in technology, economic growth, increased efficiency in industrial procedures, the establishment of new regulation, and the price appreciation of industrial securities on NYSE (Martynova and Renneboog, 2008). Most of the activity involved horizontal acquisitions leading to large companies and establishing market structures that resembled monopolies (Stigler, 1950). The end of this wave came with the collapse of the stock market in 1902, which deprived prospective acquirers of the necessary capital funds to continue their consolidation plans. The stock market collapse also introduced additional regulation, i.e. Sherman Act, which commanded against the formulation of monopolistic market structures, restricting the activities of high-market-power acquirers (Stigler, 1950).

2.3.2. Second Wave

The Second U.S. merger wave was triggered by the nationwide need for higher operational efficiencies after the First World War. It lasted for approximately a decade, from the late 1910s until the economic crisis of 1930s (Martynova and Renneboog, 2008). During that time, small firms that have not been acquired in the First wave were targeted and consolidated in larger entities. The increasing size of firms led to advantages such as economies of scale and scope, placing the combined firms in better position against competition (Stigler, 1950). The Second wave was also put to a halt due to a stock market crash, this time the famous market collapse in 1929, which was the starting point of the Great Depression (Martynova and Renneboog, 2008).

2.3.3. Third Wave

After almost three decades of stagnation in the market for corporate control, the Third U.S. merger wave started during the late 1950s and ended with the oil crisis in 1973 (Martynova and Renneboog, 2008). This Third wave was characterized by predominant market consolidation and conglomeration (Edwards and Kaplan, 1955). Top management of prospective acquirers observed that companies in other industries are affected differently by market conditions. Due to the abundance of capital and the fear for another industry shock that could evaporate profits in their main industry, capital-rich firms started acquiring smaller firms in other industries in order to diversify the risk of operational cash flows (Martynova and Renneboog, 2008). The oil crisis in 1973 had a market-wide impact on stock valuation and capital liquidity; once again, the merger wave was stopped abruptly due to the lack of fund liquidity.

2.3.4. Fourth Wave

The Fourth U.S. merger wave started in 1981, after the global markets have recovered from the oil crisis, and lasted up to 1987, when the collapse of the stock market reduced capital liquidity and growth prospects. This wave was characterized by the attempt of fragmentation of the previously created conglomerates, in an attempt to correct the inefficiencies induced by misguided diversification during the Fourth wave (Shleifer and Vishny, 1991). The adverse effect of diversification was apparent in the relatively low valuation ratios of conglomerates. Firms with higher valuation metrics acquired them, selling the unrelated business segments in order to release the hidden asset values and, consequently, they realised significant gains by divesting subsidiaries at higher prices than the conglomerate share price implied (Dong et al., 2006). Along with industrial, regulatory and technological shocks, the debased performance and managerial incumbency of the conglomerates' management led to an unprecedented concentration of hostile bids, divestitures, leveraged and management buyouts (Martynova and Renneboog, 2008). Although the fourth merger wave has labelled as the 'hostile wave', the concentration of successful hostile bids did not exceed 14% of all deals (Andrade et al., 2001).

2.3.5. Fifth Wave

The Fifth U.S. merger wave has allegedly been the largest in the American economic history so far, both in terms of consideration and deal frequency (Moeller et al., 2005). It started in 1993 and it ended with the stock market crash in 2001. An increased number of cross-border deals dominated the wave, along with technological breakthroughs, market deregulation and unparalleled surges in stock prices (Martynova and Renneboog, 2008). Merger activity in this wave was stimulated by the

predominant desire of acquirers to strengthen their position in the global marketplace. This motive was further fuelled by the simultaneous decrease in foreign direct investment restrictions in several countries, leading to opportunities of market penetration (Black, 2000). The argument that international competition was the common denominator among the majority of deals is supported by the prevalence of related acquisitions (vertically or horizontally), along with the decreased proportion of divestitures (Martynova and Renneboog, 2008). Regarding acquirer characteristics, the Fifth wave had more young firms perform acquisitions when compared to more mature firms (Arikan and Stulz, 2016). Another unique characteristic of this wave was the remarkable level of value destruction for acquirers, especially among technology firms. Nevertheless, only few devastating deals seem to be responsible for this notorious statistic (Moeller et al., 2005).

2.3.6. Sixth Wave

The Sixth U.S. merger wave lasted for almost half a decade, from 2003 up to 2007, concluding with the collapse of the market trust in the banking system. While the Fifth wave was the largest in terms of consideration and number of deals, the Sixth wave resulted in similar losses for acquiring firms and low premia for target firms (Alexandridis et al., 2012, 2013). Serial acquirers performed a smaller portion of the deals when compared to previous periods and, overall, acquirers used less stock consideration than before. The lower premia, the mitigated aggressiveness of serial acquirers, as well as the restricted use of stock consideration could indicate efficiency improvements in information distribution in the market, as well as moderated hubristic behaviour by acquirer management. Nevertheless, investors did not have a generally positive reaction to deal-making decisions, which drove acquirer returns lower than expected (Alexandridis et al., 2012).

2.3.7. Merger Waves Overview

The six documented merger waves in the U.S. display a blend of unique and shared characteristics. The drivers instigating each wave are special to each case, be it increase in operational efficiencies, diversification of risk, correction of investing inefficiencies, globalisation etc. However, all waves ended with the advent of an economic crisis that affected capital and funds liquidity in the market. It seems that regardless of the circumstances leading to the wave being initiated, heightened merger activity cannot continue when prospective acquirers cannot gather enough funds to perform acquisitions. This observation is in agreement to recent research suggesting that capital liquidity is a prerequisite for industry-specific waves to cluster in time and become market-wide phenomena (Harford, 2005).

2.4. Deal Attributes and Other Factors

2.4.1. Method of Payment

The three prominent methods of payment are stock swaps, cash, and a mix of the two. When target shareholders are paid with stock swaps, they exchange their company's shares for a number of the acquirer's shares. Cash can be raised via different methods. Acquirer management can use the cash accumulated from the company's operating cash flows, or they could issue debt or equity in order to raise cash and pay for the target shares. The choice of paying or accepting each of the aforementioned methods is taken after several factors have been taken into account.

Hansen (1987) observes that the probability of bidders using cash increases with the relative undervaluation and size differences with the target. The use of stock consideration has been shown to signal overvaluation to investors leading to average negative returns of approximately 10% (Travlos, 1987), therefore using stock while being undervalued will prolong or even worsen the acquirer stock mispricing. However, it has been suggested that stock swaps increase the permanent investor base of acquirers, which in turn alleviates the cost of information asymmetry and opaqueness, therefore affecting positively bidder announcement returns (Lei et al., 2016). On top of the effects of mispricing, bidder management takes into consideration the costs of issuing stock. In order to justify these costs, the size or the value of the target should have a considerable impact on the acquiring firm. Recent evidence are not suggestive of the adverse effect of stock consideration. When controlling for the market reaction to companies' seasoned equity offerings (SEO) then stock-financed acquisitions seem to have no excessive effect on acquirer returns (Golubov et al., 2015).

The impact of method of payment on the existing ownership structure is a considerable factor as well. There is evidence for both U.S. (Martin, 1996) and Europe (Faccio and Masulis, 2005) regarding the defensive strategies of existing bidder shareholders in order to maintain the ownership structure, especially when the distribution of corporate control can significantly be affected by the method of payment. More specifically, intermediary levels of ownership by the largest shareholders (see e.g. Martin, 1996; Faccio and Masulis, 2005), e.g. 20-60%, instruct the use of cash. The same holds for the cases when major shareholder's voting power is threatened in cases of both listed and unlisted firms (Faccio and Masulis, 2005). On the contrary, too low or too high ownership concentration leaves bidder shareholders indifferent to corporate control loss. In these cases, the decision between cash and stock payment is not affected by ownership structure.

Apart from ownership structure issues, personal interests of bidder management may affect the method of payment. According to "agency cost" theory (see e.g. Jensen and Meckling, 1976), top

management may decide to extract rents from the firm at the cost of shareholder wealth. The pursuit of private benefits may be more pronounced when firms have available free cash flow (FCF) in excess of their future investment needs (Jensen, 1986). In this case, managers may prefer to invest the funds in excess in negative NPV projects, instead of redistributing it back to shareholders, as managerial compensation and influence are accruing with additional deals and the size of the entity they control (Yim, 2013). With respect to method of payment, FCF-rich firms may be prone to use their excessive funds via making cash bids. Accordingly, bidder management would prefer not to dilute their own firm control due to acquisitions and, as a result, they tend to use less stock consideration, when their ownership is low or threatened (see e.g. Stulz, 1988; Amihud, Lev and Travlos, 1990; Martin, 1996).

Management is also bound to exaggerate about the needs for investment capital for the same reasons of "agency cost" theory (Stulz, 1990). Managers would attempt to maintain a reserve of funds for investments by keeping most of their cash balance inflated or raising more capital via stock offerings. The alternative is to raise debt, which proves to be restrictive for rent-seeking managers. Since increasing debt payments prevent managers from investing in negative NPV projects, accumulating debt is a natural hedging against overinvestment. On the other hand, exaggerating about investment fund needs allows management to have sufficient fund allowance for both positive NPV projects and self-serving endeavours. The contrasting effect of raising capital via debt or equity regarding overinvestment and underinvestment suggests that there is an optimal deal-financing decision that represses agency costs (Stulz, 1990).

In addition, the financial condition of the bidder affects the means of payment decision. Bidders with increased leverage are more prone to use stock swaps as consideration in order to avoid financial distress, while targets with increased leverage are more likely to be offered cash (Hansen, 1987). Existing literature supports the positive relationship between growth opportunities for bidders and the probability of using stock financing (Jung et al., 1996; Martin, 1996), while there is inconclusive evidence on the relationship between growth opportunities and accumulated debt (no evidence: Titman and Wessels, 1988; negative relation: Smith and Watts, 1992; Bradley, Jarrell, and Kim, 1984). Furthermore, apart from accumulated debt, existing high cash balances for the acquirer increase the probability of using cash financing, along with the overall probability that a firm will become a bidder (see e.g. Harford, 1999; but not Chaney et al., 1991). The target financial condition has also been shown to affect the targetiveness of companies, as acquirers seek to gain control of financially constrained firms and relieve them from excessive debt (Erel et al., 2015).

There is evidence that bidder valuation, relative or absolute, affects the method of payment as well. For instance, high stock bidder valuations lead to equity financing (see e.g. Shleifer and Vishny, 2003). This applies better when the bidder is overvalued or relatively overvalued, as bidder

management tries to buy real assets with temporarily cheap capital. On the contrary, Eckbo et al. (1990) suggest that in mixed financed deals, targets of highly-valued bidders are more likely to accept cash for their shares. This result may be influenced by the element of asymmetric information between the bidder and the target: cash consideration is not contingent to future bidder cash flows, and target management, reluctant to undertake the risk of the information asymmetry, may prefer the certainty of cash over the risk embedded in stock swaps.

Acquirers, in general, try to avoid bidding competition. Cash consideration may indicate that the target is highly valued (Fishman, 1989), which may discourage competing bids. In addition, corporate bidders tend to use a higher proportion of cash consideration when they compete against financial bidders (Dittmar et al., 2009). Accordingly, cash is used in tender offers and pre-emptive bids, as it allows for faster deal completion, when compared to stock consideration (Gilson, 1986; Fishman, 1989). The benefits of cash deals regarding competition, information asymmetry, and swiftness in deal completion motivate acquirer and target directors to be more receptive to cash bids.

2.4.2. Target Public Status

The public status of target firms, i.e. whether their shares are listed on a stock exchange or not, has been extensively studied in the M&A literature. Public targets have been associated with lower bidder returns of about 3% when compared to targets (Yim, 2013; see also Officer, 2003, 2004; Mandelker, 1974; Dodd, 1980), while private targets increase bidder returns (see e.g. Wruck, 1989; Hertzel and Smith, 1993). There have been several suggestions for the variety in returns with respect to target public status. One explanation is overpayment; public targets reportedly receive 63.3% higher premia than private targets on average (Bargeron et al., 2008; see also Alexandridis et al., 2013) except for the cases when the ownership structure is similar for both public and private targets, where the premia are similar (Bauguess et al., 2009).

Another explanation stemming from the ownership structure regards the higher ownership concentration in private targets, and its effects on the combined entity after a deal is consummated. Reportedly, private deals have usually very large stock block-holders, while public firms are more accustomed with dispersed ownership (see e.g. Chang, 1998). According to the latter study, the combination of the ownership distribution and the method of payment is responsible for the positive abnormal returns observed in private deals. When private targets are purchased with stock, the sizeable large shareholders in the target will become block-holders in the new entity, providing better monitoring of managerial activities. This expected improvement in governance is reflected on positive abnormal returns for the bidder, and the lack of abnormal returns for cash private deals, where there is no new block-holder in the combined entity, supports this explanation. In a different context to

ownership structure, it has been shown that cash acquisitions of public targets yield positive bidder returns. Public deals tend to destroy more value than private deals, although the actual performance of a deal is contingent to the interaction between target public status and method of payment (see e.g. Fuller et al., 2002; Moeller et al., 2004).

An additional remarkable pattern has been observed with respect to target status preferences by different types of acquirers. Arikan and Stulz (2016) show that firms follow a U-curve in the acquisition activity level after their initial public offering (IPO). The heightened acquisition activity soon after the IPO is focused more on private targets, while as firms mature and reach the second spike in their deal activity, they tend to acquire public targets more. The study does not conclude on whether the observed tendencies could be attributed to size relationships between acquirers and targets, as young firms and private targets tend to be smaller than mature firms and public targets.

2.4.3. Toeholds

Bidders occasionally resort to strengthening their position before officially attempting a bid on a target. One well-known strategy is acquiring a "toehold" on the target, i.e. a block of shares that is relatively sizeable. Toehold sizes can vary, ranging from anything between 1% up to just anything less than 50% of target's stock, but they are usually around 20%, which is above the 5% threshold of ownership at which investors in U.S. have to inform S.E.C. (Betton and Eckbo, 2000).[3] However, the size of the toehold seems to be independent to the prospective target's stock price at the time of toehold investment and it is usually beneficial to the acquirer (see e.g. Hirshleifer and Titman, 1990; Chowdhry and Jegadeesh, 1994; but Singh, 1998).

The existence of toeholds bears several advantages for both targets and acquirers. Block ownership serves as an effective monitoring mechanism, as target management and Board of Directors are aware that a block owner would be more effective in replacing ineffective managers (Fama, 1980; Fama and Jensen, 1983; Shleifer and Vishny, 1986). Even if the management or director turnover is not applied via share voting, block bidders have an advantage on acquiring the firm in order to discipline the management (Dodd and Warner, 1983; DeAngelo and DeAngelo, 1989; Jensen, 1988). This action can be facilitated due to advantage of having a considerable portion of target stock acquired before the company becomes an active target. Bidders holding the toehold can afford bidding higher for the remainder of the target stock, as they have already acquired a significant ownership percentage without the extra cost of the premium usually paid to target shareholders. Competing bidders should be willing to pay much higher than the toehold acquirer, which proves to be an effective pre-emptive measure in favour of first-mover bidders. Nevertheless, hostile target management has the option of

[3] Bradley, Desai, and Kim (1988) report average toeholds of 10% at the time of the acquisition attempt.

offering inexpensive "toehold options" to "white knights", i.e. friendly acquirers which intervene against an unsolicited bid and get control of the target, rendering pre-emptive bidder investments ineffective (Bulow, Huang and Klemperer, 1999).

Toeholds may also hold disadvantages for block investors. As mentioned before, owners with large ownership percentages have more value at stake compared to smaller shareholders. Therefore, they are more likely to actively monitor the actions and direction of the company management even when they do not seek full control of the firm. However, the certainty at which block owners will monitor the firm demotivates the monitoring by smaller owners. This phenomenon has been called the "free-rider effect", because smaller owners get a "free ride" on monitoring by owners with larger stakes in the firm (Grossman and Hart, 1980). The issue is further accentuated when the target company ownership is almost perfectly fragmented with the exception of one large owner (Berle and Means, 1932; Grossman and Hart, 1980). In this case, the committed wealth by each small investor is not high enough to justify the time to monitor the firm, therefore small investors have to rely on larger owners to undertake the costs.

The "free-rider" effect indeed bears some costs for the toehold owner, but the benefits of such stakes outmatch the corresponding costs. On top of mitigating bidding competition, bidders with toehold face overall only mild resistance by target management (Jennings and Mazzeo, 1993), which results in discounts on the premia paid to target shareholders (Betton and Eckbo, 2000; Bris, 2000). The importance of large toeholds in mitigating competition can be observed in the relationship between toehold size and number of bidders. Acquisitions with toeholds of 20% have only one contestant, while similar deals with only a 5% toehold evolve into auctions with multiple bidders (Bradley, Desai, and Kim, 1988). Regarding lower premia, there is contradictory evidence suggesting the target stock price rises with respect to toehold size prior to the bid announcement (Mikkelson and Ruback, 1985; Barclay and Holderness, 1991). At the same time, larger toeholds are related with lower pre-announcement target run-ups (Betton and Eckbo, 2000). In summary, the evidence on whether acquirers pay less for targets in which they own a toehold does not provide unequivocal inferences.

Toehold owners enjoy additional benefits to the opportunity of paying less for full control of the target. Bids with toeholds in place are more likely to be consummated (Walkling, 1985; Jennings and Mazzeo, 1993; Betton and Eckbo, 2000), but they prove to be profitable even if the bid is not successful and the toehold serves only as an investment. The premium to be paid rises by an average of 31% when competing bids appear (Bradley et al., 1988); this premium will be enjoyed by the toehold bidder in case the bidding competition is lost. Furthermore, the performance on a toehold investment may be augmented by the timing of the bidding investor, as toehold investments are

frequently placed when an acquisition attempt on the target is least expected by the market (Bris, 2000).

The benefits of placing a toehold investment has not prevented their frequency to wither through time. Their occurrence peaked during the Fourth U.S. merger wave, when pre-emptive investments offered a significant advantage to unsolicited bids (Betton, Eckbo and Thorburn, 2008). In the years after the Fourth wave, toeholds are expected to be either minor, around 5%, or materially large, at least 20%. Also, in the recent years there seems to be a threshold of toehold size, placed at approximately 9%, at which the deal consummation probability is highly in favour of the acquirer (Betton et al., 2008). However, even sizeable toeholds do not appear to be helpful against hostile and unwavering target management.

2.4.4. Termination Fees

Companies often use contractual agreements in order to insure themselves against changes during deal negotiations. Termination fees serve as such insurance, and they require one party to pay a fee to the counterparty if the deal is not consummated. Depending on the pre-deal agreements, either the target or the bidder may be asked to pay the termination fee. An early view on termination fees was provided by Ayres (1990), and Fraidin and Hanson (1994). Collectively, the two studies observed that having termination fees in place does not distort the overall pricing of deals.

Studies on termination fees became more popular after Pfizer paid a stunning termination fee of $1.8 bil in cash to American Home Products (AHP), in order to break its negotiations with the prospective target Warner Lambert, which was eventually acquired by Pfizer for $90 bil during the late 1990s (Officer, 2003; Bates and Lemmon, 2003). The bidding competition started at a lower point of $75 bil with the initial bid by AHP. The pricing competition raised the bidding price by 20%, resulting in the loss of AHP, which suffered a fall of 25% fall in its stock price in the aftermath. The adverse outcome for AHP highlighted the importance of termination fees as insurance during M&A negotiations, and it incentivised other firms to adopt the measure (Bates and Lemmon, 2003).

At the beginning of the 1990s, the proportion of deals incorporating termination fees was minor, about 2% payable by targets and less than 1% by bidders (Bates and Lemmon, 2003). However, within a few years, the occurrence of termination fees has dramatically increased. The percentages went up to 60% for targets and 13% for bidders in 1998 (Bates and Lemmon, 2003). In parallel, the absolute size of termination fees has increased through time. This trend has been attributed to the gradual increase in deal sizes during period 1997-2004, while the average fee stayed relatively stable at approximately 4% of the target's value (Andre, Khalil and Magnan, 2007). The magnitude of such fees compensate for the sunk transaction and opportunity costs in case deal negotiations fail. This attribute enhances

competitive bidding from the initial bidder (Brantley, 2002; Officer, 200; Oster, 2005, Boone and Mulherin, 2006). In general, target termination fees provide a persuasive motive for the bidder to disclose sensitive and crucial proprietary information during bilateral arrangements (Officer, 2003). Moreover, fees regarding (only) the initial bidder seem to stimulate the market for corporate control (Kahan and Klausner, 2000).

Nevertheless, advocates of competition-disruptive features suggest that termination fees may prohibit an efficient auction process, thus harming competition and decreasing the gains of target shareholders (Braithwaite and Ciardullo, 2004). In addition, nepotism can allegedly be promoted via termination fees, as such clauses allow management to favour specific bidders, obstructing additional bids and restricting shareholder value maximization (Coates and Subramanian, 2000; Brantley, 2002). The fact that court decisions acknowledge the validity of termination fees is contrary to the latter argument, as the government has a stated goal of augmenting competition in the market for corporate control (Braithwaite and Ciardullo, 2004).

Termination fees provide advantages for both targets and bidders, which is the main reason for their proliferation outside U.S. as well (Bugeaud, 1996). When targets cancel negotiations and pay the respective termination fee, the market receives the signal of superior company value, which may attract higher bids in the near future (Leshem, 2007). The benefits to target firms do not stop to future offers, as target termination fees are related to higher rate of deal completion, about +20% on average, and higher premia, +4% on average (Officer, 2003; Bates and Lemmon, 2003). Overall, termination fees payable by both counterparts are connected to large, risky deals with material information asymmetry between participants (Bates and Lemmon, 2003). These cases include high-growth asset acquisitions, although it is less likely to observe their activation when bidder holds a considerable toehold position.

By the same account, bidder termination fees are related to lower premium paid, as well as lower overall target shareholder gains. This is an indication that there is a significant pay-off for the bidder, because of the agreement to provide insurance and a pre-emptive grip on the collective merger gains to target shareholders.

2.4.5. Collar Offers

Termination fees are not the only tools used in M&As providing assurances to either counterparty. “Collars” are contractual agreements limiting the possible payoffs to target shareholders to a set of scenarios within well-specified boundaries. They apply in stock-swap deals and there are two different types of collars (see e.g. Officer, 2004). Fixed Exchange collars set a fixed exchange ratio for the swap, i.e. the number of bidder shares exchanged for target shares, as long as the bidder stock

price remains within a certain price range. If the stock price increases or contracts beyond the appointed boundaries, then different exchange ratios apply. The purpose of this collar type is to mitigate unpredictable changes in the ownership structure of the new entity. The second collar type is called Fixed Payment collar, and it specifies a fixed value received by target shareholders for a specified range in the acquirer stock price. If the stock price moves beyond the agreed limits, different ratios apply. This collar type secures the value received by target shareholders, shielding acquirers against volatile price changes and, consequently abrupt rises in deal consideration.

Collars are more frequently encountered in specific deal settings (see e.g. Fuller, 2003). First, they are frequent in deals where the relative size of the target over the acquirer is on the low end of the distribution, as smaller targets are bound to face higher stock price volatility. Second, in cases where insider ownership is high enough to create incentives for executives of either side to seek for assurances on the expected payoff. And third, when the uncertainty originating in information asymmetry on behalf of the acquirer is low. Collars have reportedly been associated with negative abnormal returns for bidders and higher premia for target firms, especially due to the impact of information asymmetries on the latter firm's stock price (Fuller, 2003; see also Houston and Ryngaert, 1997; Hansen 1987).

2.4.6. Financial Advisors

Some firms have departments that are responsible for the firm's acquisition activity. These companies rarely use the services of financial advisors (Golubov, Petmezas and Travlos, 2012). Most of them, however, seek the services external advisors, so that the acquisition process will lead to the best possible result. The use of these advisors reached levels of about 85% of all deals during 2007, when investment banks and financial consultancies facilitated the deal process at the end of the Sixth U.S. merger wave (Golubov, Petmezas and Travlos, 2012).

Major advisors are, in principle, investment banks and they charge a percentage fee on the deal value, where more reputable advisers charge premium rates, although the higher payment does not necessarily result in higher deal consummation rates (Chemmanur and Fulghiery, 1994). Advisors are paid in order to deliver three main services. First, they search the market for a fitting target or acquirer to buy their customer, and they provide their detailed suggestions in order to allow customer management to deliberate on the options. Second, after contact has been made with their customer's counterpart, they structure the contractual agreements and they map the merger process, so that deal synergies will be maximized (Golubov, Petmezas and Travlos, 2012). This service invokes their role as information providers, as one of the fundamental functions in structuring the merger process is to communicate proprietary information to both counterparts (Beatty and Ritter, 1986; Booth and Smith,

1986; Titman and Trueman, 1986; Chemmanur and Fulghieri, 1994). Third, they advise their clients on strategic activities that will maximise the share of synergies enjoyed by their own shareholders at the cost of the counterpart's shareholders (Brealey and Myers, 2000). Naturally, the latter step has to be done in modesty, as dissatisfied negotiators will cancel the process, leading to the manifestation of sunk costs for both the advisor and the customer.

The choice of hiring advisors of exceptional reputation appears more prominent during sizeable deals (Golubov et al., 2012), with significant information asymmetries, hostility by the bidder, little to no acquisition experience for the buyer and high complexity of deal specifications (Servaes and Zenner, 1996; Kale et al., 2003). In these cases, the presence of financial advisors serves to minimise the transaction costs, as well as to recommend strategic activities for the mitigation of unknown hazards.

The decision to hire renowned advisors is based on evidence displaying financial advisors performance to be highly related to their reputation. However, there are studies suggesting that the reputation of advisors offers, at best, zero abnormal gains (see e.g. Rau, 2000; Servaes and Zenner, 1996; McLaughlin; 1992; Hunter and Jagtiani, 2003; Ismail, 2010). The literature has also evidence for contradicting inferences, since the reputation of the financial advisor seemed to positively connect to their client performance ($65.83 mil around the announcement) and the aggregate synergistic gains of the deal (see e.g. Golubov, Petmezas and Travlos, 2012). Even in cases of top rankings in reputation for both bidder and target financial advisors, the advisor with the relatively higher reputation manages higher returns for their client (Kale et al., 2003).

An additional measure of advisor performance regards deal completion. Highly reputable advisors are connected to shorter deal completion time (Golubov et al., 2012) and higher completion rates, as they match compatible firms with high expected synergies (Kale et al., 2003). Also, advisors aim towards the best outcome for their customer, even if that is a bid withdrawal. Reportedly, they have contributed to cancellation of deals that would have resulted in substantial losses for their clients (Kale et al., 2003). When the deal is beneficial to their customer, highly reputable advisors achieve swift deal completion, which is an indication of success in acting on their client's interests, as prolonged deals raise costs related to uncertainty and competition (McLaughlin, 1990, 1992). Nevertheless, there is occasional contradictory evidence demonstrating that their contribution to deal completion persists regardless of the deal effect on their clients' wealth (Rau, 2000).

Advisor performance is also affected by the level of their exposure to the market, which, in this context, regards the level of publicity of a deal (Golubov et al., 2012). Deals between public firms highlight the advisor's contribution when compared to deals including non-listed companies. Consequently, these deals provide motivation for better performance. As for the bidder's financial advisors, they have to overcome the negotiating power of public targets, which puts even more

pressure on their reputation. Bidders may decide to hire the target company's prior advisors. In this case, bidders companies tend to pay smaller premia, which translates in lower announcement returns for target shareholders (Chang et al., 2016). Target shareholders do not enjoy similar benefits when they hire past advisors of their prospective acquirers. This indicates the importance of information held by target's previous advisors and the negative effect it may have on target shareholder returns, even when confidentiality and non-disclosure agreements are in place.

2.4.7. Competition

A significant source of uncertainty regarding the success of a deal is competition from rival bidders. During the period 1980-2002, around 34% of U.S. deals where not consummated by the initial bidder when an auction was completed (Betton et al., 2009). In the M&A context, competition may have different definitions. Some authors define bidder competition as the number of rival, publicly observable bids for the same target (see e.g. Schwert, 1996, 2000; Moeller et al., 2004). An alternative definition of competition refers to the number of potential rival bidders as bidder competition and the potential substituting target firms as target competition (James and Wier, 1987a). The lowest level of competition is observed when the target negotiates with only one possible bidder. In this case, the level of competition is considered zero. Higher levels of bidder competition are observed in auctions, when larger number of participants indicates higher level of competition.

According to research, the aggregate level of competition in M&As varies through modern economic history. For instance, competition reportedly plunged during the 1990s, as fewer auctions were observed (Andrade et al., 2001; Schwert, 2000). Another study offers contradictory evidence, stating that about half of the deals during that decade were consummated through an auction process and the rest through negotiations (Boone and Mulherin, 2007). In the context of the latter study, the proliferation of antitakeover provisions has not resulted in an uncompetitive market for corporate control. Nevertheless, it has been shown that auctions and negotiations provide similar wealth changes for deal participants (see also French and McCormick, 1984; Hansen, 2001; Povel and Singh, 2006; Ye, 2004). Regarding acquirer wealth effects, there is a positive relation between buyer gains and the number of potential targets in an industry, as well as a negative connection between their gains and the number of potential rival bidders (James and Wier, 1987).

Competition itself is affected by deal specific and industry specific characteristics. For instance, if the bidder and the target could enjoy a set of synergies unique only to their combination, the observed competition will be low (James and Wier, 1987). On the contrary, if the deal is initiated and aims at taking industry-wide inefficiencies that are not unique to the particular pair of bidder and target, competition is expected to be relatively high. Uncertainty in deal consummation and success has

similar effects on competition. In the banking sector, uncertainty over the insolvency of a specific bank has a negative relationship with the number of bids on that firm (Giliberto and Varaiya, 1989). As a side note, inferences from the banking sector may not be fully generalizable to the market population of acquisitions, especially due to the idiosyncrasies and high regulation of the finance sector (Giliberto and Varaiya, 1989, James and Wier, 1987).

Access to information also drives the nature and magnitude of competition. Easier access to information on targets increases the probability of a negotiation turning into a competition, as well as having more rival bids (Fishman, 1988; Hirshleifer and PnG, 1989; Jennings and Mazeo, 1993). This information-driven competition may explain the reason why the number of participants in auctions, which may last for weeks (Bradley et al., 1988), is much higher than, for instance, English auctions, which usually last for minutes. As the information flow increases along with the auction duration, target valuation increases as well. During open auctions, competing buyers observe rival offers and can estimate competing target valuations (Fishman, 1988). The target management, on the other side, has to choose whether they want to assume the costs regarding information revelation to potential bidders. Specifically, they compare the implied costs of disclosing proprietary information to multiple bidders versus the magnitude of gains coming from increased bidder competition (Hansen, 2001). In case discretion is more beneficial, target management may avoid the auction in favour of negotiations with a selected number of bidders (French and McCormick, 1984; Ye, 2004; Povel and Singh, 2006, Boone and Mulherin, 2007). Also, positive association with specific buyers is closely related to observing a negotiation process (French and McCormick, 1984; Boone and Mulherin, 2007).

It also seems that the nature of competitors can affect competition characteristics. For instance, financial bidders offer lower premia in auctions (Dittmar et al., 2012). In this context, a corporate rival bidder may place the winning bid by only marginally raising the prospective premium in a contest against a financial bidder, which is considered value-enhancing compared to "corporate-against-corporate-bidder" contest. This framework provides a rare case when competition can be advantageous to the winning bidder. Most studies conclude on the adverse effect of auctions on acquirer returns (see e.g. Mandelker, 1974; Capron and Shen, 2007; Comment and Schwert, 1995).

Firms employ strategic tools in order to deter competition on both the buyer and the seller sides. Bidders may resort to high pre-emptive bidding in order to discourage rival bids (Aktas et al., 2009; Milgrom and Roberts, 1982; Giammarino and Heinkel, 1986; Fishman, 1988, 1989) as the higher the magnitude of the initial bid, the more restricted the possible gains for the following rival bids (Fishman, 1988). An important issue of high bidding, especially if it is a winning bid, is the cost of the "winner's curse". According to the "winner's curse", the company that achieves the final and settling bid in a sealed-bid auction for assets of unknown value is the firm that has overstated their value the

most (Giliberto and Varaiya, 1989; Varaiya, 1988; Capen et al., 1971). Therefore, high initial bids that discourage competitors from joining may have offered an excessive premium, at least compared to that the rest of potential acquirers would be willing to offer. The deal may had still been consummated by the initial bidder if less aggressive bids were inviting the market's reaction and opinion. "Winner's curse" is still considered a controversial theory, as it has both supporters and critics. For instance, there is evidence financial advisors act on mitigating overpayment for targets by helping acquiring management to estimate the acquisition synergies accurately (Boone and Mulherin, 2008; Kale et al., 2003).

Instead of only bidding high, initial bidders may choose the method of payment more likely to discourage competition. Cash consideration is connected to lower rejection rates by target management, when compared to equity swaps (Fishman, 1989). Accordingly, there is evidence of the positive relation between the level of competition and the percentage of cash in the total consideration (Jennings and Mazeo, 1993), but negative relation to the level of cash holding of the bidder (Harford, 1999). The combination of these findings suggests that if bidders have cash available, they will prefer to include it in the consideration package in order to entice target shareholders and expedite deal completion. Another tool for discouraging competition is the bidder purchase of a toehold in the target firm; a toehold of 10% ownership may prevent rival bidders from entering an auction (Betton and Eckbo, 2009).

As for the seller side, target management has the ability to use termination fees or enter private negotiations with bidders of preference in order to achieve managerial personal gains, adversely affecting shareholders value (Hartzell et al., 2004; Wulf, 2004; Moeller, 2005). However, there is contradicting evidence on whether pre-bid contractual agreements restrict the competitive auction process (see e.g. Coates and Subramanian, 2000; Bulow and Klemperer, 1996; but not Boone and Mulherin, 2007).

2.4.8. Managerial Opposition and Antitakeover Provisions

Bidding companies often face resistance from target management. This resistance contributes to buy-side competition, as it inflates the legal and opportunity costs for the bidder, and offers time to rival bidders to structure and submit their own offer (Jarrell and Poulsen, 1989). Legal costs can be considered sunk costs and, as a result, decrease the deal's net present value and put a ceiling to consecutive, otherwise value-adding offers from the same bidder. Jarrell and Poulsen (1989) support the findings of previous literature (see e.g. Bradley et al., 1988) on the negative relationship between competition and bidder returns, and they also highlight the severe impact of the adoption of the Williams Act in 1968 on bidder gains. Williams Act is a set of amendments on Securities Exchange

Act in 1934 and it requires companies bidding in tender offers to provide registration forms and information before and during the bidding process. In addition, the delay originating from management opposition may be used in order to corrupt bidder management into offering higher premia (Jarrell and Bradley, 1980).

Antitakeover provisions (ATP) are contractual and legal agreements that are usually in place in order to deter unsolicited bids. They are another form of managerial opposition to raiding acquirers, and they could arguably deter general takeover activity, along with competition among bidders. However, Comment and Schwert (1995) find evidence that "poison shareholder right issues", commonly known as "poison pills", and other similar provisions do not mitigate takeover activity during the late 1980s. In some cases, adoption of shareholder rights issues may result in increased competition and big jumps among consecutive rival bids (Comment and Schwert, 1995; Heron and Lie, 2006). The increase in premia is more profound when target firms have "staggered board of directors" in place (Bebchuk et al., 2002). Staggered boards are regular boards of directors with different rules in voting new members. All directors are allocated into different groups, and each time shareholders vote for new directors, they can replace only member of one group, therefore it takes time for shareholders to establish a wholly new board. Other studies offer evidence of a more refined effect of such provisions, as they suggest that they may cause bidder deterrence in the cases of deal cancellation, as withdrawn bids for targets with ATP in place signal target management entrenchment and unreasonable barriers for bidders (Dodd, 1980; DeAngelo and Rice, 1983).

The adoption of antitakeover provisions provides controversial results in acquisition performance. Several studies report negative results in the short-run (see e.g. Jarrell and Poulsen, 1987; Malatesta and Walkling, 1988; Bhagat and Jefferis, 1991), negative in the long-run (Gompers et al., 2003; Bebhuck et al., 2009), positive or insignificant in the short-runs (Linn and McConnell, 1983; DeAngelo and Rice, 1983; Brickley et al., 1988) or contingent to other deal- and firm-specific characteristics (see e.g. McWilliams, 1990; Brickley et al., 1994).

2.4.9. CEO Overconfidence and Behavioral Factors

There is a considerable body of empirical studies reporting the systematic overpayment by acquirers, which is usually attributed to overvaluation of the synergies of combining the two firms (see e.g. Firth, 1980; Bradley et al., 1983; Asquith, 1983; Morck et al., 1990; Hietala et al., 2003). In a previous section, high bidder competition has been related to overpayment due to the "winner's curse", i.e. winning an auction only because the winner overvalued the target more than any other participant (see e.g. Capen et al., 1971). These reasons for overpayment either acknowledge a fault

in the capabilities of acquirer management to assess the prospective synergies properly, or it assumes a random mistake by management. Another theory predicting overpayment considers managerial overconfidence, which assumes a character flaw in CEOs leading to the pursuit of risky acquisitions with usually unexciting returns (Roll, 1986).

According to the aforementioned theory, managers believe in their own superiority against peer CEOs and, generally, the management of other firms. Their self-evaluation leads them to believe they could perform better than those peers if they handled the respective company's administration. Occasionally, they do act on their belief and acquire such firms and, because of their confidence in the impending improvements, tend to pay higher premia than what can be justified by a rational approach on synergy extraction. The overpayment transfers potential synergies and value to target shareholders, leaving the acquirer company financially affected, even in the cases of stock-swap. This theory has found empirical support in the literature. CEOs who show overconfidence by not exercising in-the-money options tend to perform more value-destroying deals (Malmendier and Tate, 2005, 2008). Furthermore, overconfident CEOs rely much more on funding acquisitions with internal funds, as issuance of equity would place the deal under additional scrutiny by shareholders (Doukas and Petmezas, 2007).

The impact of managerial hubris is fairly accentuated for serial acquirers. Billet and Qian (2009) identify hubris in CEOs who have increased their exposure in their firm's stock before a deal. They find that those CEOs who have experienced positive deal returns in the past and, subsequently, display hubristic behavior, tend to underperform in future deals. The outcome of this study suggests that CEOs have substituted "learning" from M&As with behavioral biases, since the accumulation of experience does not result in performance improvement, but value-destruction.

An additional corollary of hubristic behavior is overinvestment. CEOs displaying such characteristics will invest in more projects than the less overconfident CEOs, because they have the sincere, though misguided, belief that they can create value for their shareholders (Heaton, 2002). The observed overinvestment occurs due to the diluted notion of higher control (March and Shapira, 1987), excessive optimism (Gilson, 1989), and undistributed free cash flows (Avery et al., 1998). Overall, hubristic CEOs tend to undertake riskier endeavors than their more rational peers (Cain and McKeon, 2016), and they are not strangers to overstating earnings during providing market guidance, although within the investor-approved window of deviation (Schrand and Zechman, 2012).

Overconfidence is not the only executive behavioral characteristic affecting corporate investment behavior. CEO narcissism, which is different from hubris, has been shown to have a negative effect on acquisition performance (Aktas et al., 2012). In the latter study, the authors measure the extent of narcissism in the use of personal pronouns during interviews. Moreover, CEOs who have adopted

high-end living standards, i.e. consuming expensive services and owning luxurious products, tend to apply loose monitoring mechanisms on their supporting executives, which, presumably unwittingly, facilitates fraudulent activities such as insider trading (Davidson et al., 2015).

The aforementioned characteristics of hubris, narcissism, and affinity to luxury focus on the CEO. Nevertheless, there can be market-wide tendencies that guide the evaluation of acquisition decisions. The price paid by acquirer shareholders has been shown to use the 12-month high of the target's stock price as a reference point (Baker et al., 2009, 2012). The reliance on recent stimuli in order to make decisions on current matters has been labelled "anchoring effect" and it has been studied extensively in the psychology literature (see e.g. Kahneman, 1992; Kahneman and Trevsky, 1979; Trevsky and Kahneman, 1974). The anchoring effect affects bidder shareholders as well, as acquirers are more likely to face negative abnormal returns when the offer price is higher than the target's 12-month high (Baker et al., 2012). It has also been shown that companies identify reference points beyond the prospective target's stock price history. The premia paid for acquisitions in the recent past seems to have a significant effect on the premium in a deal, especially when past acquisitions share similarities with the one at hand, such as similar size, target country, and similar acquirer deal experience (Malhotra et al., 2015).

2.4.10. CEO Retention

The deal characteristics described so far regard aspects before or during deal consummation. Another deal aspect directly related to the firms involved regards the retention or replacement of the pre-deal CEOs. In this section, I focus on the related decision of CEO turnover in the context of acquisitions, but the general finance literature on CEO employment expands beyond the M&A framework. This topic is crucial for both shareholders and professional managers, since firm performance is affected by management quality, and a turnover due to poor performance is reported to materially affect the respective executive's career. More specifically, it is rare for a replaced public-target CEO to assume a senior management position in a public firm afterwards (see e.g. Agrawal and Walkling, 1994).

Top management is responsible for key decisions on corporate strategy, progress, and profitability. Consequently, top executives should be held accountable for any actions that do not contribute to the maximization of the shareholder value in the long-run, especially if they satisfy personal gains instead. In case they operate the firm inefficiently and ineffectively, participants in the market for corporate control are inclined to take action in order to gain control of the firm and discipline target management (Marris, 1963; Manne, 1965; Mitchell and Lehn, 1990). The disciplinary mechanism of the market for corporate control is also subsidized by the nature of target ownership structure. Monitoring costs are relatively high for individual shareholders, especially when the ownership

structure of the firm is highly fragmented (Berle and Means, 1930). In these cases, the prospective acquirer will have a higher benefit in monitoring the firm, and the marginal cost for monitoring target management will be relatively lower than the one of smaller investors. Prospective bidders are encouraged by suboptimal asset allocation by the target, such as completed or scheduled value-destroying acquisitions (Jensen, 1986; Mitchell and Lehn, 1990). The phenomenon of inefficiently-operated firms being acquired and restructured was prevalent during the Fourth U.S. merger wave, when previously underperforming bidders became targets of hostile acquisitions (Mitchell and Lehn, 1990). Even the increased probability of takeover can initiate management replacement by target directors (Huson et al., 2004).

CEO turnover has been documented to be more probable for older CEOs (Murphy, 1999), but the majority of studies relate the underlying decision of turnover to performance indicators (Coughlan and Schmidt, 1985; Warner et al., 1988; Weisbach, 1988; Gibbons and Murphy, 1990; Murphy and Zimmerman, 1993; Blackwell et al., 1994; Kang and Shivdasani, 1995; Huson et al., 2004). The general consensus in the literature suggests that the probability a target CEO will be replaced rises inversely to the firm's performance, be it operational or stock-based. This, of course, holds also for acquirer CEOs, as value destroying acquisitions affect the stock price significantly. Widely discussed examples of such deals are the acquisition of Snapple Group by Quaker Oats, and Time Warner by AOL, which resulted in announcement losses of approximately 10% for each acquirer, which were subsequently extended by losses from the steeply discounted divestitures of the respective firms (Lehn and Zhao, 2006).

It has been suggested that stock performance may not be an accurate indicator of actual performance and, consequently, CEO retention. Acquirer management may take advantage of the company's overvalued stock in order to safely buy real assets that are relatively undervalued (see e.g. Shleifer and Vishny, 2003). If this is the case, the post-deal firm performance is supposed to be higher when compared to firms that do not take advantage of their temporarily inexpensive stock (see also Savor and Lu, 2009). Nevertheless, this notion has been counter-argued by Lehn and Zhao (2006), as they observe that bidder CEOs of bad performing deals are replaced regardless of the method of payment.

Other studies acknowledge the decision of replacing incumbent management as more complex than a mere reaction to the firm's recent performance. Various firm-specific characteristics seem to affect this decision. Regarding the CEOs, there is evidence that the probability of turnover is negatively related to the level of internal ownership (Denis et al., 1997). This notion is connected to the literature on ownership structure, which advises on the effects ownership distribution on corporate governance and performance. For instance, dispersed ownership contributes to the "free-rider" issue mentioned earlier, which in turn increases the probability of takeover and managerial discipline. Regarding

acquisitions, the probability of target management retention after the deal increases along with the levels of target insider ownership (Bargeron et al., 2009). Despite internal ownership, the ability of target management affects the decision of turnover. It is suggested that well-performing management is more likely to be retained, in order to facilitate integration and the realization of synergies (Matsusaka, 1993; Bargeron et al., 2009). On the same grounds, competent management seems to increase the value of the deal for the bidders, as the implied premium paid to target shareholders is higher when target management is retained in private equity deals, suggesting higher synergies for the combined entity (Bargeron et al., 2009). According to the latter study, if there are no managerial synergies, but the deal is driven by industry-wide factors as mentioned earlier, then the probability of management retention is decreased.

Excessive managerial power or revision of planned investments affects the turnover decision as well. For instance, CEOs who hold the position of chairman are less likely to be replaced, even in the light of poor performance (Goyal and Park, 2002). Moreover, CEOs that decide to cancel bids, which seem to destroy value, have higher retention probability, when compared to colleagues who complete value-destroying deals (Lehn and Zhao, 2006).

Another firm specific characteristic concerns the composition of the board of directors. It has been observed that BoDs with outsider independent directors are more likely to replace underperforming management (Weisbach, 1988; Hermalin and Weisbach, 1988). The high quality of outsider-dominated BoDs is evident in the respective increased post-replacement performance (Huson et al., 2004). In addition, the size of boards may pose a hindrance to better corporate governance, as ineffectiveness increases along the size of the board (Jensen, 1993; Yermack, 1996). On the other hand, contrasting evidence suggests that corporate governance processes have been optimally customized, as it is implied by the lack of connections between the probability of value-destroying bidder management replacement and governance metrics (Lehn and Zhao, 2006). However, even the previously documented benefits of strict and disciplinary boards are not without caveats. While Board independence has been suggested to keep management in line, boards which are friendly to their CEOs have been associated with positive announcement returns (Schmidt, 2015). The latter is attributed to the capacity of friendly boards to advise the CEO, instead of being in a continuous alerted state on evaluating whether they should replace her.

Deal characteristics may affect target CEO retention as well. Tender offers with a relatively high number of competing bidders result in lower probability of target management retention (Bargeron et al., 2009). This may be an indication of low management synergies or general administrating capacity.

Over and above CEO retention, target CEOs who want an exit themselves may invite acquirers to take over their firm. Specifically, CEOs who are closer to retirement are not only prone to act with short-term gains in mind (Dechow and Sloan, 1991), but they may also seek to become acquired in order to receive a hefty departing bonus (Jenter and Lewellen, 2015). Nevertheless, this ostensibly selfish act does not result in losses for target shareholders, as target returns and premia paid are similar to deals and firms of similar characteristics. This is in accordance with recent literature suggesting that CEOs care to preserve their legacy by performing valuable long-term investments even when they approach retirement age (Kang, 2016).

The retention of key personnel may endogenously affect the acquisition decision. CEOs are not the only employees that matter during acquisition deliberations, especially in firms which are human-capital intensive (LaVan, 2000), since, at least in these cases, the quality and performance of human capital is one of the main factors of the company's current and future success (Castanias and Helfat, 1991). Accordingly, prospective acquirers will attempt a bid on firms as long as they are confident or reassured that key personnel will remain in the company after the deal is consummated (Younge et al., 2015). This effect is stronger in industries in which companies rely on people for knowledge retention and, in reverse, weaker in industries where knowledge retention is insured by the judicial system with the application of patents, non-compete clauses etc.

2.5. Concluding Remarks

M&As are market phenomena that cannot be studied in isolation; the respective industries of the participant firms, as well as the firms themselves have to be taken into consideration when investigating any aspect of a particular deal. Part of the current review has been devoted to corporate functions that are presumably only implicitly related to M&As, though after careful inspection they prove to have significant overlap. Acquisition decisions and performance yield sizeable effects on company performance, shareholder wealth, executive careers etc. The purpose of this review has been to provide a general scope of acquisitions, and highlight the different aspects at which the corporate finance practitioner, academic, student, or even enthusiast can analyze them. The review has not been complete by any means, and the reality described in the cited studies may be just an obsolete view, as the dynamically changing marketplace defines new rules and interrelationships in M&A conduct and performance.

Part II

Empirical Analysis

3. Acquisition Target Prediction: Multi-period Analysis and Market-Wide Predictors

3.1. Introduction

The academic endeavour of predicting acquisition targets commenced in the early 1970s with the studies of Simkowitz and Monroe (1971) and Stevens (1973). The main motive for accurate and timely prediction of whether a firm will receive a bid resides in the abnormally high returns enjoyed by target shareholders. The high returns are attributed to the premium paid to shareholders in order to agree to sell their shares, and the stock price run-up, i.e. the target stock-price appreciation before the public announcement of the deal. Andrade and Stafford (2004) report the combined effect of acquisition premium and stock price run-up to be 23.8%, measured for the period starting 20 days before the announcement and ending with the deal completion. Even when considered independently, acquisition premia and run-ups offer striking returns to target shareholders. Mescall and Klassen (2013) estimate the international average premium to be 31.7% with respect to the target firm's share price 4 weeks before the announcement. The respective average premium for U.S. firms has been 52.6% for the period 1990-2007 (Alexandridis et al., 2013). Similarly, run-ups have amounted to an average of 13.3% (Schwert, 1996), a figure that has been connected to active management of news releases by the target management in the few weeks before the official announcement (Ahern and Sosyura, 2014).

The impressively high returns of target shareholders invite investors to concoct strategies and tools that identify prospective targets in a timely manner. Jensen and Ruback (1983) have argued for the difficulty of timely predicting acquisition targets and, supporting their notion, the majority of studies have achieved relatively uninspiring progress to this day. A voluminous part of the general M&A literature has focused on identifying target characteristics and their effect on returns or completion probability (see, e.g., Hasbrouck, 1985; Powell and Yawson, 2005; Shleifer and Vishny, 2003; Rossi and Volpin, 2004), while much fewer studies have attempted the development of potent acquisition prediction models. The seminal study in the literature strand of Acquisition Target Prediction (henceforth ATP) is provided by Palepu (1986). In his study, companies in the manufacturing industry are classified as prospective targets or non-targets on the basis of 6 key sets of factors, namely inefficient management, growth-resource mismatch, leverage, liquidity, industry disturbance, and P/E ratio. Palepu has established the logistic regression as the model of preference in the ATP literature and has accounted for several other methodological misspecifications. His findings support the arguments of Jensen and Ruback (1983), since he concludes for the improbability of constructing profitable investment strategies by predicting targets. Nevertheless, more recent studies achieve sizeable positive abnormal returns (Cremers et al., 2009; Brar et al., 2009).

The current study follows the most celebrated examples in the ATP literature (see e.g. Palepu, 1986; Brar et al, 2009; Bartley and Boardman, 1990), investigating potential factors of firm targetiveness, i.e. the firm's attractiveness to potential acquirers, and providing robustness tests on the model's prediction and investment performance. The new predictors, based on academic literature and anecdotal evidence, are mainly focused on the industry wide effects that may increase firm targetiveness. A set of predictors is based on the neoclassical theory of acquisitions (see e.g. Gort, 1969) and the industry-wide activity in the market for corporate control. If a shock occurs in the industry, acquisition activity may cluster into an industry or market merger wave. The momentous nature of merger waves suggests that the incremental increase in the number and value of acquisitions in an industry could augment individual firm targetiveness. Similarly, the presence of an active serial acquirer is expected to have a positive effect on firm targetiveness, as the appearance of proven acquirers may be a prelude to more acquisitions. In addition, changes in market concentration have been theorised to predict market activity (see e.g. Gorton et al., 2009) and, thus, individual firm targetiveness. In the cases of market consolidation, expectations lean towards lower activity and targetiveness, as acquirers could be deterred by lack of liquidity (Harford, 1999, 2005) and potential regulatory intervention (see e.g. Brown, 1989).

Targetiveness could increase with the relative level of cash in the industry, since capital liquidity has been established as a necessary prerequisite for industry merger waves to escalate into market-wide phenomena (Harford, 2005). In addition, the combined announcement performance of acquirers and targets in an industry may cause fluctuations in individual firm targetiveness. The argument is based on the behavioural characteristics of management, where CEOs may act on envy, personal incentives, or inflated optimism on the market's contemporary view on deal-making. Finally, I include firm-specific variables on the company's past as a target, testing for the effects of received withdrawn bids in its recent past on its future targetiveness.

The inferences drawn from previous studies regard single-period models. This methodology provides intuitive results, but it may allow for biases due to period-specific characteristics in the sample. The current study introduces a test for performance intertemporality in terms of both prediction accuracy and investment profitability. The multi-period analysis indicates the dynamically changing capacity of both individual predictors and the model as a whole.

The period-varying results in the current study provide useful insights. For instance, when the model is performed on the sample period 2007-2011, it highlights only two of the novel factors as statistically significant. However, the multi-period analysis reveals a strikingly different picture. Most novel variables display statistical significance over time. The period-specific relevance of factors is strong evidence on the dynamically changing criteria regarding the acquisition decision-making process, as well as on the latent effect some of the factors may have on firm targetiveness.

The model for the sample period 2007-2011 performs better than the literature median in predicting acquisition targets. The concentration of actual targets in the "Predicted Targets Portfolio" for 2012 is 8.6%, higher than the second best prediction rate of 4.8% (Powell, 2004), and falls behind the highest prediction rate of 45.2% achieved by Brar et al. (2009). Furthermore, the results reiterate the conclusions of recent studies regarding the construction of profitable investment strategies (Brar et al., 2009; Cremers et al., 2009). I follow Brar et al. (2009) in using market-adjusted returns in order to measure the portfolio performances. The "Predicted Targets Portfolio" achieves returns of 4.62% for 2012, considerably higher than the respective performance of -3.10% for non-targets. The investment performance of the model is emphasized in the multi-period analysis, as portfolios of predicted targets outperform the corresponding portfolios of non-targets in all periods, and occasionally surpass the "Actual Targets Portfolios".

This study contributes to several aspects of the extant ATP literature. First, prior ATP attempts have focused mostly on company-specific conditions and attributes in order to measure targetiveness. However, the indifference towards market or industry conditions implies that acquirers make investment decisions regardless of the economic environment, which is a proposition contrary to the corollaries of merger wave studies (see e.g. Harford, 2005). The set of potential predictors is extended to include industry-wide characteristics and the results verify the connection between firm targetiveness and market conditions. Second, this study provides insights on ATP model intertemporality. The time-varying statistical significance of factors is indicative of the dynamically changing decision-making criteria, as well as the surprisingly low intertemporality of acquisition predictors. The studies providing inferences from a single-period model may have over- or under-estimated the importance of the predictors or the effectiveness of the methodological novelties they introduce.

The rest of Chapter 3 is structured as follows. The second section presents the literature review on ATP studies. The third section discusses the criteria and specifications of target and control firms. The fourth section exhibits the methodological aspects of the study in detail. The fifth and sixth section present the results of the main analysis. Finally, the last section summarises the chapter with key concluding remarks.

3.2. Literature Review

Academic literature in ATP can be traced back to the beginning of 1970s, where Simkowitz and Monroe (1971) and Stevens (1973) had the first attempt in establishing predictors of acquisition bids. The last 40 years of research have witnessed several studies on the field, but considerably fewer than other strands in the finance literature. Nevertheless, the evolution of the methodological tools and the potential acquisition predictors has been steady and meaningful, leading progressively to more effective models and higher levels of predictive accuracy.

The following sections provides a literature review on the several hypotheses developed through time, the methodological developments, such as the different models used, the cut-off probability rules, sampling techniques, and, finally, the performance of the past studies in both predictive capacity and investment profitability.

3.2.1. Hypotheses in the Literature

3.2.1.1. Inefficient Management Hypothesis

Several studies have documented the replacement of value-destroying management teams or top executives (see e.g. Mitchell and Lehn, 1990; Parrino, 1997). In the context of acquisition activity, managers performing value-destroying acquisitions have higher probability of turnover (see e.g. Lehn and Zhao, 2006). A standard definition of firm value identifies the present value of all future cash flows pertaining to shareholders as the fair value of common equity (see e.g. Fisher, 1930; Williams, 1938). Along these lines, the term inefficient management refers to collective executive actions which do not maximise the firm's future cash flows. Although actual maximisation of the cash flows is impossible to verify, inefficient managers are usually those who considerably deviate from the industry standards in terms of performance. In this context, value-destroying acquisitions are endeavours which do not perform as well as other investments could, at least according to shareholder expectations. Accordingly, "Inefficient Management Hypothesis" posits companies which are not run optimally are more likely to be targeted and restructured. The hypothesis was introduced by Dietrich and Sorensen (1984) and yields the testable prediction that poor results in key performance indicators will be associated with disciplinary acquisitions. Palepu (1986) tests this hypothesis in his seminal work, and it has become a standardised component of most acquisition prediction studies. The proxies used to capture management efficiency vary significantly among the different studies in the literature, since managerial performance tends to be multi-faceted.

Several studies have verified the hypothesis' expectation, as they identify a negative relationship between managerial performance and firm targetiveness. Firms with sound performance offer fewer

opportunities for prospective acquirers to restructure the firm and run it materially better. Thus, firms displaying low performance indicators are more probable acquisition targets. However, statistical significance of managerial efficiency proxies has not been unanimous among studies. Only a portion of the available studies finds a statistically significant effect (Palepu, 1986; Chen and Su, 1997; Barnes, 1998, 2000; Cudd and Duggal, 2000; Brar et al., 2009), while the effect in each study has been captured by different instruments. The variation in results raises questions on the potential causes of non-consistent statistical significance, especially due to the highly intuitive nature of the hypothesis. A plausible explanation would attribute the occasional insignificant effect to the acquirer perception that, although the firm does not perform well, external disciplinary action would not improve the company's performance enough to justify the acquisition attempt.

3.2.1.2. Growth-Resource Mismatch Hypothesis

Investor expectations on company performance is shaped by various factors, such as the resources availability and firm growth. The amount of resources have been approximated by accounting information on capital liquidity and leverage, and growth has been estimated with respect to sales (see e.g. Palepu, 1986). The "Growth-Resource Mismatch Hypothesis" considers contrasting cases of growth prospects and availability of resources. In detail, the hypothesis asserts a firm could be targeted if its performance has been disproportionate to the resources available. If the firm's sales growth surpasses the industry average, while it displays below average liquidity and above average leverage, then the firm has outperformed the market's expectations and could potentially be targeted for its efficiency , know-how etc. In this case, the perceived outperformance is attributed to a superior characteristic that allows remarkable sales performance, despite the restricted flexibility regarding both cash reserves and additional debt capacity. In the opposite case, where the firm shows below average sales growth and leverage, while liquidity is high, the company has fallen behind the market's expectations. Contrary to the previous case, acquirers will seek to restructure the company and release its assets' hidden value. "Growth-Resource Mismatch Hypothesis" is argued to have a significant connection to Jensen's (1986) free cash flow theory of takeovers (Powell, 1997), as companies performing inconsistently to their available resources will become targets of disciplinary acquisitions. Several studies have found supportive evidence for this hypothesis (Palepu, 1986; Powell, 1997, 2001, 2004; Cudd and Duggal, 2000).

3.2.1.3. Industry Disturbance Hypothesis

Gort (1969) theorises economic shocks may trigger a series of acquisitions clustered in time and industry, occasionally in the form of aggregate merger waves. This theory is the basis of one of the most prominent theories driving acquisitions, the "Neoclassical Theory", which identifies adjustment

to economic shocks as the primary reasons for acquisitions and other restructuring activities. Accounting for Gort's theoretical expectations, Palepu (1986) tests the "Industry Disturbance Hypothesis", which postulates that an acquisition could be a signal of an industry-wide economic shock and, due to the clustering tendency, more deals would be expected in the same industry in the near future. The hypothesis finds support in several studies (Cudd and Duggal, 2000, Brar et al, 2009). However, Palepu (1986) finds results opposite to his expectation. Specifically, he reports a negative relationship between a company's targetiveness and the occurrence of an acquisition in the recent past. Palepu attributes this counterintuitive result to the nature of merger waves, which tend to expand over longer periods of times than one or two years (see e.g. Harford, 2005; Alexandridis et al., 2012).

3.2.1.4. Size Hypothesis

The size of a firm yields intuitive expectations on a company's targetiveness. The capital required for a firm purchase increases along with the company size, which can be a significant obstacle for prospective acquirers, as their fund-raising capacity cannot change significantly in the short-run. In addition, target size affects the post-acquisition integration process, as streamlining and incorporating larger entities may prove to be increasingly challenging (see e.g. Pablo, 1994; Alexandridis et al, 2013). In the general M&A literature, the negative relationship between acquirer announcement returns and the relative size of targets versus acquirers has been established (Moeller et al., 2004). The "Size Hypothesis" accounts for all the aforementioned inferences and suggests a negative relationship between target size and targetiveness.

Typically, target companies are considerably smaller than their acquirers. Ouimet (2013) shows that during the 1990s and 2000s, the average relative size of the target against the acquirer has been 11% in minority acquisitions and 18% in majority acquisitions. This relative size magnitude could be attributed to issues mentioned above. For instance, acquirers would face higher integration adversities with firms of the same size, when compared to much smaller targets (see e.g. Kusewitt, 1985; Datta, 1991), thus they decide to aim for significantly smaller ones. On the front of corporate governance, large firms may have a broader and more effective arsenal of antitakeover defences (Palepu, 1986). Acquirers will have to pay a higher price in order to overcome the established defences, rendering the acquisition less profitable and, thus, less attractive. In contrast, smaller firms are expected to exhibit less resistance and, therefore, destroy less value in the pre-acquisition process.

ATP literature has found ample support for the "Size Hypothesis", verifying that large companies display less targetiveness that their smaller peers (see e.g. Bartley and Boardman, 1990; Barnes, 1998, 2000; Brar et al., 2009).

3.2.1.5. Undervaluation Hypothesis

Neoclassical theory is not the sole theoretical framework speculating on the reasons stimulating acquisitions. Another popular framework identifies stock price misvaluation as a potent perpetrator. Specifically, companies valued lower than their fair price have higher targetiveness as acquirers could cash in the appreciation in target's value after markets become efficient again (see e.g. Shleifer and Vishny, 2003). A more general version of this framework regards relative mispricing, where acquirers pursue targets who are relatively undervalued to them, employing relatively cheap equity capital to acquire valuable assets (Rhodes-Kropf and Viswanathan, 2004). Studies in ATP literature have attempted to capture the effect of potential undervaluation. However, only few studies find supportive evidence (Walter, 1994; Powell, 1997, 2001, 2004; Brar et al., 2009).

3.2.1.6. Price-to-Earnings Hypothesis

Stock price valuation has an explicit relationship with the market's view on the company's growth prospects. The "Price-to-Earnings Hypothesis" addresses this relationship, assuming the market's view on company's price-to-earnings ratio will affect its targetiveness. Palepu (1986) suggests low P/E companies make promising targets for firms with higher ratios, as the acquirers are expected to apply their skills and resources so that target-earnings growth rate will rise to match their own. This argument assumes the market will consider the acquirer individual P/E ratio before the deal and apply it to the new entity after the deal consummation. Despite the intuitive expectations, the P/E hypothesis has not found support in the literature.

3.2.1.7. Resources Hypotheses

ATP literature has exhibited several hypotheses regarding the resources available to the firm. The main argument permeating all these hypotheses regards the increased firm targetiveness in the face of resource abundance or scarcity, depending on the resource. For instance, scarcity of liquidity in a firm could cause disturbance in operations and investments. The firm ought to have the necessary funds to pay suppliers within a considerable amount of time, otherwise procurement of raw materials or intermediate products will become restrained. If production is interrupted due to lack of necessary inflows, then the firm may not be able to achieve the required cash flows in order to pay back its obligations and, gradually, having fewer suppliers willing to allow it buy resources on credit. This situation may unfold into a vicious circle leading to bankruptcy. Similarly, companies with liquidity deficiency may underinvest and, eventually, lose market share to competitors who have been investing adequately. The operational and underinvestment issues could be alleviated by acquirers willing to inject liquidity to the firm. This concept has led to the "Liquidity Hypothesis", which states that firms with low liquidity are more likely to be targets of acquisitions (see e.g. Palepu, 1986). The

underlying assumption is the willingness and ability of the acquirer to mitigate the target's liquidity deficiency. ATP studies have not provided support for "Liquidity Hypothesis."

The "Leverage Hypothesis" accounts for a latent resource of the firm: debt capacity. Relatively low levels of debt in the capital structure imply spare debt capacity, which can be considered a form of dormant available resources. However, excessive debt does not suggest only lack of debt capacity, but also sizeable recurring payments to credit providers. Considerable costs of debt servicing may cause the same underinvestment issue with lack of liquidity, as managers would be focused on achieving adequate operating income to meet the company's fixed obligations. In this case, safe investments would be preferred against riskier and, potentially, more lucrative projects. Furthermore, highly levered firms will have to face insolvency costs, both direct (higher debt yields) and indirect (deterred business relationships), even if they avoid full-scale bankruptcy. The combination of additional hurdles connected to insolvency hazard and fixed obligations to credit providers may trigger an avalanche of issues leading to bankruptcy. These adverse outcomes could be avoided in the same fashion with liquidity scarcity. The firm could be purchased by an acquirer willing to alleviate the target from its debt overload (Erel et al., 2015). Hence, "Leverage Hypothesis" asserts firms with high leverage will have higher targetiveness. Leverage indicators have found minor support in the literature (Cremers et al, 2008; Palepu, 1986).

Cash liquidity and debt capacity are not the only resources available to the firm. Property, plants, equipment, as well as all other fixed assets are important resources with multiple uses. These assets could be used as debt collateral or be divested in order to augment liquidity and the operational focus of the firm. Ambrose and Megginson (1992) advised for higher attractiveness of firms with higher levels of fixed assets. The "Real Property Hypothesis" states that the level of fixed assets in a firm's balance sheet should increase firm targetiveness. Ambrose and Megginson (1992) provide the only study with evidence supporting their hypothesis.

3.2.1.8. Corporate Governance Hypotheses

The firm is more than a legally defined collection of monetary and property resources. The managerial team, the board of directors, and even the ownership structure of the firm could yield effects on its targetiveness. For instance, higher managerial ownership has been argued to decrease the probability of a firm receiving a bid (Mikkelson and Partch, 1989), but it increases the probability of deal completion when a bid is eventually received (Song and Walkling, 1993).

In addition, several studies have examined the connection between institutional ownership and the probability of an incoming bid. Shleifer and Vishny (1986) expect block ownership to result in more effective managerial monitoring and more likely to an acquisition, instead of a proxy fight or management turnover. However, institutional block ownership has a negative connection to target

shareholder premium gains (Stulz et al., 1990). The literature does not seem to have fully crystallized the multifaceted impact of institutional ownership on acquisitions.

Ambrose and Megginson (1992), inspired by the aforementioned studies, have introduced variables to test the effect of insider ownership on firm targetiveness. They argue management teams with significant ownership share wealth interests with shareholders, thus high insider ownership is a deterrent to bidders with relatively low premium offers. They also expect lower targetiveness for firms with antitakeover provisions in place. As for large block-holders, they find empirical support only for year-on-year changes of institutional ownership, suggesting a negative relationship with firm targetiveness, i.e. decreases in institutional ownership in a firm will increase its targetiveness. Cremers et al. (2008) offer an opposing hypothesis on institutional ownership, expecting higher block ownership to augment targetiveness. Their hypothesis is in accordance with the argument connecting higher block ownership and the probability of takeover (Shleifer and Vishny, 1986). They do not offer conclusive results, as the respective proxy display a positive effect on targetiveness for the aggregate sample between 1981-2004, but a negative effect for the latter portion of the sample, i.e. 1991-2004.

3.2.1.9. Trading Attributes Hypothesis

Brar et al. (2009) show that stock market metrics reveal information on company targetiveness. Specifically, they find targets display upwards momentum in stock prices and trading volume during the month before receiving a bid. Their arguments are in accordance to the literature identifying stock run-ups during the month before the bid announcement (see e.g. Goergen and Renneboog, 2004). Although their results could be an implicit indication of information leakage and potential insider trading, literature exhibits evidence of news management by the counterparts ahead of an announcement (Ahern and Sosyura, 2014).

3.2.2. Methodology in the Literature

Developments in ATP literature have not been restricted to only adding potential targetiveness factors. Methodological innovation has frequently been the main contribution in some studies but the literature has occasionally been reluctant to adopt these innovations, as each next study frequently suggests a new approach. I review the developments in key methodological aspects.

3.2.2.1. Model

The main goal of an ATP study is to measure the targetiveness of a company and classify it accordingly as a potential target or non-target. Since the categorization is binary, this type of study

requires the use of discrete choice models. The set of models used in ATP literature does not exhaust the variety of discreet models used in the general finance literature, and researchers seem to be undecided on which model is the most appropriate in the context of ATP.

The most frequent models in ATP studies have been the multiple discriminant analysis[4] (MDA) and logit models.[5] In the context of ATP studies, the main advantage of logit models over MDA is the attribution of a probability to the event materialising (Dietrich and Sorensen, 1984). Some researchers have been inspired by bankruptcy prediction studies, which deploy a probit model to forecast events of insolvency (Harris et al., 1982; Espahbodi and Espahbodi, 2003).

An attempt to compare the effectiveness of different models is performed by Espahbodi and Espahbodi (2003). They compare probit, logit, MDA, and recursive partitioning models in order to identify the most fitting model specifications for the context of ATP. The recursive partitioning model performed slightly better that the rest, though its superiority appears questionable during the model validation process. The results affirm the complexity of identifying takeover targets, and advised for the importance of introducing new potent factors of targetiveness instead of deliberating on alternative existing models.

3.2.2.2. Cut-off Probability

Logit models, by construction, offer the probability of an "event" materialising, which, in the ATP literature, is the instance of a firm receiving a bid. However, the standalone "event" probability is not adequately informative, as it is necessary to consider it in the context of the study to define whether the event is likely to materialise or not. Thus, studies utilizing logit and probit models specify a cut-off probability, which serves as the threshold defining whether a firm is classified as a prospective target or not.

Palepu (1986) has been the first to address the importance of a cut-off probability rule that shares the goal of a well-defined decision making process. Specifically, the aim of the ATP researcher should be reflected on the criterion used to classify firms as targets and non-targets. Initial studies in ATP (see e.g. Dietrich and Sorensen, 1984) and bankruptcy studies have been using random cut-off threshold of 50% (see e.g. Eisenbeis, 1977; Ohlson, 1980). Palepu argues that the arbitrariness of the cut-off probability complicates the interpretation of results. He proposed a decision context for the cut-off probability, in which investors maximise their returns on a portfolio of potential targets. Specifically, he observes the density functions of targets and non-targets during the model-structuring period and he assumes the cross section of the two functions as the point where it would be equally probable for a firm to be a target and a non-target. Then, he defines the probability corresponding to the cross section

[4] See Simkowitz and Monroe (1971), Stevens (1973), Barnes (1990), Espahbodi and Espahbodi (2003).
[5] See Dietrich and Sorensen (1984), Palepu (1986), Ambrose and Megginson (1992), Barnes (1999), Cudd and Duggal (2000), Powell (2001, 2004), Cremers et al. (2008), Brar et al (2009).

as the optimal cut-off probability, and he uses it to forecast potential targets for the year after the model structuring period. This methodology aims to minimize the classification errors and maximise the investment strategy returns. This process of optimal cut-off probability estimation has been adopted by several subsequent studies (see e.g. Ambrose and Megginson, 1992; Walter, 1994; Barnes, 1998).

An important assumption in Palepu's rule is the equal and unchanging effect of misclassification errors for incorrect events and non-events. In detail, Palepu assumes that the exclusion of a target and the inclusion of a non-target in the "Predicted Targets Portfolio" has the same impact on investment performance. However, dissimilarities in the stock market performance of the average targets and non-targets suggest a different effect by misclassification errors, especially in opportunity cost (Powell, 2001, 2004). This could be attributed to the significantly superior returns of targets versus non-targets (see e.g. Jensen and Ruback, 1983). Specifically, Officer (2007) documents a median acquisition premium of 50.53% for public targets during the period 1979-2003, while S&P 500 displayed an annualised performance of 11.29% during the period 1964-2013 (Damodaran, 2014). Thus, the attempt to minimise misclassifications may result in the exclusion of targets who are attributed a probability below the cut-off threshold; their exclusion may improve the model accuracy in classification, but it may simultaneously hurt the performance of an ATP investor.

Powell (2001, 2004) identifies the flaw in Palepu's assumption and uses it as the foundation for a new classification rule. Specifically, he refocuses on the predominant goal for ATP studies: the formation of profitable investment strategies by timely and accurately classifying prospective targets. Since target firms enjoy higher returns than the average non-target firm, outperforming the market could be achieved by creating portfolios with higher concentration of targets. In order to apply this criterion, he constructs ten equally-sized portfolios and he sets the optimal cut-off probability to be the lower bound probability of the portfolio with the highest concentration of targets. This methodology does not perform better than Palepu's rule in the context of Powell's (2001) study, but it displays superior performance for Brar et al. (2009). The latter study introduces additional methodological innovations, hence the improved performance cannot be attributed to the classification rule without further investigation.

3.2.2.3. Sampling

The early ATP studies (e.g. Simkowitz and Monroe, 1971; Stevens, 1973) have used an equal number of targets and non-targets in order to structure the prediction model; this technique is labelled "state-base" approach. Palepu (1986) discusses the downside of this sampling method with respect to the logit model used by the literature. He argues that random sampling would result into an inconsequential concentration of targets in the aggregate testing sample, as targets constitute only a

small fraction of the registered firms. Since the commonly used maximum likelihood estimator assumes random sampling, the combination of "state-base" sampling and the estimator results in biases in the variable estimates. The biases incurring after incorrectly assuming randomness have been discussed before by Manski and Lerman (1977) and, empirically, by Zmijewski (1984). Palepu applies the solution provided by Manski and McFadden (1981), replacing the common maximum likelihood estimators with conditional maximum likelihood estimators. The same methodology has essentially been used in several subsequent ATP studies (see e.g. Barnes, 1990; Cudd and Duggal, 2000; Powell, 1997, 2001).

Bartley and Boardman (1990) follow a different sampling procedure. After they structure the acquisition sample, they randomly select non-target firms as the control group. The size of the target firms group for each year corresponds to the percentage of deals pertaining to that year. For instance, if 5% of the deals of the overall deal sample occur in a year, the control sample would amount to 5% of the total non-target firms in that year as well. Brar et al. (2009) adopt a similar sampling methodology. Bartley and Boardman (1990) created this technique as a response to the "state-based" [6] sampling technique used in Palepu (1986) and other studies. They advise that samples with more realistic proportions of targets and non-targets would mitigate the model estimate biases present in previous studies. This is suggestive of the ineffective correction of biases, i.e. the application of conditional maximum likelihood estimators introduced by Palepu (1986).

3.2.3. ATP Performance in the Literature

All ATP studies have stated at least one of the following two measurable goals. The first one is the construction of a model capable to identify effectively and efficiently potential target firms. The second goal regards the formulation of profitable investment strategies, which would enable investors to cash in the stock run-up and premium paid to target shareholders.

Early studies have performed well in selecting actual targets, but the results are either inflated by methodological missteps or are counteracted by substantial misspecifications. For instance, studies before Palepu (1986) display very high forecasting performance, with ratios of both correctly predicted targets and non-targets ranging from 70% to 90% (see e.g. Stevens, 1973; Dietrich and Sorensen, 1984). These impressive results have been attributed to methodological improprieties, namely applying random estimators in non-random samples, conducting forecasting on samples unrepresentative to the general company population, and, finally, selecting arbitrary cut-off probabilities. After accounting for these misdeeds, Palepu identified correctly 80% of targets and 45% of non-targets. The model performed adequately in terms of Sensitivity, i.e. the percentage of actual

[6] State-based sample include the same number of firms of mutually exclusive groups. These groups are defined by a specific criterion, and, in ATP context, this criterion has been whether the firm was a target or a non-target (see e.g. Palepu, 1986).

targets identified correctly, but inadequately on Specificity, i.e. the percentage of actual non-targets identified correctly. This discrepancy rendered the model impractical, especially since the non-targets population is materially larger than the target population. The extensive number of non-targets in the predicted targets portfolio led to stock performance indistinguishable from the non-targets portfolio and, consequently, the sample population. The classification performance has been improving in studies published after the year 2000. Powell (2001, 2004) reports correct classification of targets and non-targets ranging from 75% to 84%. Similarly, Brar et al. (2009) predict correctly 72% of targets and non-targets.

The investment performance of predicted target portfolios has exhibited gradual improvement among studies. Palepu (1986) constructs investment strategies yielding returns similar to the aggregate manufacturing industry, attributing this result to the considerable volume of non-target firms in his "Predicted Targets Portfolio". Similarly, Powell (2004) displays insignificant returns, while he presents negative and significant returns in a previous study (Powell, 2001). Two recent studies have achieved positive returns after investing in Predicted Target Portfolios. First, Cremers et al. (2008) create portfolios based on the probability of acquisitions. Then, they buy the high probability portfolios and sell the low probability ones. The firms are then allocated into quartile and decile probability portfolios. The quartile and decile classifications of portfolios led to long-short performances of 11.77% and 21.67% respectively. These strategies have been based on in-sample portfolio structuring and were adjusted for Carhart's (1997) four factors. The second study illustrating positive results is conducted by Brar et al. (2009), who follow the same process of allocating firms into portfolios, though they do not allow for short-selling. They invest in the decile portfolio with the highest acquisition probability, assuming a holding period of 1 month. At the end of each period, the portfolio holdings are rebalanced into an equally weighted portfolio. The performance test is conducted on out-of-sample firms, and yields a market-adjusted annual return of 8.5%.

3.3. Data

I collect the sample of M&A deals from ThomsonOne Banker (SDC). I include deals with publicly listed targets in U.S. (Amex, NYSE and NASDAQ) for the period 1988 – 2012. The deals included are both completed and withdrawn, as I intend to identify companies deemed desirable by the market. Since both completed and withdrawn bids indicate the company's targetiveness, the inclusion of only completed deals would bias the model towards identifying deals with a higher probability of being consummated. On similar grounds, I include both friendly and hostile bids.

I apply additional criteria for the size, bidder ownership, and type of deals. The minimum value of the deals is $10 million and the ownership of targets by prospective acquirers is zero before the bid and above 50% afterwards. The ownership restrictions serves a double purpose. First, it is advisable to avoid cases where toeholds render the acquisition either expected or of immaterial importance to the acquirer. Second, the intention of the model is to also capture the factors actively guiding acquirer management to bid for the target. If the particular deal is not important for the acquirer, then the bid may be based on a different set or subset of criteria, confounding the inferences of the model. Regarding the various deal types, I exclude the following: repurchases, exchange offers, self-tenders, recapitalizations, spinoffs, and privatizations. The mechanics of the aforementioned deal types have been reported to be substantially different from regular M&As,[7] thus I exclude them on the grounds of sample purity. I also exclude financial and utility firms.[8] The target firms should also have available data on Compustat and CRSP.

After applying the above criteria, the deal sample consists of 1,243 deals, 682 completed and 561 withdrawn deals. These deals correspond to a total of 1,084 firms, where 1,060 firms received 1 bid, 81 firms received 2 and 7 firms received 3 bids throughout the whole period. All targets in the final deal sample have a maximum of one deal per calendar year. I also collect a control sample of non-target firms from COMPUSTAT and CRSP for the period 1988 – 2012. The included firms are publicly listed in U.S. (Amex, NYSE, and NASDAQ). In order to maintain the sample purity of the control group, the firms that do not fulfil the aforementioned criteria of deal size and acquirer ownership are not included as control firms. The number of firms and firm-year observations in the control sample are 5,404 and 59,197 respectively.

The targets of withdrawn deals are included as control firms in the regressions analysis for the years they are not targets. Specifically, I have included them as non-targets for every available firm-year observation they have not been targeted. As several firms are targeted more than once in the sample,

[7] See for example Vafeas (1997), Villalonga and McGahan (2005),
[8] The classification of industries follows the definitions on the website of Kenneth French. More information regarding the details of the classification is available at the website (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_49_ind_port.html).

excluding them after being targeted would bias the model against characteristics raising their targetiveness after the first acquisition. In the main analysis, a firm can be included in the model structuring sample as either a target or a non-target, not both. Thus, if the company has been targeted during the tested period, it will be automatically excluded from the corresponding period's non-target pool. Also, the firm is not included in the non-target pool if it has a pending bid during a particular year.

Annual figures on target and control samples are displayed in Table 3.1. The number and the aggregate value of deals follow the pattern of the 5th and 6th merger waves (see e.g. Alexandridis et al., 2012).

[Insert Table 3.1]

3.4. Methodology

3.4.1. Hypotheses

ATP literature has evolved since the early studies in the 1970s. New targetiveness factors and novel methodologies have been applied with varying success. However, the majority of these studies focus almost solely on firm-specific characteristics, which appear intuitive at first, since acquirer management is expected to select targets based on compatibility, resources, inefficiencies to be resolved etc. Nevertheless, M&As have been identified as events sensitive to the market environment, a notion strongly indicated in the Neoclassical theory (see e.g. Gort, 1969; Mitchell and Mulherin, 1996) and merger waves literature (see e.g. Harford, 1999, 2005; Rosen, 2006). ATP literature has mostly ignored a crucial factor of M&As, which is their connection to market conditions.

Few ATP studies have accommodated predictors regarding market-wide attributes. Specifically, industry disturbance (see e.g. Palepu, 1986), shareholder protection, market sentiment, and accounting standards (Brar et al., 2009) are the only hypotheses transcending unilateral focus on target attributes. There have been efforts to account for industry-specific distributional characteristics of predictors (see e.g. Barnes, 1990), but this only translates into a refined effect of firm-specific factors.

The current study includes industry-wide characteristics expected to either affect or be contemporaneously present during high aggregate M&A activity. The new hypotheses are based on a combination of gaps in the extant ATP literature and advancements in the general finance literature. For instance, the "Industry Disturbance Hypothesis" has stated that the probability of a firm being targeted increases with the appearance of shocks in the respective industry. So far, this hypothesis has been tested by a variable indicating whether there has been an acquisition in the industry during the year before the bid. This is a restricting approach on the effect of a market shock on merger activity (see e.g. Gort, 1969). Shocks to the market cause mergers to cluster into industry waves, which develop into market-wide waves under the presence of high capital availability (see e.g. Harford, 2005). These waves, industry- or market-wide, display momentously changing deal frequency throughout their duration. Since the number of firms being targeted increases by definition during periods of high merger activity, the momentous changes in activity could indicate changes in individual firm targetiveness.

The imbalance between target- and industry-specific characteristics has not been the only neglected dimension in ATP literature. Most studies have not considered the buy-side conditions leading to acquisitions. The firm-specific characteristics in the literature refer to target company attributes, assets, or processes that may be either desirable or worthy of improvement. The willingness or ability of promising acquirers to pursue M&As has not been taken into account, with the exception of Brar et al. (2009) who used market sentiment as a general proxy for investors' appetite for acquisitions. To

the best of my knowledge, there is no framework in ATP literature identifying the possibility of a company becoming targeted conditionally on the availability of acquirers. Since acquisitions need both sellers and buyers, it would be appropriate to consider the possibility of observing more acquisitions when there are enough prospective firms in the pools of both target and acquirer companies.

Acquirer availability and willingness may be related to a number of factors, such as the appropriateness of acquisitions as a growth option, the existing opportunities or resources, as well as CEO specific characteristics. A strand of M&A literature refers to CEO envy and its causal effect on merger waves. Goel and Thakor (2010) highlight that acquiring CEOs enjoy benefits (additional compensation, expanded area of influence etc.), which may instil envy to peer CEOs. Then, the latter CEOs' envy triggers the pursuit of similar benefits via conducting acquisitions. If this process results to a chain reaction of acquisitions, then, essentially, "contagious" CEO envy would be at least partially responsible for the ensuing merger waves. The aspect of envy could be found in target management as well, but the dummy variable used to test the "Industry Disturbance Hypothesis" should have partially captured the effect. CEO envy on the acquirer side has not been addressed in the ATP literature.

A second example of a buy-side predictor of acquisitions may be the availability of capital. The extant studies in ATP literature have focused on target firm liquidity. Low level of cash availability could be a warning for underinvestment issues and disruption of operations. While this issue could be mitigated by liquidity infusion by a cash-rich acquirer, ATP literature has not posed the question of whether there is enough liquidity available to prospective acquirers. Even in the cases where target firms are not cash-stripped, acquirers have to gather the necessary funds for the acquisition. If their access to any type of capital is restricted, fewer acquisitions should be observed, which in turn indicates lower relative targetiveness for targets. Thus, capital availability for acquirers may affect the probability of prospective targets receiving a bid.

Similar under-researched aspects of acquisitions are identified and deployed towards the formulation of testable hypotheses. The following sections provide the rationale and formulation of the new hypotheses.

3.4.1.1. Cash Reserves Hypothesis

According to the Free Cash Flow hypothesis suggested by Jensen (1986), managers may have the incentives to invest their company's free cash flow in value-destroying ventures in their pursuit for private benefits, such as restricting shareholder control, augmenting their incumbency in the firm, as well as increasing personal gain and area of influence. Capital liquidity is a prerequisite of the Free Cash Flow hypothesis, as CEOs cannot perform deals they cannot fund. The relationship between

capital availability and mergers has been established by Harford (2005). He acknowledged the cause of industry merger waves in industry-specific shocks (economic shifts, technological disruption, regulatory changes etc.), but he argued for high overall capital availability allowing for the clustering of industry waves into market-wide waves.

Anecdotal evidence is suggestive of measures that capture the aggregate market's liquidity. Several articles have focused on the excessive cash balances of large firms and the corresponding repercussions on future M&A activity. A relatively recent case has been Apple Inc., which held $137 billion in cash during 2013. Shareholder activists, with David Einhorn being the most vocal, prompted Apple Inc. to distribute the excessive cash to its shareholders in fear of unnecessary spending on value-destroying ventures (Bloomberg Businessweek, 2013).[9] Their fear was based on previous value-destroying deals and investments by other leading firms with sizeable cash reserves. For instance, in 2007 eBay had to impair more than 50% of the $2.6 billion spent on Skype in 2005 (The Wall Street Journal, 2007).[10] In this case, eBay's investment paid off in 2011, after selling Skype to Microsoft for $8.5 billion, though this was a wholly unexpected development. Microsoft itself has participated in all-cash acquisitions fuelled by overloaded cash balances. The acquisition of aQuantive, an Internet-advertising firm, for $6.2 billion in 2007 led to a complete write-down in 2012 (Bloomberg, 2012).[11]

Regardless of value-destroying deals, there has been extensive reference to general M&A activity initiated by cash-rich companies. Few examples are Pfizer's bid on AstraZeneca for $118 billion (Thomson Reuters, 2014)[12] and General Electric's bid on Alstrom's energy division for $17 billion (The Wall Street Journal, 2014).[13] Although the consideration was not only cash-based in the aforementioned deals, the bids were heavily supported by a cash component.

Irrespectively of the deals' wealth effect on shareholders, the anecdotal evidence offers important insights. The Press and investors consider excessive cash balances a potent indication of overflowing liquidity provoking the incumbent management to pursue acquisitions. Investors understand that excess cash can fuel acquiring activity; their fear of value-destroying acquisitions is rooted in the rich history of corporate misdeeds.

This effect of cash reserves on deal activity has drawn the attention of financial and consulting institutions as well. In 2006, Duke University's survey showed a record high in corporate cash balances, and PWC, one of the four prominent auditing firms in U.S., predicted increased merger activity in banking, technology, and oil & gas sectors due to the overloaded cash balances (CFO, 2006).[14] Deloitte, another major auditing firm, reported that 80% of corporate cash in UK is held by

[9] "Too much cash isn't good for Apple", Bloomberg Businessweek, 26 February 2013
[10] "'Sorry, Wrong Number,' eBay Says on Skype", The Wall Street Journal, 2 October 2007
[11] "Microsoft Writing Down $6.2 Billion Over AQuantive Deal", Bloomberg, 3 July 2012
[12] "Pfizer walks away from $118 billion AstraZeneca takeover fight", Thomson Reuters, 27 May 2014
[13] "GE's Alstom Deal Shattered France's Dream", The Wall Street Journal, 25 June 2014
[14] "Cash Stockpiles Will Fuel Mergers: PwC", CFO, 10 March 2006

25% of firms in FTSE 100, excluding financial firms (Deloitte, 2014). However, they noted that cash-rich firms seem more conservative with their spending, as companies with less cash are spending relatively more on CAPEX and M&As. Ernst & Young, a leading tax advisory firm, attributes the forthcoming deals in the technology sector to the exuberant cash piles on big tech firms' balance sheets (EY, 2014).[15] Consulting and auditing firms consistently indicate inoperative cash piles as preludes to acquisitions. This reflects the market's perception of the relationship between cash availability and merger activity.

I follow the academic literature and the anecdotal evidence in forming a hypothesis regarding the effect of overall industry cash availability on firm targetiveness. It is important to note that the standard level of cash at hand may vary among industries. For instance, sectors with high growth potential, such as technology and healthcare, would be expected to hold more cash in order to capitalize on investment opportunities (see e.g. U.S. News, 2010).[16] In contrast, value industries, such as consumer staples and utilities display less growth opportunities, hence acquisitions could be triggered with relatively shorter spikes in capital liquidity.

In addition, the level of cash may offer less information compared to incremental changes in the level of industry-wide liquidity. The aforementioned anecdotal evidence emphasizes on the deviation between recent and historical cash levels. The comparison between present and past level of resources is necessary in order to identify excessive cash availability. Thus, high level of cash reserves per se may not instigate acquisitions, while ample increases in cash balances could indicate the advent of deals. The "Cash Reserves Hypothesis" takes all the aforementioned into account and states the following:

Hypothesis 1: Firm targetiveness will increase along with increases in industry-wide level of cash balances.

3.4.1.2. Market Activity Hypothesis

There are studies connecting corporate decisions made by top management and activity in the market for assets. Shleifer and Vishny (1992) display the negative relationship between asset market liquidity and asset sales discounts. In detail, high volume in the market for assets allows managers to sell assets without suffering price discounts. Similarly, the same study argues for a strong association between asset market liquidity and the optimal debt level in the capital structure of a firm, i.e. the higher the liquidity in the market, the higher the debt levels on a firm's balance sheet, since assets will be able to act as collateral for debt without assuming value discounts.[17]

[15] "Technology M&A soars by 57% in Q2; dealmaking on course for 'blockbuster' 2014", EY, 21 August 2014
[16] "Value and Growth: Why Investors Need Both", U.S. News, 11 June 2010
[17] This theory is indirectly related to Ambrose and Megginson's (1992) "Real Property Hypothesis", suggesting that firms with more fixed assets have higher targetiveness.

It would be enlightening to elaborate further on the arguments of Shleifer and Vishny (1992). Assets with a narrow range of alternative uses, such as steel plants, are expected to have less liquidity in the market compared to assets with capabilities for multiple alternative uses, such as commercial land. The narrow range of alternative uses results into a more restricted pool of potential buyers. Scarcity of buyers suggests future sellers may not be able to liquidate their asset immediately without assuming discounts, i.e. they would have to sell below the asset's fair value in order to lure buyers. In the case of a steel plant, the range of potential buyers is restricted to specialized manufacturers, while commercial land could be utilized by a wider range of firms. Thus, the inferior market liquidity and the associated discounts are incorporated in the value of the asset. This affects the capacity of the asset as debt collateral. Between two assets with the same face value, the one with less market liquidity, and hence higher probability to sell at a discount, will correspond to lower debt-raising capacity. In the case of bankruptcy, the asset would be liquidated in order to cover for the capital provided, and most probably, the seller would have to accept the appropriate discount in order to liquidate it promptly. Consequently, the liquidity status of a company's assets in the market implies a dynamically changing optimal capital structure. An additional conclusion of Shleifer and Vishny (1992) is that management teams are more likely to sell company assets during high asset market liquidity periods, when the probability and magnitude of discounts are relatively low.

In the same direction, Schlingemann et al. (2002) connect liquidity in the market for assets with the corporate decision of divesting assets. In accordance with Shleifer and Vishny (1992), they find that firms decide to divest the most liquid assets in the market. The reasons for divesting assets originate in the inefficient diversification process and the ineffective strategic planning of parent-firms, though the selection of the specific assets to divest and the timing of the sale are based on the discounts the divesting firm would have to accept. If the respective asset's liquidity is low in the market, then the firm may have to accept high discounts and, therefore, incur a loss on sale. In a similar context, Gavazza (2011) argues that low thickness in the market for assets prompts firms to hold assets even when they are not adequately profitable. Assets corresponding to thin markets, i.e. a low number of buyers and sellers, are more likely to be withheld even when their profitability drops. Both aforementioned studies indicate the willingness of management to sell parts of their business when the probability of selling assets at discount is lower.

The effect of asset-market characteristics on significant corporate decisions has been established in the literature. Capital structure, divestitures, and asset liquidation decisions could be accelerated or postponed depending on the asset market status. In the same fashion, the market for corporate control may affect the targetiveness of individual firms. For instance, Rosen (2006) finds a connection between positive market reactions to merger announcements and the surge in frequency of deals in the near future. This relationship is attributed to momentum in the market for corporate control. CEOs observe positive announcement returns in other firms' acquisitions and engage in acquisitions as well,

wagering they will reap similar market reactions. Complementary, CEOs have been accused of pursuing acquisitions out of envy for the benefits enjoyed by peer CEOs (Goel and Thakor, 2010). Both studies promote the idea that CEOs find motivation to perform acquisitions in the activity of the market for corporate control.

As mentioned in the "Cash Reserves Hypothesis", high capital liquidity could increase overall merger activity (Harford, 2005). The expectation of increasing merger activity due to the availability of capital could increase individual firm targetiveness. Specifically, optimism could increase liquidity with a feedback mechanism. For instance, if liquidity allows for the consummation of acquisitions, investors may expect more acquisitions in the future. At that point, the expectation of firms being potential targets could raise their valuation in order to account for the expected premia to be received. These firms could use their recently rising stock price in order to perform acquisitions, as equity capital has become relatively "cheaper" than cash or debt. In this scenario, a small number of acquisitions would trigger a partial rise in overall liquidity and, therefore, more acquisitions in the future. The aforementioned theory serves only as a thought experiment of alternative drivers of M&A activity.

It is apparent that more than one theory can provide a legible explanation of the relationship between past merger activity and firm targetiveness. Capital liquidity, CEO envy, economic shocks, valuation discrepancies etc. are not necessarily mutually exclusive or collectively exhaustive theories. Multiple market forces could be stimulating firm-specific targetiveness. Additional insight is gained after inspecting activity statistics on merger waves. For instance, merger activity over several years (see e.g. Harford, 2005) exhibits year-on-year increases in the number of deals for most years. Furthermore, the probability of a firm being targeted increases during upturns in the aggregate merger activity. Hence, merger activity increments could be included in an ATP model as a predictor of firm targetiveness.

Suggestions by literature and simple inspection of merger activity through time advocate the assumption that heightened activity in the past may result in even higher activity in the future. For instance, inspection of the deal activity year-on-year as presented in Harford's (2005) study, shows the majority of increases in activity being followed by additional increases. Although this claim seems arbitrary, the momentous nature of M&A activity and management's behaviour have already been documented (see e.g. Rosen, 2006). Thus, the expectation is that higher industry-wide merger activity in the past will lead to higher merger activity in the future, resulting in higher individual targetiveness. The heightened activity could be the manifestation of CEO envy, surge in asset market liquidity, or any force capable to yield a year-on-year increase in the aggregate merger activity. The identification of all the unique factors boosting aggregate merger activity is outside the scope of this study, but the incorporation of their collective outcome on firm-specific targetiveness is a novel aspect in ATP literature. Considering all the above, the "Market Activity Hypothesis" states:

Hypothesis 2: Increases in industry-specific acquisition activity in the past will increase individual firm targetiveness in the present.

3.4.1.3. Withdrawn Deals Hypotheses

Corporate events and announcements are rich sources of information. For instance, dividend announcements have been shown to reveal top management's expectations on future performance. Grullon et al. (2002) suggest a permanent increase in the quarterly dividend is an indication of upcoming decreases in systematic risk and growth opportunities, signalling the firm's advancement to maturity stage in the company life cycle. As growth opportunities decline, the needs for liquidity and investment funds decrease and sales growth will settle to relatively lower levels. In Grullon et al.'s study, dividend reductions were followed by profitability declines but higher than average stock-price increases. In general, literature is fairly populated on the informational content of dividend announcements (see e.g. Pettit, 1972; Laub, 1976; Aharony and Swary, 1980).

Finance literature has traced informational components in other corporate announcements as well. An argument on the informational content of M&As is offered by Moeller et al. (2005). In their study, few large acquisitions with significantly negative announcement returns are found responsible for the average acquirer losses documented in the literature. The study demonstrates positive aggregate wealth effects for the new entities after excluding acquisitions with losses above $1 billion. The "large loss" firms have been enjoying value-increasing announcements for acquisitions during the two years before the fateful deal. The authors interpret the market reaction as a response to revelations on the firm's strategy. Specifically, the "large loss" acquisitions allow investors to evaluate the firm's prospects under the current strategic path. In hindsight, investor consensus on large-loss deals assumes improbable sustainability in the firm's growth and general performance, unless the management decides a meaningful strategic shift. This results in the sale of the stock until it reaches a price reflecting the company's fair value under the status quo.

Withdrawn acquisitions have been proven to provide information as well. Savor and Lu (2009) contrast the long-run stock performance of acquirers of withdrawn and completed acquisitions. They show that value-destroying stock acquisitions are a better alternative to no acquisition at all, as matching acquirers with withdrawn bids have inferior long-run performance. Withdrawn deals also offer implicit indication of the acquiring CEO's quality (Jacobsen, 2014). Acquiring CEOs who withdraw bids as pre-emptive protection against overpayment are considered less hubristic (see also Roll, 1986), less inclined to pursue acquisition benefits, and more skilful in evaluating investing opportunities. The bid withdrawal serves as a signal of high CEO quality and it affects market reactions profoundly in subsequent corporate events. Not surprisingly, this information has also been connected to CEO retention, as well as the executive's successful career path in the cases of turnover.

CEO quality has also been measured with respect to their response to market reaction on corporate announcements. Kau et al. (2008) find that good managers tend to withdraw acquisition bids when the market responds unfavourably. Thus, the managerial decision to withdraw or see a bid through after an adverse market reaction is indicative of whether the CEO "listens to the market". In case the manager does not comply with the market's view, her insistence might be attributed to overconfidence or hubris (see e.g. Roll, 1986).

Withdrawal of bids could be informative regarding the target firm as well. A firm should attract a bid due to desirable attributes, such as performance and profitability, access to unique resources, managerial talent, or knowhow. Jacobsen (2014) reports the percentage of withdrawn deals related to the revelation of negative information for the target to be around 6%. In the rest of the withdrawal cases, the deal cancellation is unrelated to the target's prospects. Thus, the withdrawal should not affect the desirability of the target per se. The expectation should be to observe acquisition attempts on the target in the future, as the firm's persisting targetiveness should attract bids in the future.

Recent anecdotal evidence supports this notion. Objections from regulators forced Sprint to cancel its bid for T-Mobile, a deal between two major telecommunications carriers in the U.S. (Thomson Reuters, 2014).[18] The two firms have been expected to reattempt consolidation in the future, while an upcoming cross-border bid from a French company, Iliad, has been insinuated. This is an indication of T-Mobile's desirability lasting even after a bid cancellation.

Firm targetiveness may persist for more than a couple of months after the withdrawal. For instance, Yahoo! received an unsolicited offer from Microsoft in 2008, shortly after the latter has made its entrance to the search-engine and online advertising business (The New York Times, 2008).[19] The bid was cancelled and several years later, activist investor firm Starboard was aggressively promoting the merger between Yahoo! and AOL in an attempt to reap cost and revenue synergies (Wall Street Journal, 2014).[20] The second bid six years after a failed attempt may render Yahoo! a "serial target", whose targetiveness seems to endure through time. Therefore, academic and anecdotal evidence inspires the "Withdrawn Deals Hypothesis", which states the following:

Hypothesis 3: The firm's current targetiveness should be higher if it has received failed bids in the past.

3.4.1.4. Hot Market Hypothesis

Market activity has been reported having a feedback effect on corporate decisions. For instance, CEOs have been accused of pursuing acquisitions out of envy for the pecuniary and other benefits

[18] "Sprint drops bid to buy T-Mobile, changes CEO", Thomson Reuters, 6 August 2014.
[19] "Microsoft Bids $44.6 Billion for Yahoo", The New York Times, 1 February 2008.
[20] "Starboard Pushes for Potential Yahoo-AOL Tie-Up", Wall Street Journal, 26 September 2014.

enjoyed by their peer CEOs (see e.g. Goel and Thakor, 2010). These reactive acquisitions are not expected to be value enhancing, as the managerial incentive behind them is most probably based on collecting private benefits and not in maximising shareholder value. Simultaneously, envious CEOs are expected to raise the number of deals in the following period.

In general, managerial motives for personal gain could trigger a series of acquisitions, potentially resulting in merger waves. For instance, acquirers willing to maintain their status are likely to perform defensive acquisitions, even if they destroy shareholders value in the process (Gorton et al., 2005). The aim of defensive acquisitions is to inflate the size and complexity of the firm, discouraging prospective acquirers. The CEOs' fear of unsolicited bids regards losing status and power. The unwelcome buyer is unlikely to promote the target's previously top executive to the combined firm's CEO, so even if the current target CEO is allowed to keep her position, she will not be the top manager of the entity any more. This fear is amplified for CEOs who have not performed defensive acquisitions, as their firm becomes relatively smaller to the defensive acquirer and, thus, could be considered an easier target. In order to protect themselves against this imposed relative disadvantage, these firms resort to defensive acquisition themselves. Hence, when the market is "hot" with envy-driven or defensive acquisitions, the number of future industry deals is expected to rise.

Managerial incentives for acquisitions are not restricted to private benefits. Several studies exhibit prevalent CEO optimism during heightened market activity in security offerings (see e.g. Loughran and Ritter, 1995; Ljungqvist and Wilhelm, 2002; Helwege and Liang, 1996). A source of optimism could be identified in the lucrative past performance of corporate events in the same industry. Rosen (2006) highlights positive acquirer announcement returns as factors of the industry-wide merger activity.[21] If the market acknowledges synergistic gains in acquisitions through high announcement returns for the involved entities, CEOs of other firms are expected to take advantage of market optimism by engaging in acquisitions. In consequence, industries with high combined wealth effects on deal announcements are expected to exhibit more acquisitions in the near future. Since there will be more acquisitions, more firms in these industries are expected to receive bids. Thus, the "Hot Market Hypothesis" states the following:

Hypothesis 4: Firm targetiveness increases with the industry-wide synergistic gains of past acquisitions.

3.4.1.5. Industry Concentration Hypothesis

Regulatory bodies overseeing antitrust and competition allegations pose an influential stakeholder group with significant power over deal consummation. The institutions in U.S. responsible for

[21] For additional information on the effect of "hot markets" on acquisition activity see also Petmezas (2009), Antoniou et al. (2008), Croci et al. (2010).

investigating pending deals include the U.S. Department of Justice (DoJ), the Federal Trade Commission (FTC) and other private and public entities. Their official main concern regarding consolidation is consumer protection against collusion, monopolistic behaviour, and any kind of action that would hinder free competition among firms.

The concentration of excessive market power effectively under one firm has been the most highlighted concern of regulators. If they believe market share consolidation could generate monopolistic behaviour and unfair pricing, they reserve the right to block any deal. In this case, firms participating in the blocked deal could resort to litigation against the antitrust ruling. A recent example of regulatory interference regards the bid by Louisiana-Pacific Corp. to Ainsworth Lumber Co (McCarthy, 2014).[22] Both firms produced "oriented standard board" (OSB), a component used in construction and remodelling of buildings. A merger would result in an entity holding over 50% of the market in the U.S. Pacific Northwest and upper Midwest, a market share precarious to fair competition in the region. Both firms initially proclaimed a litigation battle against the ruling, though they did not follow through their intention due to monetary and time constraints.

In the cases of globally operating firms, regulatory consent may involve multiple regional authorities. The recent acquisition of WhatsApp by Facebook, two prominent texting and social network companies, has been a model example. Facebook announced the acquisition of WhatsApp on February 19, 2014 for approximately $19 billion (Thomson Reuters, 2014).[23] The approval from FTC was issued on April 8, 2014 (New York Post, 2014).[24] While both acquirer and target had their headquarters in U.S., they had been waiting for the regulatory approval of E.U. until October 6, 2014, (Financial Times, 2014)[25]. If the deal had not been approved by E.U. but was still consummated, there would have been repercussions on both companies' operations in E.U. countries.

The level of market share concentration has been measured by the Herfindahl-Hirschman Index (HHI) by ATP and general finance literature (see e.g. Brar et al., 2009; Hoberg and Phillips, 2010). The measure utilizes the sum of squared individual-company market shares of sales, having only positive values, a ceiling of 1 for fully concentrated markets and a theoretical value approaching 0 for almost perfectly fragmented industries. The index has also been used by regulatory authorities, such as the Federal Trade Commission, to define the level of market share concentration.[26] In the case of FTC, the concentration of market power has been classified uniformly for all industries under the three categories of "Unconcentrated", "Moderately Concentrated", and "Highly Concentrated". FTC investigates the changes in market share concentration, and "Highly Concentrated" industries are more likely to experience regulatory intervention. Thus, fewer acquisition bids would be expected to

[22] "Louisiana-Pacific Corporation and Ainsworth Lumber Co. Ltd. Terminate USD$1.1B Deal Due to Regulatory Hurdles", McCarthy, 2 June 2014.
[23] "Facebook to buy WhatsApp for $19 billion in deal shocker", Thomson Reuters, 20 Feb 2014.
[24] "FTC gives Facebook go-ahead on WhatsApp deal", New York Post, 8 April 2014.
[25] "Facebook's bill for WhatsApp climbs to $21.8bn", Financial Times, 6 October 2014.
[26] See e.g. U.S. Department of Justice and Federal Trade Commission (2010).

occur in highly concentrated industries, since, ceteris paribus, firms would be more reluctant to undertake the initial costs of a bid, only to be obstructed by regulatory bodies.

The level of HHI is deemed less informative than the year-on-year change of the index. Some industries, such as military equipment manufacturers, tend to have fewer listed firms than industries with fewer entry barriers, such as telecommunication equipment manufacturers. The HHI level for the highly concentrated industries would still be high even if it drops slightly, while even minor decreases in concentration could be enough to indicate room for further consolidation. Hence, the Industry concentration hypothesis states the following:

Hypothesis 5: Industries with recent decreases in market-power concentration will exhibit more acquisitions and, therefore, individual firm targetiveness will increase.

3.4.2. Variable Construction

In this section, we analyse the construction of the new and control variables in the current study. The year of observation is year "t", i.e. when a particular firm is registered as a target or non-target. The dependent variable in the context of the ATP study is a dummy variable expressing the latter status; the dependent variable takes the value of 1 if the company has received a bid in year t and the value of 0 otherwise. Regarding the targetiveness factors, the novel variables use information of up to two years before year t, while control variables draw data from year t-1. The first subsection regards the variables on testing the new hypotheses and the second one illustrates the construction of the remaining control variables.

3.4.2.1. Proxies for New Hypotheses' Testing

In order to account for the "Cash Reserves Hypothesis", I divide the sum of all cash balances over the sum of all assets in an industry in a specific year. I name this as "Capital Liquidity" ratio. Higher ratios indicate higher level of cash per unit of assets in the overall industry. I also account for incremental changes in Cash Liquidity ratio, as positive year-on-year changes may foreshadow higher deal activity, therefore increasing individual firm targetiveness. This variable is labelled "Capital Liquidity Change" and it regards the change of "Capital Liquidity" between years t-2 and t-1.

Regarding "Market Activity Hypothesis", I construct 3 testing variables. First, I consider the study of Schlingemann et al. (2002), who determined market activity by estimating the ratio of total M&A consideration over the sum of assets in an industry. The proxy stood for the liquidity in the market for corporate control and it was deployed in the estimation of divestiture discounts. Their measure has been amended for the current study. I divide the total value of all U.S public-target M&A transactions in a specific industry, as reported on ThomsonOne Banker, over the same industry's total market

capitalization, taken by CRSP. I label this variable "Activity Value" index. The deals included refer to year t-1 and the market capitalization is estimated at the end of t-1. Then, I estimate the incremental change of the ratio between years t-2 and t-1, naming the variable "Activity Value Change". The prediction suggests a positive relationship between year-on-year increases in the Activity Value index and individual firm targetiveness.

The Press does not focus only on aggregate deal value, but also on the number of deals. For instance, Forbes uses both deal value and frequency to comment on the "hot M&A market" on a global scale (Forbes, 2014).[27] I consider deal frequency in the same fashion with the Activity Value index. The "Activity Concentration" index is the number of U.S. public M&A deals over the number of firms in the industry, which is then used to estimate the year-on-year change of the index between years t-2 and t-1, which is named "Activity Concentration Change". The expectation for the latter is consistent with Activity Value Change, i.e. higher increases in the concentration of deals in the past should lead in greater activity in the future and, consequently, increase firm targetiveness.

The aforementioned indices account for direct measures of the aggregate activity in the industry. The nominator of both measures regards the sell-side of a deal, while a measure regarding the presence of acquirers could contribute to the understanding of the dynamics in the market for corporate control. A notable example is the group of highly active acquirers. Serial acquirers, i.e. firms who perform several deals within a short period of time, are responsible for almost 25% of the global M&A activity (Boston Consulting Group, 2011). These acquirers are usually large firms with enough liquidity to perform multiple acquisitions even within the same year. Popular serial acquirers are IBM, Walt Disney, Foxconn Electronics, Caterpillar etc. (McKinsey, 2012). Another example is Google, which performed 19 acquisitions in the first half of 2014, spending over $5.5 billion mostly on purchasing knowhow on "smart houses", i.e. dwellings that have most functions operated remotely or automatically via technology (The Guardian, 2014).[28] In addition, Google announced in May 2014 an international acquisition spree funded by inflows of foreign operations (MarketWatch, 2014).[29] The expectation of acquisitions in the technology sector should be higher after the announcement and, generally, when there is a proven serial acquirer present in the industry.

Accordingly, merger activity is also accounted for by a dummy variable which takes the value of 1 if there is a serial acquirer that has previously targeted a specific industry in t-1 and 0 otherwise. The variable construction is based on one of the serial acquirer definitions of Humphery-Jenner and Powell (2011),[30] identifying serial acquirers as companies who have performed at least 2 acquisitions within the last 3 years. Specifically, I classify a firm as a serial acquirer in t-1, if it had performed 2 or more acquisitions during the years t-3 to t-1. Firm targetiveness is expected to increase with the

[27] "No Slowdown In Sight For 2014's M&A Frenzy", Forbes, 24 June 2014.
[28] "Google acquisition spree takes in Dropcam and Alpental", The Guardian, 24 June 2014.
[29] "Google eyes $30 billion overseas buying spree", MarketWatch, 21 May 2014.
[30] Alternative specification of Serial Acquirers offered qualitatively similar results.

presence of a serial acquirer. The respective dummy variable is named "Serial Acquirer", which takes the value of 1 if there is a serial acquirer that has acquired in the respective target's industry within the previous 3 years and 0 otherwise.

As mentioned in a previous section, past withdrawn bids are expected to raise firm targetiveness in the near future. Despite the arguments of persistence in target attractiveness, it is not recommended to consider withdrawn bids too far in the past, as firms may change enough through time to be deemed new entities. I consider whether a firm has received a failed bid within the last 3 years prior to the observation, i.e. I set the value of the "Past Withdrawn Bid" dummy variable to 1 if there has been a withdrawn deal within years t-3 to t-1 and 0 otherwise. The reason of withdrawal is not examined due to the rarity of withdrawals pertaining to deteriorating target firm attractiveness (see e.g. Jacobsen, 2013). Firm targetiveness is expected to increase with the presence of withdrawn bids in the recent past.

The intention behind the "Hot Market Hypothesis" is to test whether momentum of optimism in the market stimulates aggregate merger activity and, consequently, firm targetiveness. I account for optimism in the market for corporate control with the combined wealth effect of acquisitions around the date of announcement. In detail, I accumulate the market adjusted returns for the window (-1, +1) for both acquirer (ACAR) and target (TCAR). Then, I use the market value of targets and acquirers at the end of the month before the bid as weights for the wealth effect. The expected deal synergies are depicted in the weighted average of ACAR and TCAR. This method of valuing synergies of acquisitions is in accordance with the literature (see e.g. Moeller et al., 2004). In order to measure aggregate optimism, I estimate the average of all deal synergies in the same industry for one year. The interpretation of the "Industry Synergy" index suggests that the optimism in the market for corporate control should be higher as aggregate synergistic gains increase. I also include the incremental change of the index between years t-2 and t-1. The expectation is that higher values of "Industry Synergy Change" in t-1 will lead to more deals in year t and, hence, individual firm targetiveness will increase.

The regulatory institutions have drawn public's attention on cases where market share concentration harms the consumer. An appropriate testing instrument for the "Industry Consolidation Hypothesis" is the Herfindahl-Hirschman Index (HHI) (see e.g. Giroud and Mueller, 2011). I account for the different changes of concentration observed per industry by considering the incremental change in the respective HHI for years t-2 to t-1. The probability of a firm being targeted is expected to increase when the industry consolidation has receded in the recent past.

3.4.2.2. Control Variables

Control variables in this study are based on hypotheses tested in ATP literature. Specifically, I include variables pertaining to Inefficient Management, Leverage, Liquidity, Market-to-Book, and Price-to-

Earnings hypotheses as they have been stated in Palepu (1986). I introduce alternative measures based on the expectations and outcomes of previous studies. The process of the variable construction is explained below and the summarised information on control variables is displayed in Table 3.2.

[Insert Table 3.2]

For each hypothesis, I separate companies per industry and sort them according to the designated continuous variable that has been used as a test proxy in the literature. According to each hypothesis, high or low values of the corresponding variable should indicate higher firm targetiveness. In other words, I consider the direction indicated by the hypothesis and assign the value of 1 if the firm lies in the respective top or bottom 25% of the industry. For instance, the "Inefficient Management Hypothesis" suggests higher targetiveness for firms performing poorly on ROA. Thus, the corresponding dummy variable will assume the value of 1 if the firm exhibits ROA lower than the bottom 25% of its industry and 0 otherwise. A different example is the control variable regarding the "Leverage hypothesis". In this case, the value of 1 is assigned to a firm if its leverage is in the top 25% of its industry.[31] Company past performance is also measured by the annual buy-and-hold abnormal returns on the full calendar year t-1. The adjustment is based on the equally-weighted CRSP index. The calculation follows monthly compounding of the monthly returns for both the security and the benchmark, and the subtraction of the two as can be seen in formula (1).

$$BHAR_i(t,T) = \prod_{t=1}^{T}\left(1 + R_{i,t}\right) - \prod_{t=1}^{T}\left(1 + R_{B,t}\right), \qquad (1)$$

Where $R_{i,t}$ is the return of the month for security i in month t, and $R_{B,t}$ is the return of the equally-weighted CRSP index in month t (see e.g. Brar et al., 2009).

3.4.2.3. Variables and Sample Statistics

The preliminary analysis focuses on testing the targetiveness factors for statistical differences between targets and non-targets. Following the literature standard, I present the variables that will take part in the analysis. The mean and median values are reported in Table 3.3, along with the p-values of the respective T-tests and Wilcoxon tests for the mean and median difference, respectively. The analysis has been performed on all firm-year observations available after accounting for data availability.

Inspection of the mean statistics display an only occasionally surprising picture. Targets in the sample have significantly higher market capitalisation compared to non-targets, although the sample size differences may be responsible for the discrepancy. Both subsamples have similar Market-to-Book and Price-to-Earnings ratios, with targets having slightly lower median ratios, indicating that target firms may indeed be undervalued or mismanaged. The accounting ratios show differences in

[31] The new construction holds superior explanatory power versus the variables' continuous form. The statistical difference is exhibited in Table 3.4.

agreement with the theoretical expectations of previous studies, as performance indicators and liquidity are significantly lower for targets, while leverage is significantly higher. Targets display lower performance for the BHAR measure. It is also impressive that for the most firm-year observations, almost 90% of firms have at least one serial acquirer present in their industry. This suggests that the presence of a proven acquirer in the industry may not foreshadow an increase in deal activity. The industry synergies are higher for the industries of targets, though the statistical significance is not accompanied by an impressively high magnitude. The variables Activity Concentration and Activity Value are both higher for the target subsample. The collective inference from the variables on market activity show some support towards the argument that firms are targeted when there is heat in the market. The HHI variable shows similar means for both groups, while the median variable is slightly higher for the non-target group. This is an indication in favour of an earlier argument predicting lower deal activity in highly concentrated industries, presumably due to higher probability of regulatory intervention. The final variable, Capital Liquidity, offers surprising results. It indicates that targets are in industries with lower levels of average cash over assets ratios. This is contrary to the stated expectation that targeted firms should be concentrated more in industries with higher levels of cash. Overall, the preliminary analysis suggests that the sample does not display significant differences with previous ATP studies (see e.g. Palepu, 1986; Powell, 1997, 2001; Cremers et al., 2008).

[Insert Table 3.3]

3.4.3. Methodological Techniques

The current study is based on the methodological techniques established by the ATP literature. The general process of acquisition prediction in this study is described below, and more details are provided in the subsequent sections.

I create a 5-year sample of targets and non-targets in order to estimate the model parametres. Companies are registered as targets or non-targets according to their status in the year of observation, i.e. year "t". The logit model identifies relationships between variable values in the year t-1 and target status in year t. The model's outcome is the probability of each firm becoming a target in year t. I use these in-sample probabilities in order to decide the cut-off probability to be used in the out-of-sample forecasting, which is performed on the year following the 5-year sample. The cut-off probability obtained from model estimation is used to classify firms in the forecasting year as potential targets or non-targets.

A unique component in this study is the conduct of model structuring and testing for successive periods. I construct 18 partially overlapping samples in order to estimate the model for 5-year subsamples and perform forecasting on the year after. For instance, the chronologically first iteration

has an estimation sample based on 1990-1994 period and a forecasting sample on year 1995. The next period has an estimation sample from years 1991-1995 and a forecasting sample on 1996, and so on. The first iteration to present in the analysis is based on the estimation period 2007-2011 and the forecasting year of 2012 in order to show results on the most recent period in the sample.

The rolling estimation is necessary for the examination of model intertemporality. It is possible that some factors display time-varying levels of significance in the decision-making process of acquirers. Strong indications could be identified in the nature of the U.S. merger waves. The Third U.S. merger wave in 1960's was characterized as the conglomeration wave, as acquirers sought diversification by acquiring firms outside their main area of operations (see e.g. Mead, 1969). The Fourth U.S. merger wave yielded the opposite effect on firms, as acquirers purchased conglomerates and divested the secondary business segments (see e.g. Martynova and Renneboog, 2008). Therefore, while acquirers in the third wave aimed at increasing hedging against industry-specific risk, acquirers during the fourth wave acted in order to correct the inefficiencies created during the previous wave. This timeline of alternate acquirer intentions is indicative of the evolving motives fuelling acquisitions. The rolling model estimation in this study provides information on potential shifts in acquiring criteria. The basic methodological components are analysed in detail in the following sections.

3.4.3.1. Model

Previous studies have deployed two main models for acquisition prediction: logit and multiple discriminant analysis (MDA) models. Espahbodi and Espahbodi (2003) show immaterial differences in the performance of the two models, therefore the well-established logit model is employed. Furthermore, this more choice is in accordance with Palepu's (1986) seminal study, as well as the studies inspiring the sampling technique (Brar et al., 2009) and the cut-off probability criterion (Powell, 2004; Brar et al., 2009). The different forms of the logit model can be seen below. Formula (2) shows the generic form and formula (3) shows the transformation of the model into the linear form. *Target* is the categorical variable taking the value of 1 if the company is a target and 0 otherwise, ***X*** is the vector of all predictors applied in the model, and ε is the error term.

$$\text{Target} = \frac{1}{(1+e^{-(a+\mathbf{b}*\mathbf{X}+\varepsilon)})} \quad (2)$$

$$\text{Logit}(\text{Target} \mid \mathbf{X}) = a + \mathbf{b} * \mathbf{X} + \varepsilon \quad (3)$$

The domain of outcomes in the standard logit model contains two mutually exclusive and collectively exhaustive outcomes. Typically, one outcome is labelled as the "event" and the other one as the "non-event". In the context of ATP studies, a firm receiving a bid within a specific year is considered the "event" and the firm remaining a non-target is the "non-event". These two outcomes are mutually

exclusive, as a firm cannot be considered both a target and a non-target in the same year or the same period.

3.4.3.2. Sample

Several studies construct "state-based" samples of targets and non-targets (see e.g. Stevens, 1973; Palepu, 1986; Barnes, 1999; Powell, 2001) and the main argument for their use regards the decrease in sample size needs, especially for non-target firms. At the time of earlier studies, gathering data may have posed an important hurdle to researchers in terms of both availability and manual-collection time. Advancements in technology and commercial databases such as COMPUSTAT, DataStream, CRSP, and ThomsonOne have led to facilitation of data access, along with the corresponding increases in sample sizes and steep decreases in computation time. A comparison between sample sizes of early and recent studies illustrates the progress in ATP sample sizes. Simkowitz and Monroe (1971) included 23 targets and 25 non-targets while Powell (2004) increased the sample to 471 targets and 9,420 non-targets.

State-based samples allow for a non-random selection of targets and non-targets, as the sample concentration of either type of firms does not approximate the population of companies (see e.g. Powell, 2004). Palepu (1986) recommends adjustments to the maximum likelihood estimators in order to account for the non-random sampling, insisting on the use of state-based samples. Nevertheless, more recent studies include samples with numbers of targets and non-targets closer to the population distribution (see e.g. Powell, 2004; Cremers et al., 2008). The reason for this transition is attributed to the biases afflicted on the coefficient estimates and classification accuracy, rendering the model estimators biased despite the adjustments of the likelihood estimators (see e.g. Bartley and Boardman, 1990).

This study follows the example of sampling in the more recent studies in order to avoid biases in the model estimates from state-based sampling. In particular, I base the sampling technique on Brar et al. (2009) in selecting a number of control firms per year proportional to the percentage of acquisition activity pertaining to that year. I use 5-year samples in order to estimate the model and 1-year of data for out-of-sample forecasting. The choice of a 5-year span for the estimation sample is based on the appropriateness of sample size for this study. The literature exhibits periods of varying sizes, ranging from 2 years (see e.g. Barnes, 1999) to 11 years (Brar et al, 2009). The results have been consistently modest regardless of the sample's time span.[32]

Each firm is represented only once in the estimation sample. Firms targeted during the 5-year period are included as targets, and they are excluded from the pool of non-targets for the same period. The

[32] In untabulated analysis, I use alternative time spans for the estimation samples (2 years up to 10 years) and the results remain qualitatively the same.

forecasting sample consists of all the target and non-target firms with available data in the year subsequent to the estimation period. Firms which have been targeted in the estimation sample are also included in the forecasting sample, as every firm is a potential target in practise, even just 1 year after receiving a failed bid.

In the main analysis, the estimation sample retrieves data from the period 2007-2011. The total number of deals in the period is 199. In year 2007, the market activity amounts to 48 deals or approx. 24.12% of the 199 deals in the 5-year period. The available non-target firms are 2,004 for the same year. The number of non-target firms selected for that particular year will be 483 or 24.12% of 2,004 firms. These 483 firms are excluded from the pool of non-targets for the rest of the 5-year period, and companies are randomly allocated into the sample for the rest of the period in the same way.[33]

After the model has been estimated and the cut-off probability has been set, I perform forecasting on the 1 year following the estimation period, i.e. 2012.The forecasting sample consists of 27 targets and 1,430 non-targets. These proportions of targets and non-targets are closer to population proportions, similarly to Powell (2004).

3.4.3.3. Cut-off probability

The cut-off-probability rules have evolved along with the literature. The first well-justified methodology in deciding the appropriate cut-off point was established by Palepu (1986). The intention has been to minimize the misspecification errors, i.e. the incorrect classification of companies as either targets or non-targets. However, minimization of misspecifications implies Type I and Type II errors have similar effects on the investment performance of "Predicted Targets Portfolio". Barnes (1999) argues that the main motive of ATP studies is to form profitable investment strategies, and the average cost of Type I (i.e. not identifying an actual target) and Type II (i.e. not identifying an actual non-target) errors are unequal. Thus, a classification rule consistent with the investment performance objective would be to maximize the returns of the "Predicted Targets Portfolio". Powell (2004) and Brar et al. (2009) argue that this is possible in the context of ATP by maximizing the concentration of targets in the respective portfolios.

The latter rule may not be in complete alignment to the intention stated in both studies. The aim of their classification rule has been to maximize returns, which would be hypothetically achieved by maximizing the relative number of targets in their investment portfolio. The selection of the cut-off probability in regards to the one particular portfolio with the highest concentration may neglect the distribution of target concentration among portfolios. Due to high model misspecifications, there may be a non-monotonic concentration of targets in the "Predicted Targets Portfolio", which may be

[33] In the cases where there are not enough firms to match the number of non-targets required because the sampling pool has "no replacement", I use all the available firms remaining in the sample.

reflected on the forecasting results in the out-of-sample testing. Therefore, instead of segmenting the in-sample probabilities into different portfolios, it would advisable to focus on an aggregate sample, of which the target concentration will define the cut-off probability. In order to follow this approach, I report the concentration ratio of predicted targets in the estimation sample for different cut-off probabilities, starting with probability of 5% and with a step of 5%. The designated cut-off probability is the one resulting in the highest concentration of actual targets in the "Predicted Targets Portfolio". This classification includes firms which might have been omitted by the rules of Powell (2004) and Brar et al. (2009) due to the non-monotonic classification accuracy.

3.5. Results

3.5.1. Single-period Regression

This section elaborates on the results of the single-period model. The first part of the analysis follows the estimation of the model for the period 2007-2011 and the subsequent testing of the model's forecasting performance for the year 2012. Other important aspects of the analysis involve the identification of the appropriate cut-off probability and the assessment of the "Predicted Targets Portfolio" investment performance.

Table 3.4 displays three versions of the estimated model on the period 2007-2011. The purpose of this table is to show the gradual improvement in the model's (McFadden) pseudo R-square and justify the choice of predictors. The first regression deploys variables that have been suggested by the extant ATP literature. All the control variables, except for BHAR, are industry-adjusted. It is surprising to observe statistical significance only for the variables Return-on-Assets and Sales Growth, whose negative signs are in line with the expectations of "Inefficient Management Hypothesis": lower profitability indicates subpar administration and, therefore, a higher probability of an incoming bid. While most of the control variables have presented controversial results among studies, the most surprising result is the insignificant effect of the "Size Hypothesis" proxy, i.e. log of Market Capitalization. The negative sign of the estimate suggests the expected higher targetiveness for smaller firms, but statistical significance does not reach the 10% threshold, obstructing safe inferences. Size predictors have been proven statistically significant in most previous ATP studies, with the exception of Ambrose and Megginson (1992) who find an inconsequential effect of net asset book value on targetiveness. The rest of the control variables in the first regression bear the expected signs, with the exception of Market-to-Book and Liquidity. The expectation would be for the estimates to have a negative sign, indicating higher firm targetiveness during potential undervaluation and lack of liquidity. Nevertheless, the corresponding statistical insignificance negates the implications of the unexpected signs.

The first model provides an adjusted pseudo R-square of 0.007. The Pseudo R-square statistic for logit models, in contrast to the Adjusted R-square in OLS models, does not express the percentage of the dependent variable's variance explained collectively by the regressors. The statistic's value serves the distinct purpose of comparison between models, as it cannot provide a more intuitive interpretation. In essence, the inclusion of new variables and the modification of existing ones should aim at increasing the Pseudo R-square, indicating model better fit.

The second regression retains some variables from the first regression, i.e. BHAR and the size proxy. The control variables containing accounting information have been transformed into dummy variables. Specifically, the dummy variables for ROA, Sales Growth, Market-to-Book, Price-to-

Earning, and Liquidity assume the value of 1 if the company lies in the bottom 25% of the industry distribution, while the dummy for Leverage takes the value of 1 if the firm belongs in the top 25% of the industry population. The construction of the variables offers intuitive representation of the results, as a positive sign would be in accordance with suggestions in the literature.

The reconstruction of the control variables offers improvement to the pseudo R-square, but the statistical significance of variables does not improve significantly. The ROA dummy retains its significance, although it became more marginal at 10% confidence level. Sales Growth dummy is not significant as its continuous form, and all other dummy variables are insignificant However, the size proxy becomes statistically significant at 5% confidence level, complying with the expectations in the literature. Despite the zero net improvement regarding variable significance, the second model will be retained since it has a higher pseudo R-square.

The third model retains all variables of the second model, along with the new variables introduced in the current study. The improvement compared to the first two models is apparent in the higher pseudo R-square of 0.016. In spite of the higher R-square, the new variables do not seem to perform well individually. The variables Activity Concentration Change and Serial Acquirers display the expected sign and statistical significance, indicating that market activity indeed increases individual firm targetiveness. The variables Capital Liquidity Change, Activity Value Change, HHI Change, and Past Withdrawn Bid bear the expected negative sign, but the estimates are statistically insignificant, while the variable Industry Synergy Change has an unexpected negative sign and it is statistically insignificant. The collective results from the 2007-2011 regression provide only partial support to the "Market Activity Hypothesis", while the rest of the novel hypotheses receive no supportive evidence.

Despite the overall discouraging results of novel variables, the improved R-square advises for the inclusion of the new variables. Therefore, the analysis continues based on the form and outcomes of the third model.[34]

[Insert Table 3.4]

The next step after model estimation is the identification of the cut-off probability that will serve as the appropriate classification threshold for companies in 2012. Table 3.5 displays statistical information on the in-sample prediction performance of model 3 in Table 3.4. For each level of cut-off probability, the table presents the correctly and incorrectly classified target and non-target firms. The columns under the label "Correct" display the number of actual targets and non-targets specified accurately. In contrast, the columns under the label "Incorrect" show the number of firms inappropriately identified as targets and non-targets. The table provides the corresponding Sensitivity and Specificity statistics, which show the correct percentage of actual targets and non-targets correctly

[34] The model variables, both control and novel, have considered adjustment for industry average or conditions. Therefore, the inclusion of industry fixed effects would be excessive.

identified. The sharp changes in Sensitivity and Specificity as the probability level increases is an indication of an ineffective model, suggesting actual targets are assigned disproportionately low probabilities compared to actual non-targets. This is an early indication of the model's ineffectiveness in appropriate classification.

[Insert Table 3.5]

According to the classification criterion stated in a previous section, the cut-off probability should maximise the in-sample ratio of actual targets in the "Predicted Targets Portfolio". This portfolio consists of all firms classified as potential targets, thus it is the horizontal sum of the columns (2) and (4), i.e. Correct targets and Incorrect targets respectively. The concentration of targets in the portfolio is calculated as the ratio of Correct targets over the sum of Correct and Incorrect targets. The cut-off probability should be the lowest probability threshold accompanied by the highest Concentration ratio. For the model corresponding to 2007-2011, the designated probability is 25% with a corresponding Concentration Ratio of 21.21%. This probability will be applied on the out-of-sample testing, where all firms in 2012 assigned with a probability of 25% or higher will be included in the "Predicted Targets Portfolio".

The estimates of Model 3 in Table 3.4 are applied on the forecasting sample of 2012. The use of a cut-off probability of 25% produces the results displayed in Table 3.6. The actual targets for the year 2012 have been 27, while the current model succeeded in identifying only 3 of them correctly (8.6%). The remaining misidentified firms in the sample did not receive bids during 2012. The model seems to fail in identifying a significant portion of the actual targets, but it is impressively accurate in identifying non-events, as it correctly classified 1,366 out of 1,430 non-targets (96.1%). However, the concentration of actual targets in the "Predicted Targets Portfolio" is minor, therefore even relatively few misspecifications in the classification of actual non-targets leads to ineffective forecasting.

[Insert Table 3.6]

Despite of the general poor performance of the model in classification, a proper evaluation has to consider the general context of ATP studies. Table 3.7 provides a comparison between this and previous studies' models. The second and the third columns regard the number of predicted targets and the percentage of actual targets in the predicted portfolio, respectively. The fourth and fifth columns display the Sensitivity and the Specificity of the prediction, i.e. the corresponding percentage of targets and non-targets in the sample identified correctly. The last column summarizes the overall classification accuracy of the model, dividing the sum of correctly predicted targets and non-targets over the total number of firms in the forecasting sample.

[Insert Table 3.7]

The current study's model performs better than the literature average.[35] It achieves the second best concentration of actual targets in the "Predicted Targets Portfolio", faring above average in terms of Sensitivity, Specificity, and Overall Accuracy. In terms of the latter, the model is second only to Powell (2004), although the latter's superior performance is attributed to higher Specificity, not Sensitivity. Brar et al.'s (2009) model performs better in terms of target concentration and Sensitivity, but it yields lower overall accuracy, which reflects the trade-off between identifying many targets and minimizing misspecifications. An additional advantage of the current study's model is the smaller number of potential targets in absolute numbers, rendering the investment easier to implement and monitor.

On the grounds of prediction accuracy, this study's model is arguably among the top performers in the literature. Nevertheless, the ultimate purpose of ATP studies has been the formulation of profitable investment strategies. Thus, the appropriate test of an ATP model regards the stock-market performance of "Predicted Targets Portfolio".

The investment strategy entails the construction of a buy-and-hold portfolio with monthly decisions on liquidation. Specifically, I form an equally weighted portfolio at the end of 2011. At the end of each month, investments in firms that received a bid are liquidated, and the proceedings are equally reallocated to the remaining firms in the portfolio. The results are compounded monthly until the end of the year 2012, when all remaining securities are fully liquidated. Then, the returns are adjusted for the annually compounded monthly returns of the equally weighted CRSP index. Table 3.8 shows the investment performance for 2012. I apply the same investment strategy to actual and predicted targets and non-targets. Performance comparisons between portfolios with actual and predicted status provide a useful evaluation of the investment strategy.

The performance difference on the actual targets and non-targets portfolios is an excellent example of the superior stock performance of targets. By the end of 2012, actual targets portfolio earned an impressive return of 43.07%, while the non-targets lost 3.57%. The predicted targets portfolio performed better than the predicted non- targets portfolio as well, though at a lessened degree compared to the actual targets and non-targets. Investment in the predicted targets portfolio yielded a return of 4.62%, while the non-targets portfolio lost 3.10%.

I further test the effect of actual targets on both predicted portfolios' performances. In untabulated analysis, I exclude the actual targets from predicted targets and non-targets portfolios. The performance for the target portfolio drops to 1.84% and for the non-targets to -3.68%. The interpretation of these results is very important for the model's evaluation. The predicted targets outperform predicted non-targets even when the actual targets are excluded. This is an indication that

[35] The study by Cremers et al. (2008) is not reported in Table 3.7 and is not taken into consideration regarding performance comparison, as it focuses on creating profitable long-short strategies and it does not focus on the model's classification accuracy.

the model manages to choose firms which outperform the market, regardless of their realised acquisition status. A conjecture on this outcome could be the identification of firms which were prospective targets but did not receive a bid, at least within the investment horizon.

The investment performance of the model has been along the lines of Brar et al. (2009) and Cremers et al. (2008), who manage to outperform the market by investing in predicted targets. Brar et al. (2009) achieve a portfolio performance of 8.5% after adjusting for market returns. Cremers et al. (2008) deploy a long-short strategy, which dictates buying and selling firms with high and low targetiveness, respectively. They achieve a return of 21.67% after adjusting for Carhart's (1997) four factors. The current study's investment outcome seems to be lower than the respective rates in the aforementioned studies, but it is one of the few models to accomplish positive returns in the ATP literature, as it has been reiterated that ATP cannot lead to profitable strategies by investing into prospective targets (see e.g. Palepu, 1986; Barnes, 2000).

[Insert Table 3.8]

The general evaluation of the model suggests relatively satisfactory performance in both predictive accuracy and profitability of investment strategies. Target concentration in the "Predicted targets Portfolio" and other accuracy metrics yield above average performance. Furthermore, this study offers rare evidence on the ability to formulate profitable investment strategies by investing in potential targets. However, the results could be the outcome of period-specific conditions. Consistent, time-resilient model performance is a crucial aspect of the strategy's applicability in real-market conditions. In order to assess the model's intertemporality, the model is subjected to rolling estimation and performance testing.

3.5.2. Multi-period Analysis

The robustness tests presented in the literature are limited to the distributional characteristics of variables (see e.g. Cudd and Duggal, 2000), the benchmark portfolios (Brar et al., 2009), and the performance of the investment strategies (Cremers et al., 2009). The current study focuses on model stability. The performance variation of the model through time may hold information on the examined acquisition criteria, along with the transparency of the acquisition targeting process.

In order to test the model's intertemporality, i.e. how consistently the model performs over time, the model analysis displayed in the previous section is performed for 18 partially overlapping time periods. Each iteration involves estimation of the model out of a 5-year period, and forecasting on data of the succeeding year. The earliest analysis starts from the period 1990-1995, drawing data for the estimation sample from the years 1990-1994 and performing forecasting on year 1995. The second analysis is performed for the years 1991-1996 and the period progression leads up to the period

examined in the previous section, 2007-2012. Each period is analysed independently from the others, thus the sampling process is independent among the 18 iterations.

Rolling estimation with one-year step assists the identification of patterns regarding the important factors of targetiveness. In addition, the successive annual forecasting of potential targets enables the formulation of long-term investing strategies. The 18 regressions are displayed in Table 3.9. The progression of estimates and their statistical significance through time offer insights on the spurious inferences drawn by single-period analysis, particularly due to the varying importance of acquisition criteria and inconsistencies in model performance.

[Insert Table 3.9]

The model used in the single-period analysis drew data from the period 2007-2011, and it showed that most control variable estimates are statistically insignificant. The multi-period analysis yields contradicting results. The variables Market Capitalisation, ROA, Market-to-Book, Liquidity, and Leverage show occasional statistical significance, while the variables BHAR, Sales Growth, Price-to-Earnings do not show significance in any of the iterations. This is indicative of the potentially opportunistic significance of targetiveness factors which are standard in the literature.

Novel predictors also find support in the multi-period model estimation. The Past Withdrawn Bid estimate is positive and significant in 11 out of 18 models. This provides evidence on the persistence of attractiveness on firm targetiveness. Especially in the first half of the examined period, companies have higher probability to receive a bid in the present if they have unsuccessfully been targeted in the recent past. Other variables seem to be significant within specific sub-periods. An apparent example is HHI Change. The variable bears both the expected negative sign and statistical significance for two periods in the first half of the sample and for several models in the aggregate period 2001-2009. The negative sign satisfies the expectations of the "Industry Concentration Hypothesis", since decreases in the concentration of market power in the industry result in higher individual firm targetiveness, as prospective acquirers expect lower probability of regulatory intervention.

A less accentuated example of a non-intertemporal factor is the Serial Acquirer dummy, which is positive and significant in four models, one in the first half of the sample and the last three models. The findings regarding the presence of serial acquirers are in accordance with the earlier inference drawn during the preliminary analysis of the univariate testing: the presence of serial acquirers in the market is so prevalent among industries that it usually does not contribute in predicting whether individual firm targetiveness is increased. Furthermore, considering the poor performance of Activity Concentration Change and Activity Value Change, there is at best thin support for the "Market Activity Hypothesis". All three variables rarely display significance, indicating that market conditions with respect to deal frequency or activity only occasionally increase individual firm targetiveness. A plausible explanation for the result could be that the market factors that actually count for a

company's targetiveness during market shocks are company or industry-specific over and above the mere number or value of deals performed in the recent past.

Similar lack of support is observed in the results of Capital Liquidity Change. The variable does not display significant results in any of the models, suggesting that changes in the relative level of cash in an industry is not enough to increase individual firm targetiveness. The "Cash Reserves Hypothesis" has been inspired by anecdotal evidence insinuating that high levels of cash in an industry could be the fuel behind acquisitions. Although this theory has found support in the literature (Harford, 1999, 2005), it does not find the expected support in the current ATP study. As for the Industry Synergy Change, the result is opposite to the initial expectations. The "Hot Market Hypothesis" theorised that increasing synergies in the company's industry will have spill-over effects on individual firm targetiveness. However, the effect is usually insignificant, and the few cases displaying significance bear the opposite sign. This suggests that the increases in synergistic gains in the year before the observation result in lower probability that the individual company will receive a bid. A plausible interpretation to this counter-intuitive result might be in the opposite direction of what has been suggested. Specifically, acquiring CEOs may be rational enough to understand that the increases in synergistic gains during earlier years have positive spill-over effects on potential targets and have raised the respective valuations enough to render possible acquisitions unprofitable. The literature has documented the first-mover advantage in acquisitions (see e.g. Carow et al., 2004), and acquiring CEOs may be aware of the potential misfortune of acquiring late in a wave, although momentum in the market for corporate control expects good recent performance to manifest in more deals soon thereafter (Rosen, 2006). The theory on first-mover advantage and CEO awareness may explain why the negative and significant coefficients for the Industry Synergies Change variable are concentrated in models with data on the period 2001-2008, which include the end of the fifth and the whole sixth merger waves, the latter of which has occurred soon after the devastating crash in 2001 (see e.g. Alexandridis et al., 2012).

Overall, most variables do not display consistent significance over time. The reported seasonality in statistical significance poses a compelling argument for the dynamically changing managerial focus on acquisition criteria. Although it is counter-intuitive to observe, for example, target liquidity has not been an acquisition criterion except for the period 1999-2007. In essence, the concentration of statistical significance within a specific sub-period supports an argument on the seasonality in criteria prioritization. A probable explanation could state that even if these factors are part of the bidding decision process for most of the time, the changes in criteria prioritization allow them to be visibly important only when they are among the top concerns of acquirer management.

The multi-period model estimation reveals the inaccuracy of several inferences drawn from the original analysis. Apart from the misleading insignificance of several control and novel factors, the opposite outcome is observed as well. Several variables yield significant results for 2007-2011, only

to rarely show statistical significance in the majority of iterations. For instance, ROA and Activity Concentration Change are mostly insignificant among the 18 iterations, suggesting low prioritization of valuation and solvency factors by acquirer management. If the analysis had stopped at the single-period analysis, then the overall inferences about the model would be misrepresentative of reality. According to the current study, there is no factor that holds intertemporal significance in defining firm targetiveness.

The model employed includes a long, but non-exhaustive number of predictors, and the variation in the statistical significance of the predictors included attests to the model's time sensitivity. This could also be inferred by the fluctuation of the Pseudo R-square among iterations. R-square starts at 0.023 for the first iteration, then it goes below 0.020 in the second half on 1990's, it remains similarly low for several years and it starts increasing in the last few iterations. The pattern suggests that the model fitness is volatile over the sample period. Further analysis could reveal factors that were more "wave specific", in regards to the 5th (1994-2001) and 6th (2003-2007) U.S. merger waves (see e.g. Alexandridis et al., 2012), and mitigate the volatility in the fitness of the model.

The varying and questionable appropriateness of the model emphasizes the opaqueness in the acquisition decision process. The managerial criteria leading to pursuing deals have yet to be captured by the ATP literature, including the current study. This can be verified by the statistical insignificance of even the most intuitive predictors, e.g. leverage and liquidity, and the level of misspecification in classifications of targets. A conjecture explaining this ineffectiveness regards the idiosyncrasy of acquisition criteria, since the decision process may be unique to particular pairs of acquirers and targets, and cannot be comprehensively captured by a generic model. The level of information needed in order to extract dependable predictions may require operational and strategic details that cannot be found in financial statements and, potentially, cannot be acquired by external observers, such as customer networks, supply chains, minority-shareholder behaviour etc.

3.5.3. Predictive Capacity and Stock-Market Performance

The rolling estimation of the model reveals the unstable performance of acquisition predictors. However, as stated previously, the assessment of the model should be based on two criteria, i.e. the actual predictive capacity and the success of the suggested investment decisions. The evaluation based on those criteria is performed in the same fashion with the single-period analysis.

In untabulated results, I estimate the cut-off probability for each model in Table 3.9. The classification criterion remains the same, i.e. the designated cut-off probability should maximise the actual target concentration in the "Predicted Targets Portfolio". The next step is to apply each model's estimates and cut-off probability on the data of the year after the estimation period in order to classify the firms as prospective targets and non-targets. For instance, the 1990-1994 model estimates will be deployed

in order to calculate the acquisition probabilities of all firms in 1995. Then, the cut-off probability calculated from the 1990-1994 data pool will separate prospective targets and non-targets in 1995 according to the chosen probability. Then, two different portfolios are created, including the predicted targets and non-targets respectively. Each portfolio is formed at the beginning of the forecasting year. At the end of each month, the holdings of firms which received a bid are liquidated and the proceedings are reinvested equally to the remaining securities in the portfolio. Finally, at the end of the year under examination, all portfolio holdings are liquidated. This process is employed independently for all examined sub-periods.

Table 3.10 exhibits the model performance in forecasting accuracy and investment returns. In Panel A, four portfolios capture the performance of actual and predicted targets and non-targets. The "Predicted Targets Portfolio" outperforms "Predicted Non-Targets" portfolio in all 18 years, but it also surpasses the performance of "Actual Targets Portfolio" in 9 years. This superior performance poses a strong argument for the prospects of investing in predicted targets. The suggestion holds even after inspecting the volatility in the respective portfolios' performance. The single-period analysis offered positive returns of 4.6 for the "Predicted Targets Portfolio", which is immaterial when compared to the respective portfolio's performance in most previous periods. The arithmetic average return for the 18 year period is of 26.88%, higher than the average performance of actual targets at 22.97%. This difference is affected by the extreme returns of predicted targets in 2009 (132.2%) and an exclusion of the outlier year offers an, again, impressive average of 20.68%. Actual and predicted non-target portfolios display indistinguishable performance, with average returns of -1.27 and -1.72 respectively.

[Insert Table 3.10]

On the sole aspect of investment performance, the model manages to provide significant returns for most periods, despite the high volatile performance. "Predicted Targets portfolios" outperform "Predicted Non-Targets portfolios" and yield returns almost on par with "Actual Targets". In terms of investment performance, the model proves to be successful.

The second aspect of model evaluation regards the prediction accuracy. Panel B of Table 3.10 presents statistics about the actual and predicted figures for each year. The model seems to be consistently predicting a minor number of targets correctly, and the size of the "Predicted Targets Portfolio" fluctuates significantly, reaching low three-digit number of predicted targets. This volatility passes onto the target Concentration Ratio (Correct over Predicted targets). Nevertheless, the model remains second best after Brar et al.'s (2009) on target concentration for the majority of periods.[36] Thus, the classification capacity evaluation of the model suggests better performance than most studies, despite the inconsistent sizes of suggested portfolios.

[36] According to Table 3.7, the third best performance is attributed to Powel (2004), who achieves a concentration ratio of 4.8%.

Overall, the model performs comparably well in terms of investment returns and classification for the majority of iterations. A surprising outcome is the highly superior investment performance of the "Predicted Targets Portfolio" in past periods, despite the inconsequential differences in prediction accuracy. The occasional superiority over the "Actual targets Portfolio" adds to the astonishment on the model's performance. A plausible interpretation is that the model consistently manages to identify firms worthy of a bid, though unknown conditions do not allow for bids to manifest. These firms may have received a run-up in their share price discounting the imminent bid, and the market has not readjusted its expectation during the year under examination. This scenario needs further investigation which is beyond the scope of this study.

However, in absolute terms the model does not seem to perform objectively well regarding its predictive capacity and accuracy. The "Predicted Targets Portfolios" vary significantly in size among the years, occasionally amounting up to 168 firms. Secondly, Sensitivity and the concentration of actual targets are, in several cases, significantly lower than 2012. This variation could characterize the model as unreliable for the purpose of corporate managers, who want to understand the characteristics of a prospective target. However, the same model can provide lucrative investment-decision tools to fund managers. The discovery of the reasons the models performs well in investment strategies could contribute to its improvement in classifications. This is a task to be undertaken by subsequent studies.

3.6. Conclusion

Acquisition target Prediction (ATP) studies attempt to predict targets in order to inform unaware management and help fund managers create profitably investment strategies. Most of the studies have focused on company-specific characteristics, and have offered innovation in the cut-off probability rules on logit models, as well as new sampling techniques. This study, based on previous works on ATP (see e.g. Palepu, 1986; Brar et al., 2009), investigates the effect of market wide characteristics on individual firm targetiveness. The change in merger activity, the presence of a serial acquirer, market momentum in synergistic gains, industry fragmentation, and company-specific history as a target are expected to increase the probability of a firm receiving a bid. This is the first ATP study to conduct multi-period analysis, performing model estimation, forecasting, and investment portfolio comparison for 18 partially overlapping periods. The model performance is better than the literature average both in target classification and investment performance, which has occasionally been higher than the performance of actual targets. Nevertheless, the initial expectations on the novel predictors were not satisfied, as only few of them yield occasionally significant results.

The multi-period analysis offers important insights on the dynamically changing nature of firm targetiveness, and it raises questions on the inferences drawn in previous studies. Most individual models do not display the same set of statistically significant factors with the rest in the analysis, suggesting that focusing on a single period or aggregating data over a long period of time can bias our understanding. Similar discrepancies are observed in the investment performance. Although the forecasted portfolio of targets achieves higher results than the non-target portfolio, the magnitude of the performance and the size of the portfolio vary significantly per period. This is an indication of low model stability, which can be the focus and motivation of future studies.

4. CEO Deal Experience: Too Much of Anything Will Kill You

4.1. Introduction

The contribution of CEOs to corporate success has been highlighted and reiterated in a voluminous number of academic studies. The job description for the top executive is riddled with complex tasks, and operation under stifling uncertainty (Kotter, 1982). This level of uncertainty requires versatility, rapid cognition, and the capacity to thrive under multiple, ever-changing economic environments (Kesner and Sebora, 1994). The importance of these skills for the majority of CEO positions has been indicative to position similarities across industries and eras (Mintzberg, 1973). In other words, an executive who utilises these skills in an uncertain environment is more likely to be successful in managing organisations in different industries and eras.

The Board of Directors (henceforth BoD) has been entrusted with the power to choose, monitor, and, when appropriate, replace the CEO. These tasks are critical to the performance of the company, as an incompetent leader may considerably hurt firm performance and, consequently, investor wealth (see e.g. Bertrand and Schoar, 2002; Crossland and Hambrick, 2007). Therefore, directors should be diligent with their fiduciary duty; in order to perform it adequately, they should be aware of the skills and attributes required of the top executive in their firm.

Academic literature has been elaborate with the essential skills for the CEO position. Katz (1974) categorises the necessary skills into human, technical, and conceptual. He underscores the significance of conceptual skills, as the CEO has to devise, communicate, and apply the strategy across the organisation. Most of these skills need time to be cultivated, and they are better refined during the executive's tenure as CEO. This concept has stimulated research on CEO succession with respect to, among other factors, CEO experience on the job. The general research strand of finance and management studying the effects of experience has been labelled as "learning" literature (see e.g. Aktas et al., 2009). Up to the time of writing this thesis, published studies have not reached consensus regarding the effect of learning on firm performance (see e.g. Bragaw and Misangyi, 2013; Barkema and Schijven, 2008).

The inconclusive evidence relating experience and general company performance casts a shadow on the arguments suggesting CEO capabilities are essential across industries and time periods (see e.g. Mintzberg, 1973). However, the discrepancy between expectations and outcome could be attributed to the nature of experience studied: general experience on CEO positions may not be the defining component leading to superior company performance. It may be more appropriate to investigate experience in more focused areas of corporate leadership, such as acquisitions, and subsequently

consider the benefit of such experience in the appropriate context. Practising on acquisitions may refine the managerial skills needed to achieve superior deal performance, especially due to the experience gained as leaders for a variety of acquirers. If this is the case, then the transferable nature of such skills would render experienced individuals more potent executives, and therefore more attractive candidates to hiring directors (Finkelstein et al., 2009; Giambatista et al., 2005).

Mergers and acquisitions allow for the examination of context-specific experience and its effect on company performance. M&As are distinct events in the life of a company, usually the most sizeable investment undertaken by acquiring firms (see e.g. Jaffe et al., 2013), and they can be attributed to CEOs as "badges" of experience. The academic literature has studied the effect of organisational deal experience on future deal performance, but researchers have yet to reach consensus on the effect's direction and magnitude (see e.g. Billet and Qian, 2008; Fowler and Schmidt, 1989).

Previous studies in the learning literature in M&As have considered different reference points when measuring experience. Most studies have considered organisational experience (Hayward, 2002; Haleblian and Finkelstein, 1999; Fowler and Schmidt, 1989; Kroll et al., 1997; Wright et al., 2002) while there are few studies also considering CEO experience (Billet and Qian, 2008; Haleblian and Finkelstein, 1999). However, in the latter case, researchers study the deals performed by the CEO in the current firm, which results in a confounding measure of experience; the deals performed during the CEO's tenure in the current firm may also be affected by the organisational heritage in acquisitions. Fee and Hadlock (2013) argue for the existence of company-specific strategies, which persist after CEO turnovers. Although there may be a selection bias of the CEOs hired by BoDs, the only safe method to measure the effect of CEO-specific experience is to isolate and remove the components of organisational experience.

In order to define an appropriate measure of CEO-specific deal experience, I focus on the experience accumulated by the executive up to the time of the CEO appointment. This configuration of experience differentiates the executive-specific experience from the organisational experience. The disentanglement of personal and institutional experience provides an insight on the value of personal experience in acquisitions during similar events. Without the distinction of experience between personal and institutional, the inferences on the effects of experiences would be spurious: confounding measurements of experience will not be able to provide generalizable implications and insights.[37]

I consider the CEO successions as the cut-off points for measuring CEO deal experience. I investigate managerial turnovers for S&P 1500 companies over the period 1992-2012, and I manually collect information on the exectuves' prior CEO positions from publicly available online sources. I include

[37] Several studies have presented evidence in favour of the importance of other CEO characteristics and talent-related features on company performance (see e.g. Hubbard and Palia, 1995; Shrader et al., 1997).

the deals performed within a decade before the appointment date to construct two categories of experience measures: general experience, i.e. the overall number of deals performed over the decade before the appointment, and related experience, i.e. the number of deals performed over the same period while having shared attributes (industry, public status, nation, value) with the deal performed in the new firm.

My hypotheses follow the literature acknowledging a positive relationship between deal experience and company performance (see e.g. Fowler and Schmidt, 1989). The main argument follows that experience in acquisitions, in general or related contexts, would equip the executive with the knowledge and intuition to avoid harmful decisions and pick the most beneficial strategies. The analysis produces insignificant results for the short period surrounding the announcement; cumulative abnormal returns around the announcement are not affected by the CEO's deal experience. However, acquirer shareholders seem to benefit by such experience in the long run; 1-year buy-and-hold abnormal returns are influenced by CEO deal experience over and above standard control factors.

A major difference between this and the previous studies is the form of the relationship between experience and performance. Contrary to my initial hypothesis and the final results, intermediate analysis suggests that the level of experience results in negative long-run returns, similar to prominent studies in the literature (Billet and Qian, 2008; Haleblian and Finkelstein, 1999). Additional tests reveal a non-linear, non-monotonic pattern. Specifically, CEO deal experience and BHAR display an inverse U-shaped relationship. General or related deal experience can be valuable to acquirer shareholders when the CEO is modestly experienced, while high magnitude orders of experience yield exponentially adverse returns. This relationship is similar to the one presented by Hayward (2002), who attributed the effect on the missed investment opportunities resulting by excessive focus on a single target industry for a prolonged time period.

Other academic studies have attributed the negative relationship to inappropriate generalisation of acquisition lessons (Haleblian and Finkelstein, 1999), and hubristic behaviour (Billet and Qian, 2008). The inverse U-shaped relationship persists after accounting for conventional measures of CEO overconfidence (Malmendier and Tate, 2008). However, hubristic behaviour prevails as the best explanation of the observed pattern: CEOs with modest deal experience have yet to succumb to arrogant tendencies, while their more experienced peers tend to do worse deals.

Since the analysis has accounted for the effect of CEO hubristic behaviour as suggested by Malmendier and Tate (2008), the resulting haphazard executive behaviour could be attributed to a different type of overconfidence. Malmendier and Tate (2008) identified whether CEOs believe they can do even better than their coutnerparts. However, another shade of overconfidence may regard the CEO's belief that her current knowledge and intuition is enough to compensate for lack of effort. In the latter case, overconfident behaviour is similar to the inappropriate generalisation suggested by

Haleblian and Finkelstein (1999), but without the eventual learning benefits. Haleblian and Finkelstein observed that positive deal performance leads to increasingly adverse returns on subsequent acquisitions, which is due to the inappropriate generalisation and application of prior experience. However, accumulation of experience has an inflection point, after which performance improves, although it remains negative. In the current study, the results could be explained by inappropriate generalisation in the long-run; the confidence of CEOs in using their existing knowledge manages to overcome the learning benefits of deal-making. Both Billet and Qian's (2008) and Haleblian and Finkelstein's (1999) adjusted framework explain my results, and both their arguments are closely related to overconfidence.

This study provides three contributions to the academic and practitioner communities. First, I add to the literature on CEO experience and its impact on company performance. The importance of experience, be it organisational or executive-based, has stimulated studies for a prolonged time period (see e.g. Bragaw and Misangyi, 2013; Kusewitt, 1985; Graffin et al. 2011). To the best of my knowledge, this is the first study to investigate the contribution of CEO-specific deal experience on company performance. Second, this study contributes to the value creation during M&As strand. CEO deal experience can be valuable to acquirer shareholders, as long as CEOs do not get too comfortable with the type of deals they perform. This is the basis for my third contribution, which bears policy implications: directors should be aware of the experience level of the CEO at the time of hiring, and adjust their monitoring and incentivising mechanisms so that deal familiarity will not yield negative results for shareholders.[38]

In the following sections I provide the theoretical framework of this study, elaborating on the appropriateness of M&A events for the research framework used, the importance of the CEO as the leader of the firm, as well as the general and specific skills she needs to lead her firm in success. In parallel, I provide a review on existing literature, as well as the limitation of the current studies. I proceed with the formation of hypotheses, data specifications, and the main body of the analysis. I proceed with the implications and limitations of the current study, and I conclude this chapter with a summary of the research outcomes.

[38] In untabulated results, I find that the level of general and related deal experience does not affect the salary, bonus, equity-based, and total compensation of the CEO in the year of appointment after controlling for executive and company factors.

4.2. Literature Review

4.2.1. Theoretical Framework

In this section, I provide s short literature review and insights on the importance of acquisitions, managers, and deal experience in the context of measuring the effects of CEO event-specific experience on company performance.

4.2.1.1. Importance of Mergers and Acquisitions

Mergers and Acquisitions often represent the most significant company investment. This can mainly be attributed to the staggering consideration paid by acquirer to target shareholders. Jaffe et al. (2013) report an average deal size and relative size ratio of $339.5 mil and 23.31% respectively for the period 1992-2007. In other words, about one fifth of the combined entity's value comprises of assets assimilated through the acquisition. If the deal Return-on-Investment (ROI) does not meet the acquirer long-term ROI, then the new firm has committed a sizeable portion of its value to a value-destroying venture.

Acquisitions are also important due their capacity to facilitate strategic shifts, as it has been the case with the $2.85 bil acquisition of Firth Rixson by Alcoa in 2014 (Financial Times, 2014). Alcoa, an aluminium producer, undertook the acquisition as an opportunity to expand its product portfolio to automotive and aerospace parts. Refocusing is not exclusive to the acquirer business strategy, as acquisitions are also performed with the aim of disciplining and reinventing over-diversified target firms (Chatterjee et al., 2003).

The magnitude and strategic implications of acquisitions impose sizeable effects on shareholder wealth; the most cited stylised fact about acquisitions so far is that acquirers either lose or do not gain during deals (see e.g. Firth, 1980; Jensen and Ruback, 1983; Fuller et al., 2002; Alexandridis et al., 2012). The extreme cases of deals yielding losses of billions of dollars in acquirer market capitalisation are not as rare as acquisitive managers would hope, rendering acquisitions risky and investors wary.[39] Managers pursuing acquisitions are exposed to uncertainty even when they follow the established etiquette in pursuing deals. For instance, targeting private firms or paying with cash consideration have repeatedly displayed superior performance against similar deals with public targets or stock consideration (see e.g. Travlos, 1987; Fuller et al., 2002). Nevertheless, following conventional wisdom does not guarantee full protection from significant losses (see e.g. Moeller et al., 2005). Acquiring managers have to make decisions for a series of issues far beyond target public status and consideration type. They have to reach a working plan tailored to the deal at hand and the

[39] Moeller et al. (2005) estimated the percentage of deals losing more than $ 1 bill. for the acquirer at 2.1% for the period 1998 – 2001.

concurrent business environment. It would be an unsurprising outcome if managers with exposure to multiple deals perform better acquisitions than their less experienced peers, since they have had the opportunity to learn the inner workings of deal-making first-hand, as well as by trial and error. However, prior literature has not been conclusive on this topic, as deal experience has been shown to offer positive (Fowler and Schmidt, 1989), negative (Billet and Qian, 2008), U-shaped (Haleblian and Finkelstein, 1999), inverse U-shaped (Hayward, 2002), and even immaterial gains (Kroll et al., 1997) to acquirer shareholders. The lack of consensus indicates the need for further investigation under alternative research frameworks.

4.2.1.2. Management – General Skills

This section provides a general review on managers and CEOs in order to highlight the importance of management to company success and, therefore, investor performance.

Notwithstanding the impact of acquisitions to corporate financial health, successful administration of the firm relies on a multitude of decisions. The CEO, as the top administrator of her organisation, should be, or promptly become, a master of several skills in order to be a competent leader. Katz (1974) has categorised managerial skills into human, technical, and conceptual. Human skills allow the individual to proficiently understand and cooperate with people. Technical skills define the capacity to identify, utilise, and create processes and techniques towards the completion of a task. Conceptual skills relate to the strategic aspects of the firm; they reflect the aptitude in identifying the interaction and dynamic co-evolution of groups and processes through time, and along different contexts. Aptitude in conceptual skills is an indispensable asset for a CEO, as she is responsible for steering the firm through a sea of countless alternative routes, of which only a fraction has the potential to lead to success. Katz (1974) argues that an effective manager should be adept in conceptual skills, even if it means she has to partially rely on her immediate subordinates for human and technical skills. Although this proposition seems exaggerated, it succeeds in highlighting the unique responsibility of the CEO to continuously generate, disseminate, and materialise the company's vision.

The responsibility and job complexity faced by CEOs justify their aversion to unnecessary haste in understanding the firm's processes, especially during their first time on the job. This aversion can be identified in the executives' preference for learning by trial and error, which results in the contemporaneous adjustment of both their management style and the corporate layout (see e.g. Hambrick and Fukutomi, 1991; Miller and Shamsie, 2001). This experimentation stage coincides with the radical reforms performed by the CEO in the first 6 to 18 months of her tenure (see e.g. Kotter, 1982; Gabarro, 1987). On average, these reforms are fully incorporated by the company over a period of 3 to 5 years. During this time span, the new management style has been fully assimilated by the

employees (Kao, 1985). The decisions made during the adjustment phase will affect the firm for years after the CEO turnover. In academic literature, the CEO's adjustment to her environment's feedback has been connected to "learning."

CEO learning has been discussed in a diverse set of frameworks. For instance, Lant and Mezias (1992) find evidence on the environmental effect regarding transforming learning into action. Specifically, they find that CEOs managing firms in a more stable market environment are more likely to reorient the firm strategically after periods of poor performance. On the opposite side, companies operating in more volatile business conditions tend to retain their strategic path regardless of performance. Along the same lines, Henderson et al. (2006) identify that the learning capabilities of managers help them improve their performance in less turbulent industries. In slow-changing environments, CEOs are inclined to invest into learning, as the lessons learned in one period will most probably be relevant in the future. However, in fast-moving industries, any experience gained will most probably be irrelevant to future events, so CEOs are less motivated to engage in learning, and more prone to attend to arising problems reactively. The corollary of this behaviour is knowledge stagnation across top management teams, and, consequently, higher rates of top-executive replacement with more appropriate successors (Henderson et al., 2006).

4.2.1.3. Management – Deal experience

The review thus far has provided evidence on the significance of acquisitions, the complicated requirements for the CEO position, and the impact of learning on general corporate performance. Academic researchers have combined their collective curiosity on these three issues, as they embarked on investigating whether corporate acquisitions could be associated with the concept of learning. The nature of acquisitions as distinct, meaningful, and repetitive events has equipped management and finance researchers with appropriate testing grounds for understanding whether the documented learning elements apply in investments of such importance. Specifically, researchers have attempted to answer whether there is an efficient feedback mechanism between investor reaction, deal performance, and management decisions.[40]

A substantial share of the learning literature has studied the effect of CEO and company strategic decisions on deal-making. For instance, there have been numerous studies indicating the influence of deal experience among companies in different countries, cultures, and industries. Shimizu and Hitt (2005) exhibit the different effects of divestiture experience on future divestiture decisions between the computer and pharmaceutical industries. Gaur and Lu (2007) display a negative relationship

[40] For a summary of acquisition learning literature see Barkema and Schijven (2008).

between deal experience in foreign countries and the probability of company survival (see also Barkema et al., 1996).

A more populated literature strand in acquisition learning is concerned with value creation. For instance, Fowler and Schmidt (1989) found a positive relationship between the number of deals performed during the 4 years prior to a deal and the acquirer announcement returns. Their results imply the existence of positive learning curves, as additional institutional deal experience resulted in further improvement of future acquisition performance. A restricted number of studies (Kroll et al., 1997; Wright et al., 2002) have investigated the performance of acquisition experience on performance in the context CEO rewards and deal performance; their findings suggest the relationship between deal experience and performance is insignificant.

The inferences on positive or non-existing relationships stand straightforward; companies may learn from their past mistakes and improve in future acquisitions, or they may learn nothing and repeat the same mistakes. The circumstances pertaining to acquisitions may be so dissimilar among deals, that there cannot be an effective learning process to prepare the company for future deals. However, there are a few studies reporting more intricate relationships. Haleblian and Finkelstein (1999) detect a U-shaped relationship between deal experience and performance. Specifically, they find a negative relationship between the number of deals performed in the past and subsequent acquisitions of targets in unrelated industries. The authors attribute the adverse relationship to inappropriate generalisation of past deal experience after an instance of successful deal performance. More interestingly, the incremental effect of each additional deal in the company's deal experience yields negative effects of smaller magnitude. The result is a U-shaped relationship between performance and past deal experience, which indicates that inappropriate generalisation subsides as experience increases.

The study by Haleblian and Finkelstein (1999) drew academic attention to the heterogeneity of deals and the multifaceted aspects of acquisition experience. Hayward (2002) elaborates further on the concept, highlighting the need for both specialised and general deal experience. In detail, he attests to the short-run benefits of related deal experience; recent, related experience leads to superior announcement returns for the acquirer, as the accumulated know-how and related assets can increase the overall scope and influence of the acquirer. However, the market environment changes over time, and, eventually, growth opportunities will become scarce in the acquirer industry and affluent in other industries. Firms without exposure to industries beyond their core business area will be less potent in identifying valuable opportunities in peripheral or unrelated industries (Hayward, 2002). As a result, companies with more diverse deal exposure will identify and exploit growth opportunities in the economy faster than their narrowly focused competitors. Therefore, while related deal experience improves deal performance in the short-run, acquirers should also perform diverse acquisitions in order to stay alert for emerging growth opportunities in unrelated industries. The positive short-run effect of related experience, and the subsequent negative effect on the company's ability to identify

profitable opportunities in unrelated industries leads to an inverse U-shaped relationship between industry-specific experience and acquisition performance. This result is contrary to the one in Haleblian and Finkelstein's (1999) study, who have predicted the opposite; a U-shaped relationship. However, Hayward attributes this inference to related experience with respect to target industry and not general deal experience.

Billet and Qian (2008) study the performance of serial acquirers and report declining returns for successive deals. In their study, companies are willing to consummate value-destroying deals if earlier deals yielded positive announcement CARs. At the same time, the corresponding CEO purchases relatively more stock of her own company prior to high order deals. Billet and Qian interpret this behaviour as hubristic: CEOs seek for higher ownership in their firm before an acquisition, as they are confident in their capacity to augment the combined entity's value. The fact that the market does not agree with that view, as the adverse announcement returns suggest, is a signal of their overconfidence (see Roll, 1986).

In a related context, Aktas et al. (2009) reach an alternative theoretical conclusion on the relationship between managerial learning and hubris. They justify the adverse effect of acquisition experience as CEO risk aversion, arguing that even rational, serial-acquiring CEOs will increase their bidding aggressiveness for every consecutive deal. Their intention is to prevent competing bids, since prospective acquirers are more likely to be discouraged by high initial bids. Similar aggressive behaviour should be observed for overconfident CEOs, who believe in their own ability to extract unrealistically high rents from target firms. Thus, while hubristic CEOs display similar behaviour and returns with the rational CEOs, the motivation behind their initial high bids is different.

Aktas et al. (2011) find modest support for their previous theoretical predictions. Investigating acquisitions for the period 1992-2007, they illustrate that CEO bidding takes into consideration prior investor reactions to deals; this is consistent with the notion of CEO learning from bidding experience. In other words, both hubristic and rational CEOs seem able to learn from past acquisition experience, and therefore moderate any hubristic behaviour, and improve announcement returns. In a later study, Aktas et al. (2013) shed more light on learning in the post-acquisition process of integration. For an unrestricted sample of US serial acquirers, they document a shrinking time gap between deals during the period 1992-2009. They argue CEOs become more experienced in integrating acquired companies, thus the process of integration becomes shorter after each deal, and acquirers proceed to the next acquisition sooner than before. This finding endorses earlier suggestions about the need of CEOs to learn by "hands-on" practice (see e.g. Katz, 1974; Gabarro, 1985).

Despite the recent trend to focus on hubristic behaviour, academic literature offers inconclusive results regarding the connection between acquisition learning and performance. Few studies document an insignificant relationship between deal experience and performance (Wright et al., 2002; Kroll et

al., 1997), several find a positive connection (e.g. Fowler and Schmidt, 1989; Barkema et al., 1996), some find a negative effect (see e.g. Billet and Qian, 2008; Haleblian and Finkelstein, 1999), and few studies find non-monotonic relationships (Haleblian and Finkelstein, 1999; Hayward, 2002). The inconclusiveness in the literature applies to both general and specialised learning. For instance, researchers have yet to reach consensus on whether international deal experience is beneficial for the firm. While Markides and Ittner (1994) identify a positive relationship between international experience and short-term stock returns, Barkema et al. (1996) find a non-significant connection between international deal experience and the probability of company survival after the deal.

Apart from the impact of deal experience, academic studies have looked into the impact of management-specific knowledge on deal-making overall. Nadolska and Barkema (2014) probe into the impact of diversity in the managerial team on deal activity. They discover lower frequency but higher performance in the deal-making of Dutch companies with higher managerial diversity in tenure and educational background. Their results are firmly supported by the literature (see e.g. Barkema and Shvyrkov, 2007; Cannella et al., 2008).

The academic research body has shown commitment to discovering the connection between learning and corporate performance. However, existing studies do not offer conclusive or unifying results, indicating the incompleteness of the framework regarding organisational and managerial learning. In itself, this provides strong motivation to investigate the relationship further.

4.2.2. Limitations of Existing Literature

The overwhelming majority of studies in corporate learning and performance implicitly identifies learning as a dynamic process. They use the number of deals consummated within a range of time before the event as the measure of experience (see e.g. Haleblian and Finkelstein, 1999; Kusewitt, 1985; Fowler and Schimdt, 1989; Wright et al., 2002). Regardless of the time frame of past deals, all studies include the deals which are relatively recent to the event under investigation. In principle, the treatment of knowledge and skills as evolving attributes is intuitive, since every new experience yields an effect of variable magnitude on individual perception. It would also not be an exaggeration to state that every acquisition constitutes a new experience for the acquirer, since the management team will have to improvise and adjust on at least few of the several deal aspects, such as payment, publicity, and integration (Galpin, 2014).

The first seminal work in this literature strand is provided by Haleblian and Finkelstein (1999). They identify non-linear relationships between organisational deal experience and performance. They conclude that companies have steep learning curves, as they tend to perform poorly until enough experience has been assumed. Another major study has been conducted by Billet and Qian (2008). They identify a significant and negative effect for “high-order” deals, interpreting the adverse results

as the product of management overconfidence. Instances of positive performance in the past lead to negative performance in the future, while the corresponding CEOs purchase more stock before the value destroying deals.

The main difference between Billet and Qian's (2008) study and prior work is the focus on the agent of experience. The overwhelming majority of researchers constructs experience measures on the deals performed by the organisation, regardless of changes in the top management (see e.g. Haleblian and Finkelstein, 1999; Ingram and Baum, 1997, Lubatkin, 1983; Power, 1982; Kusewitt, 1985; De Noble et al., 1987). Billet and Qian focus on CEO deal experience, thus they track the CEO deal-making in previous CEO positions. However, their research structure does not adequately distinguish between executive and organisational experience. They consider all past deals up to 5 years before the deal announcement, thus they also formulate their deal experience variable with deals occurring after the CEO appointment. The construction of this experience measure has significant overlap with the organisational experience, as deals performed in a firm after an executive's appointment could be registered as experience to both the CEO and the rest of the company. In order to measure the effect of the CEO-specific deal experience, it would be most appropriate to exclude confounding experience components. Therefore, the experience accumulated after the CEO appointment should be excluded when measuring CEO-specific deal experience.

An additional implication of considering organisational instead of managerial experience is that changes in top management remain unaccounted for. The lack of concern for management shifts premises a set of assumptions, which impede the generalisation of previous studies' inferences. The first assumption postulates that organisational knowledge is retained throughout the years of the company's operation and deal activity even after several managerial shifts. Management literature has provided evidence on the benefits of organisational knowledge such as decreasing cost per unit (see e.g. Darr et al., 1995), especially through the application of rules and routines in the industrial setting (see e.g. Argote et al., 1990; Benkard, 2000). Regarding mergers and acquisitions, there have been several studies theorising on knowledge retention (see e.g. Makri at el., 2010; Vermeulen and Barkema, 2001). However, there is still a gap between theoretically suggesting and finding explicit evidence on knowledge retention and application from one acquisition to the next. Assuming organisational knowledge on acquisitions is retained through time sounds as an intuitive inference due to the indications of knowledge retention in non-acquisitive activity, especially after the steep learning curves in acquisitions suggested by Haleblian and Finkelstein (1999). Nevertheless, the proposition has not been empirically supported.

The second assumption of using organisational experience as a measure of knowledge suggests that top management is able to access and effectively apply the retained knowledge, regardless of whether the same executives have had any direct exposure to the amassed experience. For this assumption to hold true, it would require that either high rank executives can pass their knowledge down before

departing from the firm, or at least a set of executives remain in place for a much longer time than their peers. The latter notion may be deemed excessively optimistic, as the top management is unlikely to remain in place after a CEO turnover. Specifically, the mobility among the top 5 executives is at least as high as the CEO's, and the job safety of these executives correlates positively with CEOs retaining their position (Fee and Hadlock, 2003). Nevertheless, even if a significant portion of the top management team has a long tenure within the firm, the organisational knowledge pool may still be inaccessible. These executives may not have the skills of acting on the knowledge, or it is possible that other more powerful executives may decide to enforce their personal view on the matters at hand and disregard their colleagues' input. In other words, it should not be surprising if the top management team does not have either the capability or the opportunity to benefit from latent organisational knowledge.

The third and, arguably, most impactful assumption is the disregard of the CEO's importance in making customised and pace-setting decisions for the firm. This implicitly suggests that executives, especially the CEO, will act along the lines of the collective spirit of the organisation without necessarily contributing with their personal, distinct opinions. This suggestion has found occasional support in the literature (e.g. Fee and Hadlock, 2013). Golubov et al. (2015) report high and significant company fixed effects on acquisition performance, after controlling for change of management and other deal- and firm-related characteristics. However, their results do not account for CEO selection bias, as acquirers may deliberately hire CEOs fitting a specific profile. In support to this contradiction, Edmans et al. (2009) present a theoretical model in which larger firms are expected to attract highly talented CEOs. Furthermore, a number of studies have attested to the importance of the CEO making decisions regarding investments, along with capital structure, and disclosure policies (see e.g. Bertrand and Schoar, 2002; Graham et al., 2012; Bamber et al., 2010).

Management literature extends beyond the significance of CEOs in administrative and strategic decisions (see e.g. Finkelstein and Boyd, 1998), and establishes the importance of CEOs in performing acquisitions. Several studies argue for the benefits of managerial talent on acquisitions and general performance (see e.g. Falato, 2008; Cremers and Grinstein, 2013). Kaplan et al. (2012) show a strong relationship between successful buyouts and Venture Capital CEOs with a particular set of skills. Specifically, CEO success is more closely related to superior execution capabilities than interpersonal skills. On the topic of managerial skill type, Custodio et al. (2013) find a significant and positive effect of general managerial ability on the company's performance during industry shocks. They also document a distinct and superior performance for "generalist" CEOs when compared to their "specialist" peers, a difference leading to materially higher total payments for the former. The account of the aforementioned studies, although not exhaustive, strongly argues for the importance of top managers in leading most, if not all, major corporate decisions.

A specific example on the importance of leadership in corporate prosperity is the case of General Electric (GE), which has widely been considered one of the most effective institutions for development of managerial talent (Bartlett and McLean, 2003). GE executives receive strict and meticulous training in both processes and adaptation. The benefits of training become apparent when considering the standardization of post-acquisition integration process: full-integration of acquired firms spans over just 100 days. Although it is GE's organisational structure and culture encouraging these phenomenal results, the executives responsible for the outcome are well-esteemed in the market for CEOs. In a recent study by Rowe et al. (2009), it is shown that firms hiring former General Electric executives as CEOs perform higher in the stock market than firms hiring from the general population of executives. The case of General Electric offers additional affirmation on the importance of CEOs, as well as the cross-sectional variation in executive performance.

Academic researchers seem far from willing to accept "corporate learning and performance" as an adequately investigated strand. This is apparent due to the lack of consensus in the respective studies' inferences, and the persisting limitations of the applied frameworks. The current study provides an alternative outline for measuring the utility of CEO experience and accounting for misspecifications in previous studies.

4.3. Data

4.3.1. Manual data collection

One of the focal points in this study is the CEO turnover event; experience indicators measure the number of deals performed by the CEO up to her appointment date. I collect data on appointment dates, compensation, and tenure characteristics from Execucomp database on S&P 1500 companies for the period 1992 to 2012. Since Execucomp includes only S&P 1500 firms, this study reports on the deal performance of CEOs of S&P 1500 firms only. The information on prior positions of the executives as CEOs (not exclusively in S&P 1500 companies) and whether the manager has been a member of the current firm (executive, director or chairman) before the appointment has been collected manually from online websites and databases (EDGAR, Bloomberg BusinessWeek, LinkedIn.com, nndb.com). All executives reported as interim or those with a total tenure of less than a year in the new firm have been excluded from the sample.

The starting point for the manual collection was the sample of CEO turnovers. I searched for the name of the incoming CEO in the aforementioned online databases and I gathered the company names in which CEOs have held CEO positions during the decade before their appointment. Then, I matched the identified company names with the CUSIP code available in Thomson One Banker (SDC). I proceeded with identifying the deals performed during the executive's prior CEO positions for up to a decade before the appointment. Then, I used the information gathered in order to create the CEO deal experience variables. After I compile the sample of post-appointment acquisitions, I match the respective CEOs in the S&P 1500 firms to their deal experience measures.

4.3.2. Main sample

In order to construct the sample of post-appointment acquisitions and collect all the relevant information needed, I use Execucomp, SDC, CRSP, COMPUSTAT, and RiskMetrics databases. The deals considered, both for the pre- and post-appointment samples, were screened according to several criteria. The public status of targets had to be either Public, Private or Subsidiary. Furthermore, several deal types are excluded due to their irrelevance with the purpose of the study.[41] It is also intuitive to reason that not all deals are very important for a firm. It is highly likely that CEOs will not actively participate in deals that are either too small or which do not result in control of the target firm. If their engagement is not major, then it is only natural to assume that they do not learn from these deals, and investors do not use the same criteria when evaluating low magnitude or non-

[41] I consider the classification provided by Thomson One Banker and exclude the following deal types: minority stake purchases, privatizations, leveraged buyouts, spinoffs, recapitalisations, self-tender offers, exchange offers, and repurchases.

controlling bids. Consequently, this study focuses on deals commanding the CEO's attention. In order to establish the importance of the deal for the acquiring firm, value and ownership restrictions are applied. All deals have minimum value of $1 mill. In 2015 dollar terms and the relative size between deal value and acquirer market capitalisation is at least 1%.[42] Also, I include only completed deals, for which acquirers own less than 10% more than 50% of the target before the announcement and after the consummation of the deal, respectively. [43]

Subsequently to matching CEOs with deals before and after the appointment, I draw accounting and stock market information from COMPUSTAT and CRSP databases respectively. The categorisation of industries follows the Fama/French 10-industry classification.[44]

After accounting for all data restrictions among the sources used, the post-appointment deal sample amounts to 3,785 deals for the period 1992-2014.[45] Out of those deals, 1,163 were performed by executives with prior CEO experience, and 247 were performed by CEOs with prior deal experience. The sample also includes 1,508 unique CEOs working for 1,154 different firms throughout the sample period. Of those 1,508 CEOs, 456 have experience in a CEO position in the decade before the appointment in the investigated S&P 1500 firm and 100 have deal experience during their previous CEO tenures.

Table 4.1 shows the number of deals per level of CEO deal experience. Column (1) displays the number of deals per level of general CEO deal experience and columns (2) to (6) show the number of deals per level of related deal experience. In general, there is a trended decrease of deal frequency as the magnitude of experience increases; it is infrequent for CEOs to have deal experience at the time of the appointment. A noticeable outlier can be identified in an executive with a general deal experience of 14 deals, who went on to perform 9 more during his tenure. The said executive is Stephen F. Bollenbach, and the 9 deals were performed for Hilton Hotels Corp. during the period 1996 – 2005. It also seems that the majority of deals have some similarity to the CEO's prior deal experience, with the exception of deal value similarities. Specifically, 97.2% of all deals performed by deal-experienced CEOs have at least one similarity (industry, status, value or nation) with a deal performed during the CEO's pre-appointment tenures. Even if we exclude the "country bias", i.e the tendency of CEOs to acquire targets in the same nation as their firms, the related industry and public status

[42] All information on accounting, stock market, CEO payment, and deal value has been transformed to 2015 dollar terms using the Consumer Price Index (CPI) provided by the Bureau of Labour Statistics of the United States Department of Labour.
[43] The sampling criteria differ from Chapter 3 due to the nature of the underlying study. The threshold of size has increased in order to allow for a larger sample, while the restrictions of ownership have been loosened to reflect the mitigated importance of having an unexpected deal announced by the acquirer. The results remain qualitatively the same for the sampling criteria of Chapter 3.
[44] The results of the study remain similar when applying different Fama-French industry classifications, such as 12-industry and 48-industry classifications.
[45] In the initial stages of data screening, there have been 348 deals that have been performed within 10 days from each other. For reasons of sample purity, I have excluded them from the analysis. The results remain qualitatively the same these deals are retained in the sample.

experience amount up to 68.0% and 61.1% of all deal experience, respectively. This is indicative of the tendency for the experienced CEO to pursue deals with familiar specifications. As for deal value related experience, it seems fairly rare for CEOs to perform deals of familiar size. Only 38 deals have a CEO familiar with the deal size, for which the maximum magnitude of experience is 2 deals at the time of the appointment.

[Insert Table 4.1]

4.4. Methodology

4.4.1. Hypotheses

The Board of Directors is responsible for monitoring, evaluating and, when deemed appropriate, replacing the CEO. Events of managerial turnover are suitable for academic studies, as CEO appointments are distinct and deliberate occasions. For the evaluation of each CEO candidate, directors ponder over several criteria. For instance, will the CEO be an insider or an outsider? Will she be a generalist or a specialist? Their respective decisions are based on the circumstances of the market and the firm (see e.g. Borokhovich et al., 1996). The directors' decision has to be well calculated and thoughtful, thus the possibility of having an executive randomly selected for the job is low. Directors have to be thorough in identifying the potential candidates, evaluating them and finally choosing the successor. They have to ensure their decision will yield the best possible outcome for their shareholders.

It is at the time of reviewing potential candidates that directors weigh the pros and cons of all relevant CEO attributes. Candidates with experience on CEO positions will most likely bring in know-how, professional connections, and prestige; these attributes should increase their hiring prospects as long as the candidates have not underperform considerably in the previous firm. It is also at this point of the hiring process that the executive's acquisition experience will be evaluated. The directors should be expected to consider whether the candidates have credentials in deal-making and, then, whether their experience could benefit the firm. If their deal experience is anticipated to advance shareholder wealth, the candidates should have a higher probability of being hired as CEOs and, in the course of time, perform better acquisitions when compared to their inexperienced peers.

The CEO hiring process is not an entirely uncharted area in academic research.[46] However, the information asymmetry between CEO nominating committees and outsider researchers can be unbridgeable, rendering the reverse engineering of the full process almost impossible. Even after considering databases with information on the top 5 executives (e.g. Execucomp, Capital IQ), it would be almost impossible to evaluate the actual range of executives considered for the CEO position. Specifically, even if the information on all executives in the market was available, it would be impractical to guess the subgroup of CEOs considered in the screening process. It would not be an exaggeration to state that the actual deliberations of the BoD are by construction a "black box", an opaque process in which outsiders have virtually no chance of deciphering without inside help. Consequently, the assessment of deal-experience value has to be conducted in a more transparent context.

[46] For an insight on the hiring process see Carpenter et al. (2004), Worrell et al. (1993), Furtado and Rozeff (1987), Worrell and Davidson (1987).

If deal experience has a fundamental effect on the executive's ability to perform acquisitions, then the performance of her deals after the appointment should be statistically different when compared to the performance of her inexperienced peers. As mentioned before, literature has to offer a variety of different potential relationship structures between experience and performance (Barkema and Schijven, 2008). These studies, however, have not focused solely on the deal experience amassed by the CEO before the appointment in the acquiring firm. The deal experience gained after the CEO appointment could be attributed to both the CEO and the company as an institution; a refined measure of CEO-specific deal experience should exclude confounding portions of deal experience, which is necessary in order to measure the effect of CEO-specific experience on company performance.

The distinct difference between the experiences acquired before and after the appointment lies with the repercussions of the experience. For instance, the literature has not yet concluded on the effect of acquisition performance on CEO turnover.[47] Although value-destroying deals may lead to turnovers (Lehn and Zhao, 2006), the process of replacing a CEO could also be inert, as directors may slow down or impede the process due to personal or professional ties with the executive. This idea is in accordance to the managerial power hypothesis (see e.g. Ryan and Wiggins, 2004) which suggests that CEOs are capable of extracting higher rents and job security from exerting material control on directors. However, CEO candidates most probably have no apparent or strong control of the BoD before their appointment in the firm, even in the case of internal candidates. Thus, the collective evaluation of the executive's skills before the appointment is more likely to be based on merit, and less likely based on personal ties with the prospective CEO. In this case, they should consider deal experience as an asset only if it is expected to lead to higher acquisition returns after the appointment.

After considering all of the above, along with the expectations of the learning hypothesis, i.e. more experience leads to better results, I form the first hypothesis:

Hypothesis 1: Higher CEO acquisition experience at the time of the appointment will lead to higher returns for the acquisitions performed by the CEO after the appointment.

It has been suggested that not all types of experience lead to superior performance. Haleblian and Finkelstein (1999), applying the transfer theory from the discipline of cognitive psychology to acquisitions, published the first study proposing that not all managerial experience contributes to better corporate outcomes. They highlight the penalty of misguided generalisation of experience: CEOs and companies performing deals in industries dissimilar to the ones in the past fare worse than those performing deals in familiar industries. The market rewards institutions and executives when they apply their knowledge wisely on high-stake ventures such as acquisitions.

[47] Lehn and Zhao (2006) showed a higher probability of turnover after value destroying acquisitions, and Alexandridis et al. (2015) showed an improvement in acquisition performance after forced turnovers. However, Yim (2013) reported an insignificant effect of acquisition performance on the probability of turnover.

Inappropriate generalisation of experience, nevertheless, should not be the norm. For instance, in strategy literature, it has been suggested that incoming CEOs are better capable of applying knowledge and expertise within the same industry (see e.g. Castanias and Helfat, 1991, 1992; Bailey and Helfat, 2003). In general, when a CEO enters a new company, she is expected to display discretion in the application of her past knowledge. The process of the mutual adjustment between the top manager and the firm takes up to three years for a first-time CEO (see e.g. Hambrick and Fukutomi, 1991). During that time, which may be shorter for seasoned CEOs, she has to achieve convergence of her management style and the corporate modus operandi in order to optimise the overall performance in the new environment. The specific skills she may have acquired during her career should contribute to a better response to the issues at hand. Hayward (2002) shows that deal experience in the same industry yields a positive effect on future acquisitions, at least in the mid-run. I extend this argument to the relationship between pre-appointment deal experience and post-appointment deal performance. Specifically, I assume that experience in deals similar to the one under investigation should lead to superior returns. Accordingly, the second hypothesis of this study is the following:

Hypothesis 2: Similarities between the acquisition under investigation and pre-appointment CEO deal experience will result in higher returns.

Both hypotheses are tested with the appropriate measures and discussed further in the "Results" section.

4.4.2. Model

The main analysis of this study is conducted via the application of Ordinary Least Square regressions. The multivariate model has the following form:

$$Y = a_0 + \sum(a\,X) + \varepsilon \qquad (1)$$

Where Y is the dependent variable, X is the vector of all independent variables, and ε is the residual. The standard errors are corrected for heteroscedasticity according to White (1980). The model has also been tested for multicollinearity with the variance inflation factors (VIF) (see e.g. Stine, 1995; Mansfield and Helms, 1982) and all variables display VIF values below 3, suggesting there is no concern of multicollinearity in the model.

4.4.3. Variables

4.4.3.1. Dependent variable

The central question permeating the two hypotheses in the current study is whether acquiring CEO deal experience materially affects acquisition returns. Following the literature on event studies, I use

the cumulative abnormal return around the announcement date in order to measure the short-run value creation (Brown and Warner, 1985), and the buy-and-hold returns adjusted for 25 Size-B/M portfolios in order to measure value creation during a longer period (see e.g Mitchell and Stafford, 2000). I use a 3-day window for CAR[48] and a 12-month window for BHAR.[49] Excess positive abnormal stock returns for the firm around the announcement could be interpreted as the impulsive investor approval of the overall management's acquisition plan. If CEO deal experience is important in shaping announcement CARs in any direction, it would suggest investors recognise the effect of CEO deal experience. As for the long-run returns, BHAR is expected to capture the better educated approach of investors, since more information is disseminated over a longer period of time. In other words, I expect to capture both the impulsive and well-informed investor reactions to the acquirer strategic move. The calculation of both variables is described below.

The cumulative abnormal returns are estimated in line with Brown and Warner's (1985) methodology. The first step in the estimating process is applying the market model as seen in equation (2), where $R_{i,t}$ is the return for security "i" at time "t", and $R_{M,t}$ is the return of the market at time t. The benchmark market is the equally-weighted CRSP index, which draws data on NYSE, NYSE MKT, NASDAQ, and NYSE Arca Exchanges. The estimation interval of the model spans over 255 trading days, finishing 46 days before the event date. The coefficients deriving from the estimation are used for the calculation of the expected return $E(R_{i,t})$. In the second step, the expected returns stemming from equation (2) are subtracted from the observed returns, as it is displayed in equation (3). The outcome is the excess return, i.e. abnormal return $AR_{i,t}$, of the stock over the expected returns for that day. In equation (4), the abnormal returns of three consecutive days are accumulated in order to create the cumulative abnormal return for the window (-1, +1), which is the CAR surrounding the acquisition announcement.

$$R_{i,t} = a_i + \beta_\iota R_{M,t} + \varepsilon_{i,t} \quad (2)$$

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) = R_{i,t} - (\bar{\alpha}_i + \beta_\iota R_{M,t}) \quad (3)$$

$$CAR_{i,(-1,+1)} = \sum_{-1}^{+1} AR_{i,t} \quad (4)$$

The second dependent variable serves the purpose of investigating the effect of CEO deal experience on long-run performance. The measure used is the 1-year monthly buy-and-hold abnormal returns

[48] The analysis provides qualitative similar results for multiple configurations of the event window. Untabulated analysis tests for the following CAR windows: (-5, +5), (-20, +1), (-30, +1), (-30, +30). The aforementioned windows have been used in the "experience-performance" literature (see e.g. Hayward, 2002), and also in the general literature of "wealth creation in acquisitions" literature (see e.g. Moeller et al., 2005).

[49] Most studies in acquisition learning literature have used daily CARs in order to investigate the effect of experience (see e.g. Haleblian and Finkelstein, 1999; Hayward, 2002) and long-run performance measures were used in complementary analysis (Billet and Qian, 2008).

(see e.g. Mitchell and Stafford, 2000; Fama and French, 1993; Bouwman et al., 2009). For each acquirer, I consider the raw returns for 12 months including the month of the announcement. I compound the returns as seen in equation (5). I do the same for the corresponding 25 Size-B/M equally weighted portfolio returns as seen in equation (6). Then, I subtract the compounded portfolio returns from the company's compounded returns in order to calculate the buy-and-hold returns as seen in equation (7). The portfolio Size and B/M thresholds and equally weighted returns are retrieved from Kenneth French's website.[50] I use the market capitalisation in the month before the acquisition and the previous year-end book value in order to match the companies to one of the 25 Size-B/M portfolios.

$$BHR_{(0,11),i} = [\prod_0^{11}(1 + R_i)] - 1 \quad (5)$$

$$BHR_{(0,11),Benchmark} = [\prod_0^{11}(1 + R_{Benchmark})] - 1 \quad (6)$$

$$BHAR_{(0,+11),i} = BHR_{(0,11),i} - BHR_{(0,11),Benchmark} \quad (7)$$

The following section offers information and insights on the variables used in the main analysis.

4.4.3.2. Independent variables – Deal Experience Variables

The current study bases the deal experience measures on the example set by previous studies (see e.g. Billet and Qian, 2008; Hayward, 2002). There are two main differences with previous studies. First, I focus on the CEO-specific deal experience instead of the company experience. Second, the measurement of experience regards the period leading to the appointment of the CEO in the respective firm. Thus, I account for the acquisition experience component that was considered by the Board of Directors when they hired the executive for the top position. The analysis is also conducted on deal experience metrics combining the pre- and post-appointment deal experience of the executives; the inferences of the study remain qualitatively the same.

The key experience metric, "Deal Experience", is the number of deals performed by the current CEO during the ten years before her appointment in the current firm. The deals considered are only the ones performed by the executive while holding a CEO position in previous places of employment. This measure provides a pure metric of CEO experience and allows for the study of CEO-specific indicators and company performance.

The duration of 10 years before and after the appointment represents a trade-off between two contrasting characteristics. First, the data availability regarding both prior CEO positions and deal-making is biased in favour of more recent and younger CEOs, as CEO databases are less curated before 1992.[51] Second, it is important to consider experience topical to the current state of the CEO.

[50] For more information see: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
[51] Execucomp provides data on S&P 1500 CEOs starting in 1992.

Deals performed far before the appointment may either offer obsolete experience or be irrelevant to the respective state of the executive. Similarly, deals performed far after the appointment are less likely to be affected by pre-hiring experience and more likely to be driven by the circumstances long after the appointment. One could follow this argument and narrow down the interval to fewer years. Nevertheless, a fine balance between availability of data and relevance of information suggests the decade of experience be the appropriate threshold.[52]

The CEO deal experience measures have been constructed with the respective hypotheses in mind. Hypothesis 1 predicts a positive relationship between the deal performance and the quantity of CEO deal experience at the time of her appointment. Therefore, the expectation is to observe a positive and statistically significant coefficient for the "Deal Experience" variable when regressing it against announcement CARs or BHARs. In other words, the higher the deal experience of the CEO at the time of the appointment, the more knowledgeable and skilful she will be in stirring the acquisition process in the right direction, thus improving the company outlook for investors.

Hypothesis 2 assumes a more particular effect of CEO deal experience, which originates in potential benefits of relevance between experience and the deal at hand. The relatedness regards similarities in the target industry, nation, public status or deal value. The variables "Deal Experience - Industry" reflects the number of deals in CEO's past which had targets in the same industry as the present target. Industry-related experience in has been reported to improve deal performance in the mid-term (Hayward, 2002). Furthermore, there are a number of studies suggesting the distinct effect of deal experience across industries, with higher acquirer company experience increasing the probability of entry barriers for new comers in e.g. the computer industry, but not the pharma industry (see e.g. Shimizu and Hitt, 2005; Li, 1995). The aforementioned studies portray industry-specific experience during acquisitions as a key source of value creation for acquirer shareholders. Similarly, I expect industry-related experience in the CEO deal activity to yield positive results for the current firm.

The variable "Deal Experience - Target Nation" counts the respective past deals which had the same target nation as the one in the deal at hand. The effect of cross-border acquisitions has been studied thoroughly (see e.g. Doukas and Travlos, 1988; Lee and Caves, 1998; Barkema et al., 1996; Gaur and Lu, 2007), though there is no consensus on whether the effect is uniformly dissimilar to local acquisitions. The premise leading to the construction of this variable is the country-specific intricacies which will be familiar to a relatedly experienced CEO. This argument holds even for the cases of local acquisitions, as there could be knowledge-intensive requirements related to the acquirer's local market.

[52] I have performed untabulated analysis with the alternative configuration of 5 years of deal experience before the CEO appointment, and inclusion of deals performed over a 5-year period after the appointment. The results have been qualitatively identical.

The variable "Deal Experience - Status" accounts for the number of deals in the CEO's past which had targets with same public status (public, private or subsidiary) with the target at hand. The literature on wealth creation during acquisitions is abundant with references to the target firm's public status (see e.g. Harford et al., 2012; Fuller et al., 2002). The academic consensus so far suggests private targets lead to higher acquirer performance than public targets. I consider public target status another source of valuable experience and I create a variable indicating the CEO's experience with targets with the current target's public status.

The fourth relevant experience variable "Deal Experience - Value" considers the number of deals performed by the CEO that are between -20% and +20% of the value of the current deal (all deals values transformed in 2015 dollar terms). [53] The size of the deal has been suggested to be an indicator of the integration complexity (Alexandridis et al., 2012), therefore CEOs with experience in similar-size acquisitions may have an edge during the post-mergers integration phase (see e.g. Uhlenbruck et al., 2006). The last variable of related experience, "Deal Experience – Any Similarity", counts the past deals with any similarities in the aforementioned four areas (industry, public status, nation, deal value) to the current deal.

In order to allow for comparison between the outcomes of this study and the extant literature (see e.g. Haleblian and Finkelstein, 1999; Billet and Qian, 2008), the analysis has also incorporated the order of the deal after the appointment as a potential factor of announcement CARs. The variable, "Deal Order", consists of the serial number of the deal after the appointment of the CEO, i.e. 1, 2, 3 etc. I also account for experience beyond the sole context of acquisitions. I include the number of years the CEO has served in CEO positions during the decade before her appointment. The maximum value of the variable is 10, as high as the number of years under inspection. There are several CEOs who have been reported to hold more than one CEO positions at a time, but in all cases the positions have been in subsidiary firms of a parent company. This variable is similar to the CEO experience variables used in the literature (see e.g. Bragaw and Misangyi, 2013).

4.4.3.3. Independent variables – Control Variables

Research in value creation during acquisitions has offered several contributing factors. Most of the control variables used in the regressions are standard in the literature, as they have been repeatedly used in peer-reviewed studies (see e.g. Fuller et al., 2002; Yim, 2013).

Cash acquisitions have been connected with positive signalling by the bidder, since the stock price of the bidder is undervalued (Travlos, 1987; Schwert, 1999). In order to account for the effect of cash deals on announcement CARs, I include a dummy variable that takes the value of 1 if the deal is 100% cash and 0 otherwise. Fuller et al. (2002) find lower bidder returns for acquisitions of public

[53] The results remain unchanged for various size-similarity brackets, ranging from +/-10% to +/-30%.

targets, and therefore I include a dummy variable taking the value of 1 if the target is a public firm. Bhagat et al. (2005) offer several potential factors on value creation as well. After studying the stand-alone and combined bidder-target value change around the announcement, they advise for higher bidder returns for hostile bids, and lower bidder returns for diversifying deals. Following their study, I employ two dummy variables indicating whether the acquisition is hostile and diversifying, respectively. Similarly, a dummy variable indicating whether the deal is a tender offer is included, following the study of Lang et al. (1989), who found positive returns for bidders during tender offer announcements.

Billet and Qian (2008) have indicated hubristic behaviour as a crucial factor leading to monotonically negative returns for consecutive acquisitions. In order to account for CEO hubris, I follow Malmendier and Tate (2008) and create a dummy variable indicating whether the CEO is hubristic or not. The dummy variable takes the value of 1 if the CEO has failed to exercise 67% in-the-money options at least twice in their tenure and 0 otherwise.

The model includes additional control variables regarding more fundamental information on companies. Moeller et al. (2004) suggest adverse bidder size effects on announcement CARs, and so size is accounted for with the use of Market Capitalisation of the bidder.[54] Alexandridis et al. (2013) follow up on Moeller et al. and show an adverse effect originating on the size of the target, which is also accounted for in the current study. Following the general literature on acquisitions and value creation (see e,g, Moeller et al., 2005, Fuller et al., 2002), I include several other fundamental control variables, such as market-to-book, leverage, ROA, and CAPEX. I also include CEO characteristics in regression analyses (see e.g. Yim, 2013), such as CEO age, tenure and whether the executive has been an insider before the appointment.

I have also used non-standard control variables, which regard the payment components of CEO compensation. Total payment, salary, bonus and equity-based compensation may have conflicting effects on acquisition performance. For instance, Cai and Vijh (2007) suggest overvalued acquirers with higher CEO ownership tend to perform more deals in an attempt to take advantage of the relative overvaluation. Thus, higher levels of equity compensation in the year before the deal may result in lower announcement returns (Shleifer and Vishny, 2003). Grinstein and Hribar (2004) highlight the non-significant connection between cash bonuses pertaining to acquisitions and the respective deal performance. In essence, the type and magnitude of compensation relate to the incentives literature,

[54] Descriptive statistics include Total Assets and Sales as alternative measures of size. The regression analysis has been performed with Total Assets and Sales. Untabulated results show that all types of bidder-size proxies lead to similar results.

connecting executive performance with performance-based compensation.[55] The extended definitions of all variables can be found in Appendix.

[55] Jensen and Meckling (1976) provide a theoretical approach on the incentive alignment capabilities of performance-based compensation (see also Smith and Stulz, 1985). Morgan and Poulsen (2001) provide empirical support for Jensen and Meckling's claims.

4.5. Results

4.5.1. Sample Characteristics and Descriptive Statistics

The targets in the 3,785 deals are divided into 957 public, 1,445 private and 1,383 subsidiary firms. The majority of targets are local to acquirers, as 2,974 are U.S. companies and the remaining 811 are overseas. Figure 4.1 provides information on the number and total value of deals per year. The columns show the number of deals per year, segmented by target public status, and the line shows the total annual deal value in 2015 $ billions. The patterns in the frequency and value of deals in Figure 4.1 are in accordance to the documented merger frequency (see e.g. Alexandridis et al., 2012). Specifically, the periods 1998-2000 and 2003-2007 display clustering of total deal value, the same periods when the 5th and 6th U.S. merger waves occurred. The highest total value of deals occurs in 1998, despite not being the year with the highest deal number. This is due to the several large-sized, "mega" deals during the inflation of the dot-com bubble.

Figure 4.2 displays the mean deal value per year. The trends of mean deal value seem to follow the pattern of total deal value in Figure 4.1. This can be attributed to the observed stagnation in deal activity after the 5th and 6th merger waves have been completed; acquirers lacked the liquidity and the stakeholder support to pursue large deals (see e.g. Harford, 1999, 2005).

This study uses CEO turnovers as reference points in measuring deal experience. Figure 4.3 shows the number of appointments per year. Heightened turnover activity can be identified in the years 2000, 2001, 2007 and 2008. Incidentally, these are the concluding years of the two recent U.S. merger waves, which were also accompanied by stock market crises. The sample is not as populated in the early and late years, because, first, Execucomp provided CEO data starting in 1992 and, second, if a company does not perform a deal after the CEO appointment, it will not be included in the sample.

[Insert Figures 4.1, 4.2, 4.3]

The breakdown of the firms and deals per industry for both targets and acquirers is provided in Table 4.2. I use the 10-industry classification provided in Kenneth French's website.[56] The highest concentration of acquirers and targets is in the industries of Business Development, and Manufacturing, with about half of all companies registering in one of the two industries. The same holds for same-industry deals, which have the acquirer and target being in the same industry.

[Insert Table 4.2]

Table 4.3 reports descriptive statistics for the sample. The table has been segmented into three panels, displaying information on deal, acquiring CEO, and acquirer characteristics. The information is also

[56]Details on the classification can be found here:
http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_10_ind_port.html

provided for various levels of pre-appointment CEO deal experience. Column (1) reports the statistics for the whole sample. Columns (2) and (3) display the sample statistics for CEOs without (3,538 deals) and with (247 deals) deal experience respectively. The sample of deals with experienced CEO is further segmented into two subsamples. Column (4) reports on deals where the CEO has 1 or 2 deals as experience (145 deals), and column (5) reports on deals, where the CEO has experience of more than 2 deals (102 deals). Columns (6) to (8) display the differences between the variable values among subgroups of experience, as well as the statistical significance of these differences based on T-tests on means and Wilcoxon tests on medians. Specifically, column (6) compares deals with experienced versus inexperienced CEOs; column (7) compares deals with highly experienced versus modestly experienced CEOs; column (8) compares deals with highly experienced versus inexperienced CEOs.

[Insert Table 4.3]

Panel A reports on the deals characteristics of the full and partitioned subsamples. The value of experienced-CEO deals are larger than the deals of the inexperienced CEOs, as the average deal is larger by $1.3 bil for the experienced executives. However, the median deal values are not statistically different among the subgroups, therefore the significant mean difference should be attributed to few sizeable deals performed by the experienced subgroup. The deal relative size figures do not display statistically significant discrepancies on either mean or median values, except for the median of highly experienced CEOs (4.58%) being less than their modestly experienced peers (6.85%) by 2.28%. Financing methods seem comparable among the subgroups, as 6%-8% and 35-43% of deals are fully financed with equity and cash respectively. About a quarter of deals among all subgroups have public targets, approximately the same percentage of diversifying deals in each sample. The only exception is the sample of modestly experienced CEOs, whose percentage of diversifying deals is 33.1%, marginally higher than their more experienced peers. Highly experienced CEOs perform slightly fewer tender offers (2.94%) compared to their inexperienced peers (6.36%). Highly experienced CEOs also perform fewer hostile bids, even though the concentration in the general sample is only 0.34%. Cross-border deals reflect about a fifth to a quarter of each sample without any notable difference among subsamples.

On average, deals are completed within 76 days after their announcement in the general sample, and, although there is no significant difference between experienced and inexperienced CEO, it appears that highly experienced CEOs consummate the deals at an average of 29 days faster than their modestly experienced peers. Serial acquirers show a strong presence across all subsamples, as they perform between 44% and 47% of deals. These figures are in accordance to literature, attributing a significant share of deal activity to the most frequent acquirers (see e.g. Golubov et al., 2015). The last statistic on deal characteristics regards the 4-week premium paid to the target shareholders, ranging between 36% and 44% across all subsamples.

Panel B of Table 4.3 displays statistics on CEO characteristics. CEOs in the general sample have had an average experience of 1.54 years in CEO positions before being appointed in the current firm. The figures are significantly higher for the experienced sample, with highly and slightly deal- experienced CEOs having spent 5.4 to 6.9 years in CEO positions. The differences are more striking for CEO-position experience in public firms: deal-inexperienced CEOs hold zero position experience as public-firm CEOs, while deal-experienced CEOs hold more than 3 years of experience in any of the subsamples. Highly experienced CEOs have more years of experience in both public and general CEO positions. These differences are not surprising, as CEOs with more time in prior CEO positions would have more time to perform acquisitions during their tenure.

Inexperienced CEOs have on average 4.44 years in their position when attempting the deal, while experienced CEOs have less than 4 years, down to 3 years for the highly experienced subsample. These differences, along with the slightly higher age of the experienced CEOs versus their peers, are suggestive of the more educated, even assertive approach of experienced CEOs when it comes to restructuring. Their significantly higher experience in deals, and on the job in general, equips them with knowledge and confidence towards the pursuit of deals sooner in the new job. This is apparent in the significantly higher percentage of experienced CEOs performing deals during the first year of their tenure (21.5% for all experienced, 23.5% for highly experienced) when compared to the inexperienced subsample (15.9%). Furthermore, inexperienced CEOs are significantly more likely to be top executives or members in the board of directors before their appointment when compared to their experienced peers (71.6% of versus 44.5%). This discrepancy could have a dual interpretation. First, insider CEOs are executives who have spent their better part of the decade before the appointment in non-CEO positions, therefore it would be impossible to have assumed deal experience according to the accepted definition. Second, the hiring of outsider CEOs could be stimulated not only by a need for fresh general knowledge and approach, but also the need for acquisition experience. The two explanations are not mutually exclusive and bear no absolute explanatory power over the observed statistics.

The next set of variables on CEO characteristics regard payment components. Experienced CEOs are generally, and usually significantly, paid more than inexperienced CEOs, though this may reflect the differences in the larger size of their companies, as can be seen in Panel C of Table 4.3. Company size has been reported to increase the level of CEO compensation (see e.g. Yim, 2013). The last variable in Panel B regards whether CEOs can be classified as hubristic according to Malmendier and Tate's (2008) measure. About a quarter to a third of CEOs display hubristic behaviour among the different subsamples, suggesting conventional measures do not label more experienced CEOs as more overconfident than their less experienced peers.

Panel C of Table 4.3 reports on acquirer characteristics. Differences in the means of statistics suggest that CEO deal experience puts executives at the lead position of larger firms. Market capitalisation of

30 days before the announcement, as well as the total assets and sales components of the previous fiscal year suggest immense differences in mean company size. Experienced CEOs lead firms which are on average larger by roughly $10.4 bil in market cap., $24.7 bil in total assets, and $7.0 bil in sales than inexperienced CEOs. However, the median values do not highlight significant differences in acquirer sizes, indicating the more accentuated size differences at the high end of the distributions. Differences in means show higher figures for experienced acquirers in capital expenditure, cash, net income, and total debt. Market-to-book ratio is approximately 3 for all subsamples, while performance ratios (ROA, Net Margin) are significantly lower for experienced CEOs. It also appears that experienced CEOs are more comfortable with assuming relatively more debt in their capital structure, as they have on average 37.3% leverage, about 4% higher than their inexperienced peers.

Overall, Table 4.3 attests to a few differences between experienced and inexperienced CEOs. The distinctive differences between the groups are not focused on deal characteristics and attitude, but mostly on the more sizeable nature of experienced-CEO acquirers, along with the superior job experience and compensation of the corresponding CEOs. Experienced CEOs tend to perform deals sooner in their tenure, especially during their first year on the new job. This observed behavioural pattern could be instigated by the knowledge and confidence they gained during their previous CEO experiences. An alternative, but not mutually exclusive explanation of this pattern could be the riskier attitude of experienced individuals, as it may be inferred by the higher leverage ratios in experienced-CEO firms. Nevertheless, the purpose of this study is not to construct a thorough personality profile of experienced CEOs, but identify the value of their experience to acquirer shareholders, as measured by short-term and long-term stock performance.

Table 4.4 shows the descriptive statistics of several stock performance indicators for the same subsamples presented in Table 4.3. The investigation of several CAR windows and the annual BHAR aims to capture the full spectrum of investor reactions towards the deal announcement, ranging from information leak during the run-up to more informed and composed reaction several days after the announcement. The mean and median performance measures for all subsamples are fairly close to zero, although CARs of different windows provide contrasting inferences. Short windows of 3 and 11 days show positive and significant announcement returns for the samples of all and inexperienced CEOs while the longer window of 61 days suggest a negative and significant abnormal return. The result on the shorter windows are in contrast with the literature, which has suggested zero or negative returns for acquirers (see e.g. Moeller et al., 2005; Andrade et al., 2001). I attribute this difference to sample discrepancies with previous studies. For instance, deals paid exclusively with stock in the current study are less than 8% for the whole sample, while previous studies have the respective figures up to 23% (Moeller et al., 2005) and 46% (Andrade et al., 2001). Equity consideration has been shown to have adverse results on acquirer performance (see e.g. Travlos, 1987), therefore this can be one of the reasons for the discrepancies in reported CAR. BHAR are negative and statistically

significant at both mean and median levels for all and inexperienced-CEO deals. As for the rest of the subsamples, deal experience does not seem to affect announcement or long run returns. A negative median BHAR of 5.08 is also not statistically significant from zero, indicating the high BHAR volatility within the highly experienced subsample.

[Insert Table 4.4]

The T-tests and Wilcoxon tests in columns (6) to (8) suggest no distinct performance relative to deal experience. This is an early indication contrary to the expectations in this study. However, the results in Table 4.4 do not account for several sources of wealth creation during acquisitions, as well as for the non-linear relationship between experience and performance, as it has been documented in the literature (see e.g. Hayward, 2002). A more refined analysis is provided in the next section, where a variety of factors and measures of experience is investigated.

Table 4.5 reports the correlation coefficients for the variables used in the study. High correlation coefficients, i.e. above 0.7 in absolute terms, are contained within sets of related variables, such as deal-experience measures, compensation components, and accounting variables. I follow the indications of the correlation matrix and, therefore, I do not include highly correlated variables in the regression models in order to avoid multicollinearity issues.

[Insert Table 4.5]

4.5.2. Regression Analysis

The descriptive statistics presented in the previous section provide evidence against this study's expectations: CEO deal experience from previous CEO positions seem to be unrelated to deal performance in the new firm. In order to perform a more rigorous analysis than the univariate T-tests and Wilcoxon Tests, I employ Ordinary Linear Square regressions. Specifically, I regress the announcement CARs (-1, +1) and BHARs (0, +11) against CEO deal experience measures and standard control variables. Table 4.6 shows regressions on CAR (-1, +1) with the intent to answer the aforementioned Hypothesis 1, i.e. whether general CEO deal experience affects the acquirer deal performance. The analysis has been performed for the full sample – in columns (1) to (4) - and the sub-sample of acquisitions performed by CEOs with prior experience in CEO positions – in columns (5) to (8).[57]

[Insert Table 4.6]

The experience measures are included in both level and square values; the squared component aims to identify non-linear relationships between experience and performance (Haleblian and Finkelstein,

[57] Most of the model variables have considered adjustment for industry average or conditions. Therefore, the inclusion of industry fixed effects would be excessive.

1999; Hayward, 2002). In all models the coefficients of Deal Experience and its squared term are statistically insignificant.[58] In models (2) and (6), I regress the same deal experience measures, along with control variables, against deal announcement performance. The insignificant effect of "Position Experience", i.e. the number of years spent as CEO before the appointment, is in accordance with some of the extant studies; CEO experience in past positions does not seem to affect company performance (see e.g. Bragaw and Misangyi, 2013). I have also included a variable counting the number of deals since the CEO's appointment, "Deal Order", and it also appears to be ineffective in explaining CAR performance.

Models (3) and (7) have a slightly different measure of deal experience: instead of having the pre-appointment CEO deal experience and the post-appointment deal order as separate variables, I combine them in order to create a variable named "CEO Deal Order." The latter measure accounts for a broader definition of CEO deal experience. The combined pre- and post-appointment experience displays statistically insignificant coefficients, suggesting a negligible effect of CEO deal experience on performance.

Models (4) and (8) are the same with (2) and (6) with the addition of the indicator of hubris in the control variables. Billet and Qian (2008) have attributed the negative effect of experience on performance to CEO overconfidence after incidents of positive deal performance in the past. Since the research structure of the current study is different than theirs, I control for overconfidence with a measure inspired by Malmendier and Tate (2008). The coefficient of the dummy variable is positive and significant, a counter-intuitive result according to the literature (Malmendier and Tate, 2008). Nevertheless, its inclusion does not seem to affect materially the coefficients of experience measures. The main inference from the analysis so far is that the quantity of general experience of the CEO is of no consequence when it comes to deal performance around the announcement. The null hypothesis corresponding to Hypothesis 1 has not been rejected in the context of short-term performance.

Overall, the inclusion of control variables improves the model's Goodness of Fit, as the Adjusted R-square measure improves from below 1% for the simple models to approximately 4.9% for the full sample and 5.4% for the seasoned-CEOs sample. Only few of the control variables in the sample display statistical significance. A positive and marginally significant effect is attributed to the acquirer's ROA in the full-sample regressions, but not in the models on seasoned-CEO samples. The relative value between the target and the acquirer has a positive and highly statistically significant effect on announcement CARs, but, again, only for the full-sample regressions. The coefficient and its significance are in accordance to the findings of Alexandridis et al. (2013). The "All cash" dummy variable is positive and statistically significant, verifying the documented effect of cash consideration on announcement returns (see e.g. Schwert, 1999; Yook, 2003). In the models using the whole

[58] The coefficients remain insignificant when I do not include the squared term of deal experience.

sample, the presence of only cash in the deal payment increase announcement returns by approximately 0.5%-0.6%. The equivalent effect for the sample of seasoned CEOs in columns (7) and (8) is of similar magnitude, but not statistically significant.

The status of the target company results in a distinct effect on announcement returns as well. I find a negative and significant CAR effect for acquisitions of public targets, as it is frequently reported in the literature (Chang, 1998; Draper and Paudyal, 2006; Fuller et al., 2002). The diversification dummy variable is statistically insignificant across all models, which stands in contrast to the literature (see e.g. Berger and Ofek, 1995; Lamont and Polk, 2001).[59]

The regressions on the subsamples displayed in columns (5) to (8) show slight differences with the models on the full sample. Specifically, the "Insider CEO dummy" variable, even though it is negative in both sample configurations, appears to be statistically significant only in the seasoned-CEOs subsample. The observed significance of the estimate suggests an adverse effect on the CEO's pre-appointment relationship only when she has experience on the position of the top executive. In addition, the market capitalisation variable becomes statistically significant with a negative effect on CARs in models (6) and (7), while the relative size variable loses its statistical significance.

The overall conclusion of Table 4.6 on the relationship between CEO experience and deal performance fails to identify the significant relationships reported in the literature. The announcement performance in the samples sample is not explained by either inappropriate generalisation (Haleblian and Finkelstein, 1999) or hubristic behaviour (Billet and Qian, 2008). The results, so far, are consistent with the studies reporting no effect of institutional deal experience on performance (see e.g. Kroll et al., 1997; Wright et al, 2002).

The analysis so far has attempted to shed light on Hypothesis 1, i.e. whether generic deal experience has a positive effect on acquisition performance. The results stemming from the OLS models do not indicate a significant relationship. The next step is to focus on related CEO deal experience and study its effects on performance.

Table 4.7 displays the regression results on the related CEO deal experience. Models (1) to (5) regard the full sample, and models (6) to (10) include the seasoned-CEOs sample. Models (1) and (6) review the effect of industry-related CEO experience.[60] Models (2) and (7) report on the effect of CEO experience on targets with similar public status as the present target. Models (3) and (8) report on the deals with CEO-experience on deals in the same target nation as the one at hand. Models (4) and (9) account for CEO experience in deals of similar size. Models (5) and (10) account for deal experience

[59] The diversification dummy variable becomes negative and statistically significant at 10% confidence level only for the full sample, when the industry classification is shifted to Fama-French 48 Industry Classification. I retain the results with the 10-industry classification, as the main variables are not affected by changes in industry classification.

[60] I have not included the variable on CEO overconfidence in Table 4.7 in order to avoid decreasing the sample size. Its inclusion does not affect inferences drawn by the deal experience coefficients and significance levels.

that is related to the present deal in any of the aforementioned elements. Despite the variety of measures, as well as the flexibility of allowing for any similarity, the specific experience measures collectively fail to affect announcement performance. The only exception is the squared term of "Deal experience – status", which shows marginal significance for the squared term. However, the level term is insignificant, and it remains insignificant when I remove the squared term in untabulated results. Under these circumstances, the marginal significance of the variable does not constitute strong evidence on the importance of such related experience. Hypothesis 2, i.e. the expectation of (positive) effects occasioned by related CEO deal experience (see e.g. Hayward, 2002), finds no support at this point.

[Insert Table 4.7]

Tables 6 and 7 have made apparent that the contribution of CEO deal experience during deal announcements is negligible at best; investors do not seem to take the CEO's experience into consideration when deciding to evaluate the strategic move and, subsequently, follow up on the their opinion by either selling or buying the company's stock. However, reliance on short-term measures of value creation does not come without caveats. Shareholder reaction around the announcement bears, at best, all publicly and privately available information about the deal, but lacks full insight on the actual factors that may affect the overall deal performance. It is possible that these factors are not revealed soon after the deal announcement, and only time will reveal the important deal specifications driving acquirer performance. Complementary, investors may have yet to identify the factors that seem to yield a significant effect on deals in the long-run. These factors, although elusive and obscure near the event date, will more likely be revealed when the initial hype accompanying the deal has settled, and when investor perception catches up with the developments pertaining to the deal.

In order to investigate whether deal experience indeed affects deal performance over and above the initial investor reaction, I run regressions on the 1-year Buy-and-Hold Abnormal returns. Table 4.8 shows the BHAR regressions on the full sample.[61] I have included regressions with the level term and the pair of level and squared terms separately in order to highlight the discrepancy between the assumptions of linear and non-linear effects.[62][63]

[Insert Table 4.8]

The results reveal a reality vastly different to the one inferred by CAR regressions. After controlling for an extensive array of control variables, general and related experience seems to affect the long-run

[61] In untabulated analysis, I perform the regressions on the seasoned CEO sample. The results show qualitatively identical patterns.

[62] The adjustment of the company annual returns is based on returns of Size-B/M portfolios. Arguably, the variables reflecting size and B/M may affect the inference drawn from the regression model. However, the results remain qualitatively identical after excluding the respective variables.

[63] The results remain qualitatively the same when the benchmark portfolios are value-weighted, instead of equally weighted.

performance of deals significantly. Specifically, general, target industry, target nation, and generally related experience variables have statistically significant coefficients for both level and squared terms. The level term coefficients are positive and of relatively high magnitude, while the ones for squared terms are negative and smaller in absolute terms, indicating an inverse U-shaped relationship between experience and performance. This pattern is similar to the one reported by Hayward (2002). The net effect of acquisition experience has impressive impact on the overall acquisition performance. For instance, for model (2), the aggregate effect of 4 deals in the CEO's pre-appointment record is a positive 6.966% effect on annual BHAR. In contrast, 8 deals of experience lead to an aggregate effect of -2.744%.

A noteworthy feature of Table 4.8 is the performance of the experience variable on similar deal value. The coefficients bear marginal statistical significance, and we can attribute the results to the low number of occasions in the sample, i.e. only 38 deals, out of which 33 occasions have a value of 1 and 5 cases have a value of 2; the latter 5 observations do not have data on the hubristic CEO indicator, therefore I had to exclude it in order to show the effect of the square term. Overall, due to lack of variation in the value of similar deals, the inferences from the specific regression are not generalizable.

Regarding the rest of the analysis, it is important to note the immensely disparate inferences drawn when only the level term is included versus when the squared term is included as well. In the respective models including general, target industry, target nation, and generally related experience measures, the level terms on their own show negative and significant effects, a pattern consistent with the overconfidence explanation provided by Billet and Qian (2008). However, when the squared term is included, the relationship transforms to an inverse U-shaped pattern, which contributes to the explanation of performance as can be seen by the increases in adj. R^2.

Hayward (2002) suggested that the inverse U-shaped relationship can be explained by the opportunities the company misses after deciding to focus almost exclusive on targets of a single industry and becoming incapable of detecting opportunities in other industries. In Table 4.8, similar inverse U-shaped patterns are observed not only for related experience (industry, nation, general similarity), but also for general CEO deal experience. However, Hayward was referring to organisational focus on a single industry; whether the CEO follows the pre-turnover strategic path or not does not relate to the reason higher CEO deal experience in related deal attributes leads to exponentially adverse results. Therefore, Hayward's (2002) framework is inadequate in collectively explaining the patterns presented in this study.

The theoretical framework of CEO overconfidence explains my results in more appropriate fashion. Similarly to Billet and Qian (2008), I find that a linear approach of the relationship between experience and performance points to monotonically decreasing performance as organisation

experience increases. However, when I include the squared term of the respective experience component, the relationship becomes non-monotonic, showing beneficial effects of low-magnitude experience, with the exception of target status related experience. The pattern is in accordance to arguments of overconfidence. CEOs are less likely to become overconfident in deal-making after consummating only few deals. However, after assuming a lot of experience, either general or related, their performance drops by accelerating steps. Higher experience had led them to perform deals that are increasingly value-destroying in the year following the acquisitions. This is an indicator of CEO behaviour on issues such as integration and other developments that cannot be foreseen near the announcement date.[64] The positive and significant coefficient of the overconfidence indicator is opposite to the finding of Malmendier and Tate (2008), which could be attributed to sampling differences, such as the type of firms and the time period studied.[65]

The current study extends the inferences of Billet and Qian (2008) to CEO-specific deal experience, suggesting that overconfidence becomes value-destroying when experience has surpassed an inflection point. Before that threshold is reached, deal experience bears impressive advantages for acquirer shareholders. These outcomes manifest over and above the CEO's experience in past CEO positions and within the acquiring firm. In the next section I discuss the implications and limitations of the current study.

Furthermore, the fact that the inverse U-shaped relationship persists despite the inclusion of the hubristic CEO variable is suggestive of the different shades of overconfidence permeating CEOs. Malmendier and Tate (2008) created the hubristic indicator having in mind that CEOs believe they can perform better than their peers, which comprise the target management in the context of acquisitions. In the current study, the observed hubristic behaviour is more likely to be attributed to the increasing confidence of CEOs in their existing knowledge to substitute their lack of effort; the existence and benefits of effort can be observed in cases where the CEOs have not assumed enough experience to turn confident in their track record.

[64] BHARs are estimated starting the month of the deal announcement. As the average time to completion is less than 3 months on average, BHAR spans over a period of about 7 months after the average deal has been completed.

[65] Malmendier and Tate (2008) study the period 1980-1994, which has minor overlap with the period 1990-2014 investigated in the current study.

4.6. Discussion and Limitations

4.6.1. Discussion and Implications

The current study offers support to contrasting arguments in the literature of deal experience and performance. The inverse U-shaped relationship in general and related experience is in accordance with the explanation of overconfidence leading to value-destroying acquisitions (Billet and Qian, 2008), but the positive segment of the relationship supports the argument that experience indeed benefits acquirers (Fowler and Schmidt, 1989). It is important to note that most studies in the literature have focused on firm-specific experience, while the current study focuses on CEO experience at the time of the appointment. A corollary of this distinction suggests that the benefits of experience and the harm of overconfidence are not only developed during the previous tenures of the incumbent CEO, but they can also be imported to the firm during managerial shifts. This finding bears implications for the fiduciary function of the board as agents of shareholders and monitors of upper management. CEOs who have accumulated plenty of deal experience before the appointment may not necessarily destroy value during deals in the new firm, but they are statistically more likely to display reckless or hubristic behaviour, which could hurt shareholder wealth. Directors must be cautious of the connection between prior experience and subsequent deal performance not only during the hiring process, but also in the design of performance incentives, and the screening process of major investments such as acquisitions.

The finding of the inverse U-shaped relationship also contributes to the academic strand suggesting CEO style and attributes are critical for corporate performance (see e.g. Bertrand and Schoar, 2003; Weisbach, 1995). CEO experience in past positions has been shown to improve performance in the new firm (Alexandridis et al., 2015) and, now, we know that deal experience in modest quantity can be an asset for an incoming CEO. Even in the cases of CEO overconfidence due to excessive deal experience, the adverse outcome is still a testimony to the importance of CEOs in affecting stock performance.

A surprising finding in the current study is the lack of experience effects around the announcement, while the annual performance of the firm is significantly affected by the CEO's deal record. The arguments of market efficiency (Fama, 1965, 1998) suggest that all publicly or privately available information should be incorporated in company share prices. However, the current study shows that the effect of experience has been affecting the 1-year stock performance for the period of 1990-2012, and investors have yet to adjust their reaction to the CEO's past experience. A simple explanation on this discrepancy is found in the nature of the experience measurement: investors, similar to academics, may focus on the recent past of the CEO than the aggregate career path, as well as on past

performance than the quantity of experience. My expectation is for the market to eventually identify this CEO attribute as a source of risk and incorporate it in their deal announcement reactions.

4.6.2. Limitations

The research structure of this study allowed for a refined and more focused investigation of the relationship between experience and performance. Nevertheless, there are several aspects of the research structure which may prohibit the advancement of its inferences into a solid and generalizable theory. These restrictions appear mostly in the implicit assumptions of the study.

First, there are certain criteria which allowed for acquisition experience to be registered for each CEO. For instance, her experience must have been gained while she held a CEO position before her appointment in the current firm. The underlying assumption in this definition is that only executives holding the position of the CEO gain experience from acquisitions. Similarly, I have implicitly assumed that only CEOs are able to offer their insight on deals during acquisitions. Consequently, the current study is based on the premise that, on behalf of top management, only CEO experience and input may affect deal performance. It could justifiably be argued that this approach underestimates the experiential and learning capabilities of non-CEO executives, as well as their contribution during acquisitions. It would not be an exaggeration to assume that all top executives participating in deals gain experience, and that these executives will be able to apply the acquired lessons for the benefit of their firm. Thus, seasoned and well-informed investors may consider not only the head of the firm, but also the top executives who will contribute to strategic planning and implement the tactical decisions in a deal. The experience proxies used in the current study cannot capture the investors' view on the top management team as a whole. It could be argued that a set of aggregate measures on managerial experience will offer an enriched view on the experience-performance relationship.

Taking this argument a step further, an ideal framework would also consider the experience held by the members of the board of directors. The chairman and directors of S&P 1500 firms are usually experienced in CEO or top executive positions in other prominent corporations. Their collective knowledge could be an asset to the CEO during the acquisition design and deliberations. Unfortunately, the consideration of both top management and director experience is constrained by data availability.

In detail, during the manual collection of data for CEOs, I realised that the search for non-CEO executive and director experience proves severely problematic from several standpoints. The most apparent obstacle stems from data accessibility. The online sources of information do not offer a historical account on the job experience for most top executives and directors. The databases used for this study (EDGAR, Bloomberg BusinessWeek, LinkedIn.com, nndb.com) are adequately detailed on executives that have held a CEO position in the past, and they are much less informative on the career

records of other executives. Thus, we cannot come to trust the currently available evidence on non-CEO executives or directors held on these databases due to inconsistent depth of information.

Career data availability is not the only concern. Even if the data were available, we would not be able to know the extent and quality of experience gained by each executive or director in a particular deal. It would be a logical jump to assume that more experienced and proven executives are more engaged in deals. Acquisitions may lead to shifts in power or budgetary allocations among divisions, thus powerful, self-serving executives may have personal incentives to impair the deal. Even if we were to ignore the crippling effect of internal corporate politics, we have to accept the fact that the company depends on undisturbed operations even during deal negotiations. Therefore, some of the executives will shoulder more responsibility of running the acquiring firm, while the rest of the executive team is occupied with pursuing the deal. In that case, we could assume that the people with increased administrative responsibilities do not gain as much of acquisition experience as their more engaged colleagues, which adds more obscurity to how much deal experience is gained or how much of the pre-existing experience is utilised by the management team during deals. In other words, even if we had information about the job positions of non-CEO executives during acquisitions of previous places of employment, we would not be able to systematically identify whose experience increased or mattered during the event.

The restrictions on data availability, as well as the uncertainty on who actually learns or contributes to the process, force the research framework to focus on the single person who is supposed to be fully committed to significant investments, and that is the CEO.

An additional limitation in this study originates in the various definitions of deal experience. The core measure of experience is the number of deals performed by the CEO when working in previous CEO positions within a decade before the appointment in the acquiring firm. I have accounted for general and related deal experience by counting all or related deals in the CEO's past, respectively. Nevertheless, these metrics focus on the quantity of experience, ignoring the critical issue of performance and the quality of learning. We would expect that investors would react more positively to acquisitions performed by CEOs with a track record of positive performance. Regrettably, only 61 deals in my sample have CEOs with prior deal experience in public acquirers, and thus historical information of past acquisition performance. A regression model aspiring to capture the importance of past performance on current announcement CARs would include only deals with public-acquirer-experienced CEOs, thus the model, in the current study, would be supported by a rather limited sample. An alternative solution would be to include the experience CEOs obtained even after their appointment in the respective S&P 1500 firm, but this would impede the distinctive advantage of this study, which is the disentanglement of organisational and CEO-specific experience.

Another restriction transpires from the definitions of experience relatedness. In the specifications of related deal experience, I have considered target industry, public status, nation, and deal value. This list of potential similarities cannot be considered exhaustive, as firms are defined by more than just these characteristics. For instance, CEOs with experience in hostile deals could have an advantage when pursuing hostile deals in their new firm. Unfortunately, the full sample used in this study includes only 13 hostile deals, since the number of such deals has declined in the U.S. after the 4th merger wave in the late 1980s (see e.g. Martynova and Renneboog, 2008). The friendliness of the acquisition bid is only one of many potential sources of experience relevance. Additional research and data are needed in order to identify other references of experience relevance that could lead to better prediction of announcement CARs.

4.7. Conclusion

In this chapter I have employed a comprehensive set of deal experience metrics in order identify the effects of acquiring CEO experience on company performance. I isolate CEO-specific from organisational deal experience and I create measures of general and related deal experience. All CEO deal experience measures prove to be unrelated to deal announcement performance for the acquirer, but the effects on 1-year BHAR returns follow an inverse U-shaped pattern. This suggests the inability of investors to identify the non-linear effect experience has on company performance after the initial hype of the announcement settles. The outcome in the current study suggests that deal experience in the CEO's record has positive effects when the quantity of experience is modest, while high magnitude order of deal experience tends to turn the CEOs hubristic. This is in partial agreement with existing literature, which suggests positive effects of deal experience (Fowler and Schmidt, 1989) and adverse effects of deal experience due to overconfidence (Billet and Qian, 2008).

5. Smart Mega Deals: Value Creation on a Massive Scale[66]

5.1. Introduction

One of the most stylized facts in the corporate finance literature is that mergers and acquisitions (M&As) tend to destroy value for acquiring firm shareholders more often than they create. During the previous two decades this empirical observation has been recurrently highlighted by the business press as well as market and academic research.[67] This tendency of M&As to fail is more accentuated among large acquisitions with a number of recent studies pointing out that "mega-deals" priced over $500mil or $1bil end up costing shareholders since they tend to destroy value on a significant scale.[68] A plethora of sizeable mergers and acquisitions, from the frequently quoted landmark deals of AOL-Time Warner, Daimler- Chrysler and HP-Compaq to more recent ones such as Rio-Tinto-Alcan, Bank of America-Countrywide, *eBay- Skype and Kmart-Sears to name a few,* have all been branded as failures since they have resulted in sizeable write-offs and shareholder losses.

Several explanations have been put forward for why large deals fail to pay off more frequently, with the most prevalent ones being overpayment (Loderer and Martin, 1990) emanating from hefty private benefits (Jensen, 1986, Grinstein and Hribar, 2004; Harford and Li, 2007) or adverse managerial traits such us overestimation of the top executives' ability to extract acquisition gains (Roll, 1986; Malmendier and Tate, 2008) and integration complexity, including cultural incompatibility, which can hamper post-merger integration (Shrivastava, 1986; Hayward, 2002; Ahern, 2010; Alexandridis et al. 2013).[69] Considering that large M&A deals are typically subject to extensive publicity and investor scrutiny, and that their high failure likelihood and associated challenges have been so extensively documented and deliberated, it is undeniably surprising that they still fail to create shareholder value at such rate and that top executives and corporate boards get it wrong so often. Notwithstanding the historical tendency of large deals to end up in disaster, there is good reason to believe that value creation in M&As has recently reached a pivotal milestone.

[66] This chapter draws heavily from a working paper with George Alexandridis and Nickolaos Travlos.

[67] See for example Mueller (1997), Andrade, Mitchell and Stafford (2001), Damodaran (2005), Bruner (2002), Moeller et al. (2005), Boston Consulting Group (2007), Betton et al. (2008), among others.

[68] A report by the Boston Consulting Group (2007) shows that "mega-deals" with a value of more than $1 billion destroy nearly twice as much value as smaller deals, while BusinessWeek (2002) reports that 61% of merger deals worth at least $500 million end up costing shareholders. In a more recent study McKinsey (2012) finds that only large deals are on average subject to negative abnormal returns, especially among faster growing sectors. The Financial Times (2015) also posit that expensive mega-deals are damaging for everyone, except for top executives and financial advisors. Alexandridis et.al (2013) report a striking $518 mil loss for acquiring shareholders in the average large deal between 1990 and 2007.

[69] Given the well documented adverse effects of acquirer size on acquisition gains (Moeller et al., 2004), it is also possible that sizeable deals are less likely to succeed merely because they are carried out by larger acquiring companies.

One of the consequences of the worst financial crisis in recent history is that it put internal control mechanisms, corporate cultures, executive compensation, and risk management processes on the spotlight (see e.g. Gupta and Leech, 2015; Ittner and Keusch, 2015). Accordingly, its aftermath has seen an unprecedented regulatory overhaul, a surge in shareholder activism and litigation cases, as well as government-driven reform efforts, initially focused on financial institutions, fuelling revisions targeted at all listed U.S. companies.[70] In addition, the on-going evolution in corporate governance in the post-financial crisis era is not merely confined to mandatory reforms but characterised by a more pervasive shift towards the voluntary adoption of practices (e.g. more efficient incentive structures, greater director specialisation and diversity, increased emphasis on the risks associated with strategic goals, the rise of "stakeholder democracy", and information technology governance) that aim to enhance the value creation mechanism and convey more confidence to the public. Such extraordinary developments have the potential to positively influence the quality of corporate investment decision making associated with inorganic growth and, in particular, the strategic selection, synergy justification, deal implementation, and post-merger integration processes, implying the need for a thorough investigation of acquisition investments post-2009. Since mega-merger deals have been responsible for massive-scale value destruction for shareholders in the past, they should have been especially affected by this new environment, making them a natural starting point for our examination.

To that end, we study the characteristics and performance of M&As during this previously unexplored recent period and draw important comparisons with the two decades of the 90s and 00s. Our primary focus is on a sample of 3,150 completed M&A deals valued at least $500mil (henceforth "mega-deals") and carried out by U.S. acquiring firms between 1990 and 2015.[71] During the last 25 years mega-deals comprised more than 85% of the total US M&A market value. Mega-deal activity remained upbeat during the post-financial crisis recovery with a new wave of deals emerging after 2009 and peaking in 2015, a landmark year for U.S and global M&A deal volumes.[72] Such mega-deals represent the bulk of corporate investment and are an important part of the economy (more than 5% of U.S. GDP in 2015). From 2010 through 2015 U.S. acquirers announced 783 mega-deals valued at $2.71tril, more than during the 6th merger wave of 2003-2007 documented by Alexandridis et al (2013).

[70] The Dodd-Frank reform act that passed in 2010, although aimed primarily at financial institutions, it also enhanced the effectiveness of monitoring and governance systems for all U.S. listed companies by introducing new mandatory disclosure rules, fine-tuning executive compensation, granting more powers to shareholders and bolstering the accountability of executives and directors.

[71] The mega-deal classification was motivated by the fact that the breakpoint for the top deal value decile of all US M&As during our sample period is around $500mil. It also does not affect the direction of our results or main conclusions which are similar when the mega-deal threshold is set to $750 mil., $1bil. or higher although this reduces our sample accordingly.

[72] According to Deloitte, M&A Index 2016 and the WSJ-Dealogic Investment Banking Scorecard the value of global and U.S. M&As surpassed $4 tril. and $2 tril respectively, the highest on record since at least 2007.

Our findings point to striking changes in deal attributes and quality during the most recent period. Most notably, acquiring firms create discernible shareholder value through mega-deals post-2009 for the first time. Overall, they generate gains of $42 bil or 2.5 cents per dollar spent around the acquisition announcement, while they lost $530 bil or 13 cents per dollar spent during the previous decade. This corresponds to a $62.3 mil gain to acquiring shareholders in the typical deal, a $325 mil improvement relative to pre-2010. The average acquirer was subject to an abnormal return of 2.54% around the acquisition announcement. Compared to an average loss of -0.36% recorded from 1990 through 2009, this represents an extraordinary improvement. A compelling 62% of large deals are associated with positive acquirer abnormal returns compared to only 45% in the previous decade and 49% during the 90s. By any measure acquiring firms create more value for their shareholders during the most recent period and the differences are both economically and statistically significant. A number of common firm, deal, and market characteristics identified by previous research as pivotal acquisition-gain determinants could be driving the recent upturn in acquisition performance.

First, less than 40% of mega-deals involve a listed target compared to 54% in the 00s and 62% in the 90s. This reflects a tendency for more large private deals which have been historically associated with higher acquirer returns (e.g. Fuller et al. 2002; Moeller et al. 2004; Faccio et al. 2006). However, large deals involving private targets and carried out during 2010-15 exhibit a small (0.67%), though statistically insignificant, improvement in acquirer gains. Instead, the bulk of the documented increase in acquirer returns post-2009 is attributed to the sub-set of listed target acquisitions; they are subject to positive abnormal returns (2.01%) and outperform those in the previous decade by a resounding 5%. Public deals also generate similar gains to private ones, contradicting conventional wisdom that acquiring unlisted targets yields higher returns. Moreover, the overall synergistic gains have improved dramatically - more than five-fold– during the most recent period, with the average deal being subject to a 4.92% or $542 mil combined gain for acquiring and target companies; to our knowledge the highest ever documented by any previous U.S. study. We also find that along with being able to piece together deals with superior strategic fit, manifested in significantly higher synergy gains, acquiring firms have managed to capture more of this added value for their own shareholders than before. Studying a sample of 21,222 transactions valued below $500 mil for comparison also reveals improvements - albeit less pronounced - in acquirer and synergy gains post-2009 for the sub-set of public acquisitions. Conversely, small private deals consummated between 2010 and 2015 fare no better for acquiring shareholders. This additional analysis advocates that the documented upturn in acquisition performance is not confined only to mega-deals but it applies to all public acquisitions, a deal type primarily linked to large scale losses for acquiring shareholders by existing literature, and where a great deal of reputational exposure for firms, top executives, and the board of directors is at stake.

Second, acquirers have steered clear from equity financing with only 5.5% of large acquisitions (12% in public deals) being paid entirely with stock and less than 15% of the average offer value being equity consideration. This comes in stark contrast to the previous two decades where the practice of employing stock financing was notably more widespread. Since the equity issues encapsulated in stock offers have been linked to overvaluation signalling (Travlos, 1987) and the agency costs of overvalued equity (Jensen 2005), the dearth of stock-financed deals, coupled with the more extensive use of cash offers capitalising on cheap borrowing post-financial crisis, may have induced more positive acquirer returns. However, acquisition gain differences remain robust after controlling for the medium of exchange. In particular, public deals financed entirely with cash generate positive and statistically significant returns (2.15%) for acquiring companies while those paid only with equity, although only 29, were also subject to positive abnormal returns (1.01%). Again, this is the first time that a study documents non-value-destroying stock-for-stock deals for acquirers for a sample of U.S. acquisitions.

Third, the 2010-2015 period is characterised by a strong bull-market rally (the S&P500 recorded all an all-time high in 2015) while the 90s and 00s decades encompassed both high and low market valuation periods. Since booming markets have been linked to superior acquisition returns (Bouwman et al. 2009) the documented improvement may be merely a manifestation of our sample split. Yet, the superior returns in the most recent period persist after accounting for aggregate market valuations; the significant differentials remain when comparing the recent period with other high valuation periods that coincide with merger wave peaks such as 1998-99 and 2005-2007.

Controlling for a number of additional acquirer-return determinants, as well as industry and company fixed effects, acquiring firms completing mega-deals consummated in 2010-2015 still outperform those in previous periods by a thumping 2.40%, while the associated synergy gains are around 2.00% higher. Propensity score matching (PSM) pairing acquiring firms post-2009 with their pre-2010 counterparts based on a number of deal characteristics also corroborates the large divergence in inter-period deal performance.

Since mega-deals tend to attract media attention, they can take on an artificial lustre driving up the share-price of acquiring companies without good reason, especially during a period of sizeable stock market appreciation. Nonetheless, large scale transactions come with significant implementation challenges that often emerge long after the initial hype, having a protracted impact on the value of the acquiring company. To address this, we also examine acquirer returns over longer term windows subject to data availability for the latter part of our sample. We find that the large return differential documented for post-2009 deals persists up to at least 30 days following the acquisition announcement and in fact further increases, indicating that the documented value creation is unlikely to be due to short-term market overreaction. Moreover, one-year post-acquisition buy-and-hold and calendar time portfolios' alphas during the most recent period are also positive and statistically

significant compared to negative in the previous decades. The superior long-run performance of acquirers post-2009 is indicative of more enduring value creation that might stem from possible improvements in deal implementation and integration practices post-2009 in addition to superior acquisition decisions.

Our results are consistent with a recent structural shift in the quality and drivers of M&A deals and point to value creation from large M&As on a massive scale, contradicting the status quo that such type of acquisitions destroy value more often than they create. A number of indicators suggest that this remarkable improvement in acquisition quality is concurrent to a more general change in the investment behaviour of firms and corporate executives. A measure of CEO over-optimism based on executive stock options exercise in acquiring firms, which has previously been associated with value-destroying acquisition investments (Malmendier and Tate, 2008), indicates that hubristic behaviour has diminished dramatically during the last few years. The fundamental change in M&A drivers and motives, as well as how top executives view acquisitions, is also evident from the fact that synergistic benefits are quoted by acquirers as part of M&A announcements more than twice as often relative to the past. Finally, a measure of overall investment efficiency that takes into account acquisitions, CAPEX, R&D, and asset disposals based on Richardson (2006) shows that the extent of over- and under-investment has significantly receded post-2009. This implies that corporate decision makers have aimed towards more optimal investment allocation in recent years, which bonds well with our main findings on value creation from M&As.

The fact that the documented improvement in corporate investment behaviour and quality occurred in the aftermath of the worse financial crisis since 1929 implies that our results are most likely triggered by this hefty shock. Ensuing changes at the corporate internal control and monitoring levels in response to the emerging more shareholder-centric environment deserve special attention. Although some anecdotally reported developments (e.g. greater focus on director specialisation and experience, strategic risk management, and value creation) are not directly quantifiable due to the limited availability of information at the firm level, we consider the impact of more conventional dimensions of corporate governance that are likely to capture any broad trend for change.

We document surges in acquiring companies' board independence, the ownership of independent directors and equity based compensation of their top executives, along with a decline in anti-takeover provisions since the previous decade. To investigate whether the superior gains post-2009 can be attributed to improvements in the quality of corporate governance we isolate its exogenous pre-to-post financial crisis variation, by utilising a two-stage instrumental variable approach. The evidence is consistent with the conjecture that our 2010-15 time indicator is a strong predictor of changes in corporate governance, which, in turn, can explain acquirer returns. Thus, developments in observable dimensions of corporate governance appear to play a pivotal role in the improvement of acquisition quality. It is therefore possible that the documented developments at the corporate board level have

fostered more accountability and restraint in the executive suite, leading to superior acquisition decisions that deliver larger synergistic benefits and also cater for more of the gains to be channelled to acquiring shareholders. Yet, concluding unreservedly that better refined governance systems singlehandedly drive the recent upsurge in M&A gains would be possibly arbitrary since our time indicator can in practice capture other shockwaves of the crisis, such as changes in the psychology of corporate leaders due to a sense of enhanced visibility that might reinforce restraint, expedite learning from prior mistakes, and foster a focus towards value creation.[73]

Our study marks a milestone for research on mergers and acquisitions, as well as the effects of the 2008 financial crisis on corporate decision making. The documented findings pose a challenge to the status quo in the acquisition gains literature and are consistent with a structural shift in the quality and efficacy of corporate investment, manifested in M&A decisions that deliver higher returns to shareholders than ever before. From the seminal work of Travlos (1987) and Loderer and Martin (1990) to the more recent evidence provided by Fuller et al. (2002), Moeller et al. (2004, 2005), Betton, et al. (2008) and Alexandridis et al. (2013), the general consensus has been that public acquisitions, and particularly large ones, destroyed value for acquiring shareholders more often than they created for more than 30 years. Our work brings to light for the first time that this trend may have come to an end and that acquiring firms consummating public acquisitions more recently increase shareholder value on a ubiquitous scale, in accordance with the predictions of the neoclassical theory of M&As (Ahern and Weston, 2007).[74] Moreover, to the extent that the documented improvement in acquisition gains is associated with the recent developments in internal control mechanisms, our study offers significant contribution to existing literature on the quality-enhancing role of corporate governance in acquisition decisions (Masulis et al. 2007; Golubov, et al. 2016). To the best of our knowledge, it is also the first to provide evidence of the consequences of the 2008 financial crisis on corporate investments, which leads up to a broader intuition; large-scale financial shocks can ultimately have favourable ripple effects on focal aspects of corporate decision making, bolstering the value creation mechanism. The latter notion is consistent to the stylised argument on the benefits of "creative destruction" (Schumpeter, 1942), which highlights the ability of modern economic systems to reconfigure themselves via extraordinary events, so that value-destroying ventures and practises are abandoned in favour of novel, wealth-increasing ones.

[73] It is important to note that although we also observe improvements (albeit of lesser magnitude) in conventional corporate governance variables between the 90s and 00s decades, acquisition returns did not improve to in this case. This might suggest that either governance has more recently reached a certain focal threshold beyond which it makes more of a difference or that there are concurrent changes in other dimensions of governance not captured by our conventional measures or in forces entirely unrelated to it that drive our results.

[74] Along similar lines, some recent studies have also found evidence pointing to significant net economic benefits from M&As using non- traditional measures of value improvement (see Bhagat et al, 2005 and Humphery-Jenner et al, 2016).

The rest of the paper is organised as follows. Section 2 describes the data used and sample statistics. Section 3 reports the main empirical results. Finally, section 4 concludes the paper.

5.2. Data and Summary Statistics

The sample of mergers and acquisitions is from Thomson SDC and includes completed and withdrawn deals announced between 1990 and 2015. We exclude repurchases, recapitalisations, self-tenders, and exchange offers, acquisitions of remaining interest, minority stake purchases and intra-corporate restructurings.[75] Deals have an inflation adjusted value of at least $5 mil in 2015 dollar terms, the transaction relative size is at least 1% and the acquirer owns no more than 20% of the target prior to the acquisition announcement and seeks to end up with more than 50% following completion. Acquiring firms are U.S. companies listed in NYSE, AMEX, or NASDAQ with data on CRSP. Targets are public or private firms. There are 26,076 deals that satisfy these criteria, out of which 3,604 were worth $500mil or more and are classified as mega-deals.[76]

Table 5.1 and Figure 5.1 show the distribution of deals over time. Mega-deals comprise more than 85% of the total dollar value spent for M&As by U.S. acquirers during the last 26 years ($14.6 tril) and 94% in 2015 ($946.3 mil). Mega-deal activity decelerated in 2008 as a result of the financial crisis that brought the sixth merger wave to an end (see Alexandridis, et. al 2012) but recovered again in 2010 and has remained upbeat until at least 2015, which is the last year in our sample. The value of mega deals announced in 2015 reached $891 bil, which is only comparable to M&A activity during the peak of the fifth merger wave in 1998-2000. Annual mega-deal activity during 2010-2015 was generally similar to that recorded during the previous merger wave. To the contrary, both the number and value of smaller deals (Rest of Deals) for each year during the same period were consistently below the levels seen in the 2000s. This indicates a tendency towards larger acquisitions during the most recent period. Among them, a number of prominent transactions such as AT&Ts $48.1 bil acquisition of Direct TV, the $25 bil Kinder Morgan and El Paso deal as well as the $22 bil Facebook-WhatsApp acquisition (See Appendix 2).

The analysis in the paper is based on a sample split in three sub-periods; the 90s decade, the millennia decade, and the most recent and yet unexplored 2010-2015 period. This partition is prompted by the fact that the fifth and sixth merger waves took place during the 90s and 00s respectively while the latter came to an end as a result of the financial crisis in 2008-09. The post-2009 period thus encompasses the recovery in the M&A market documented in Figure 5.1. Alternative untabulated sample specifications or partitions (e.g. comparing 2010-15 with other high market valuation periods

[75] As part of the intra-corporate restructuring exclusion, we omit transactions where the acquirer and target have the same name or ultimate parent.

[76] The criteria are different from Chapters 3 and 4 in order to facilitate the special requirements of this chapter. The deal-value threshold has increased in order to include larger deals, mainly in order to avoid confounding the "Rest of deals" results with unaccounted size effects. Also, the ownership criteria have been relaxed in order to allow for market-expectant deals. The results are similar with the sampling criteria of Chapters 3 and 4.

such as 1998-99 and 2005-07 or including year 2009 in the most recent period) are also explored for robustness and do not alter our main results and conclusions.

[Insert Table 5.1 and Figure 5.1 here]

Table 5.2 reports the distribution of deals by period and the target's business sector based on the Fama and French 12-industry classification. Although the differentials in the sectorial composition of targets between the three periods appear to be generally trivial in most cases, some patterns stand out. The share of financial mega-deals has declined through time, down to 10.1% in 2010-15 from 21.1% in the 90s. Since acquisition activity within a given sector tends to respond to industry specific shocks (Harford, 2005) or growth opportunities (Jovanovic and Rousseau, 2002), the outbreak of the financial crisis in 2008 can explain this pattern; the extensive losses incurred by financial institutions put a halt on significant investment projects. To the contrary, acquisition activity in the finance sector among smaller deals does not appear to have been affected. Another noteworthy change is the increase in acquisitiveness within the healthcare and the pharmaceuticals segment, which is more pronounced among mega-deals. This can be to a great extent attributed to the fact that large pharmaceutical companies struggled to cope with expiring patents on a number of key drugs ("patent cliff"), thus turning their attention to M&As in order to meet investor growth expectations (Fortune, 2015).[77] The ultimately withdrawn $160 bil Pfizer-Alergan deal in 2015 was the largest ever announced within the sector. Finally, the utilities and telecom industries have also recorded slight declines in mega-deal activity through time, which is not surprising given that they have progressively become more mature and saturated.

[Insert Table 5.2 here]

Table 5.3 reports the acquisition sample's summary statistics for the three periods under investigation as well as differentials between these periods. Statistics are segregated for acquirer, target, and deal specific characteristics. Accounting ratios are winsorized at the top and bottom 1% level where relevant. Acquiring firm size has generally increased through time although firms carrying out mega deals in 2010-2015 have similar market capitalisation with those in the 2000-2009 decade. The size of target firms and deal size among periods is also comparable in mega-deals although they have both increased for smaller deals. The target-to-acquirer relative size has decreased significantly pointing to smaller deals during the most recent period. This may be explained by the decline in the share of listed target acquisitions during the 2010-15 period which is more pronounced in larger deals. More than 60% of mega-deals were for private companies compared to around 46% in the previous decade and 38% in the 90s which indicates a trend towards larger private deals.

Both acquirers and targets (to a lesser extent) are subject to lower valuations post-2009 as proxied by the market-to-book ratio. Given the evidence on the relation between firm valuation and payment

[77] "The real reasons for the pharma merger boom", July 2015, Fortune.

method (see for example Dong at al., 2006; Faccio and Masulis, 2005), this may also partly explain the plunge in both pure stock-for-stock deals and share of equity consideration in acquisition offers during this period. Only around 5.5% of mega-deals in 2010-2015 are financed entirely with stock-swaps, which represents a remarkable decline from the 19% and 35% recorded in 00s and 90s respectively. The documented scarcity of equity financing during the most recent period can also be attributed to the availability of ample corporate liquidity bolstered by healthy profitability as well as the historic lows in interest rates which facilitated access to debt financing. The combination of these factors led to a dazzling increase in the cash component of acquisition offers during the most recent period, where the median mega-deal comprises of 88% cash financing.

[Insert Table 5.3 here]

Though the percentage of diversified deals has remained similar over time, cross-border deals have increased. This is not unexpected given the race for globalisation as well as the tendency of U.S. companies to expand more in emerging markets in order to enhance their growth prospects. Another important observation is that there are fewer failed deals during the more recent M&A period. Only 7.2% of mega-deals have been withdrawn following their announcement relative to 9.6% and 15% in the two previous decades respectively. Considering the more stringent regulatory environment affecting M&As, and in particular competition policy (Moshirian, 2011), one would have expected to see more deal cancellations during 2010-15. The lower withdrawal rate documented may relate to more efficient selection and planning of M&A deals or to more reluctance in cancelling announced transactions in order to avoid incurring hefty break-up fees (FT, 2016).[78] Alternatively, it may be attributed to the larger share of less complex private deals in the mix during the most recent period, which can also explain the fact that time to deal completion has somewhat diminished.

Information on deal motives available on SDC (deal purpose description) suggests that M&A drivers have evolved significantly post-2009. More specifically, synergistic benefits are mentioned as part of the deal announcement in more than 63% of mega-deals, relative to 25% during 2000-2009. If this trend reflects a genuine change in acquisition decision drivers then it should translate to greater benefits for shareholders. Along these lines, there is some evidence that target shareholders in mega-deals receive higher premia post-2009 than in the past, although only median differences are statistically significant at conventional levels. So if anything, target shareholders do not appear to be getting the lion's share of any additional synergistic value.

Several statistics point to sizeable improvements in acquiring firm attributes at the C-suite and corporate board level that may impact the quality of acquisition decisions. CEO overconfidence, a well-documented managerial trait responsible for value-destroying acquisitions (Malmendier and

[78] Officer (2003) finds that the presence of a termination fee payable by the target increases the probability of deal completion by 20%. The probability of completion may be higher in recent years, as the typical termination fee of around 3% before the 2008 crisis has more than doubled after the crisis (Financial Times, 2016).

Tate, 2008; Billett and Qian, 2008), appears to be less of a problem for acquiring companies during the most recent period. An overconfidence measure based on the timing of stock options exercise (Malmendier and Tate, 2005) reflects significantly lower levels of managerial hubris post-2009, with less than 35% of CEOs that carry out mega-deals failing to exercise their options twice during their tenure, although they are 67% in the money. Improvements in corporate governance are also quite compelling. The representation of independent directors on the board of the average acquiring firm has reached 82% in 2010-2015 relative to around 70% in the 00s and 62% in the 90s.[79] This signifies a remarkable milestone in the board independence regime; nearly the entire board is now typically comprised of independent directors, which is about as optimal as it can get. Moreover, the share of equity based compensation (EBC) (Chauvin and Shenoy, 2001) in the top executive's salary has increased significantly. Since EBC and acquisition performance tend to be positively associated (Datta et al. 2001), one might expect that the documented increase in EBC might have led to deals of superior quality.[80] Finally, the stock ownership of independent directors (IDO), one of the most consistent predictors of corporate performance among other corporate governance indices and variables (Bhagat et. al, 2008), has also increased markedly. This metric is informative since independent directors are not typically rewarded for effective monitoring. A rise in independent director connectedness to the wealth the firm generates may thus be taken to imply stronger incentives for effective monitoring and more effective alignment of interests between directors and shareholders. Overall, the trends in all conventional dimensions of corporate governance are consistent with remarkable improvements in internal control and incentive alignment mechanisms post-financial crisis. Such significant developments, along with the fundamental differences in M&A characteristics between the most recent period and the previous two decades, are likely to influence the quality of corporate investment decisions and value creation potential.

[79] Data on the representation of independent directors is from ISS (ex-Risk Metrics).

[80] The percentage of equity in managerial compensation increased from about 20% in early 1990s to about 60% in 2010s (Denning, 2014). Some research has also argued that equity based compensation can in fact lead to corporate short-termism if it counteracts the effect of stock price performance on executive compensation (Bolton et al., 2006).

5.3. Empirical Results

5.3.1. Univariate analysis of acquisition gains

As a first step in the analysis of acquisition gains we study a comprehensive set of value creation metrics. Table 5.4 reports the univariate results partitioned by sample sub-periods and target type (public or private), along with the respective differentials. Although the focus of the paper is on 3,150 mega-deals, results are also reported for the remaining 21,222 deals with acquirer return data in Panel B for comparison purposes. *ACAR3* is the acquirer cumulative abnormal return for a 3-day (-1,+1) announcement window based on the Brown and Warner (1985) market model, which is estimated over the window (-301, -46) relative to the acquisition announcement day. For mega-deals, although acquirer returns are typically negative and significant, or at best zero, during the previous two decades, this appears to have changed profoundly post-2009. The mean (median) *ACAR3* in 2010-15 is a resounding 2.54% (1.34%); an increase of 2.90 (1.72) percentage points relative 1990-2009.[81] The outperformance of acquirers in 2010-15 can be attributed to the fact that there are more deals with positive ACARs (*WINNERS3*) recently (61.54%) relative to the past (47.01%) and the difference is statistically significant. The observation that more than half of large M&A deals fail to create value for acquiring companies during the 90s and 00s appears to no longer apply for the most recent period where a large majority of acquirers are actually subject to positive abnormal returns. This represents a fundamental shift in the status quo.[82]

[Insert Table 5.4 here]

Dollar gains (*$GAIN3*), computed as the abnormal dollar increase in the market capitalisation of the acquiring firm, are also in the same direction. Post-2009, the median acquirer in mega deals realises a gain of $86.71 mil in the three days surrounding the acquisition announcement. Prior to this, the equivalent loss reported was $16.42 mil. This attests to a compelling improvement in acquiring firm shareholder gains during the most recent period. At the aggregate level acquiring firms generated gains of $42 bil or 2.5 cents per dollar spent around the acquisition announcement from 2010 through 2015 whereas they lost $530 bil or 13 cents per dollar spent during the previous decade.

The fact that acquirers carried out more private deals and used significantly less stock financing in public acquisitions during the most recent period may be driving our results. For this reason the table also reports abnormal returns separately for public and private deals and also differentiates between

[81] In unreported tests we also estimate *ACAR32* for a (-30,+1) announcement window to capture part of the pre-announcement, opaque "merger talks" period. This measure of acquirer returns yields very similar results with *ACAR3*.

[82] Appendix 2 reports details of the 10 largest deals for each of the three periods examined. Six out of ten deals in 2010-15 are subject to positive announcement CAR compared to zero out of ten in 00s and four out of ten in the 90s.

different considerations offered. The bulk of the improvement in acquisition performance appears to be stemming from acquisition of listed targets. Private mega-deals also yield higher abnormal returns but the difference is not as pronounced or statistically significant. The *ACAR3* mean differential for public deals between 2010-2015 and 1990-2009 has reached a remarkable 4.45%. More importantly, public acquisitions during the post-2009 period are subject to positive and significant at the 1% level abnormal returns for acquiring companies (2.01%). In an unreported test we find that this is not significantly different to acquirer gains for private deals (2.84%). To the best of our knowledge this is the first study documenting that U.S. public acquisitions create value for acquiring shareholders to such extent. Moreover, the performance turnaround persists both for pure-cash and stock deals. In fact, stock-swap financed public acquisitions are subject to positive abnormal returns during the most recent period. Although this sub-set is relatively small and the positive CAR is not statistically significant, this is again the first time non-negative returns are reported for stock-financed public U.S. deals.

Synergy gains for public acquisitions (*SYNRGY3*) are estimated as the market-value-weighted average of acquirer and target CARs where data for the target is available on CRSP. The improvement in combined gains is striking; the average *SYNRGY3* for the 2010-15 period is 5.05%. Synergistic gains have increased by more than 5 times relative to the previous 20 years and more than 10 times from the previous decade (2000-2009). In dollar terms *($SYNRGY3*) this corresponds to a striking $543 mil gain for the typical mega-deal post-2009 relative to a $173 mil loss in the previous decade. A measure of deal value added *($VALUE +*), popularised by McKinsey (2015) and estimated as the ratio of total market capitalisation change for the acquirer and target around the acquisition announcement adjusted for market movements and scaled by the deal value, also points to large improvements in combined value creation during the most recent period.[83] First, our findings are consistent with the surge in synergy related motives reported in Table 5.3 and suggest that acquirers carried out by and large superior deals, with better synergistic prospects during the most recent period. Secondly, since we do not observe a proportionally equivalent increase in acquisition premia, one might assume that a large part of the surge in synergistic gains is captured by acquiring companies.[84]

To further explore the share of synergies we employ a measure of the division of gains between bidders and targets as in Ahern (2012). Δ*$GAIN3* is difference in dollar gains between the target and bidder scaled by the sum of their market value 30 days prior to the acquisition announcement. This ratio indicates that during the most recent period in our sample targets gained on average 3.16 cents more on each dollar of total market value than acquirers as opposed to 5.13 cents more during the

[83] "M&A 2014: Return of the big Deal", April 2015, McKinsey&Company.
[84] Although target returns (TCAR3), have increased significantly in the post-2009 period, this may also reflect the higher probability of deal completion during this period considering the smaller share of failed deals.

previous decade. Accordingly, not only have acquirers consummated better acquisition deals post-2009, but they have also managed to secure a larger share of the synergy pie for the benefit of their own shareholders. Overall these results mark a structural shift in value creation for large public acquisitions. The fact that this type of deals tended to more often destroy value, as widely reported in prior literature, is no longer true for the latest period in our sample. In the next section we attempt to establish whether this trend reflects genuine improvements in acquisition decisions rather than differences in other deal, firm, or market characteristics not accounted for in the univariate analysis.

Finally, Table 5.4 reports acquisition gains for the sample of 21,222 non-mega deals for comparison purposes. The acquisition performance turnaround reported for mega-deals is not evident for this sample as a whole. In fact, in some cases ACARs are lower in 2010-15 relative to the previous two decades. However, when differentiating between public and private deals it becomes clear that acquirer returns have improved even for the rest of the public deals, although to a lesser extent than for mega-deals. To the contrary, ACARs for non-mega private deals during the most recent period are at best similar to the 90s and 00s and even inferior in some cases. Our results indicate that acquiring firms have got better in acquisitions recently, though they seem to have improved more on deals that were previously more likely to destroy value; that is public acquisitions and especially larger ones. The fact that we only document an increase in M&A gains in this case is consistent with our hypothesis given that the reputational exposure of acquiring firms, top executives, and directors in such type of deals is more pronounced. Accordingly, if the developments that occurred in the aftermath of the financial crisis led to better acquisition decisions, then it is not surprising that firms concentrated their efforts on improving in such type of deals. On the other hand, if the drivers of private deals and the associated benefits have been more optimal all along, then the same argument would not apply to the same extent, if at all, for this subset.

Figure 5.2 depicts the evolution in acquirer CARs from 30 days prior to the acquisition announcement to 30 days after. The difference in pattern between the post-2009 and pre-2010 period is extraordinary. For the 90s and 00s returns are marginally negative or fluctuate around zero up to the acquisition announcement day, at which point they sharply decline to between -2.5 and -4% until day +30. On the contrary, for the 2010-2015 period there is a sizeable jump in CARs around the announcement day reaching almost 3%, down to around 2% on day +30. The implied acquisition gain differential 30 days following the acquisition announcement between the previous decade and 2010-15 increased to around 6%.

[Insert Figure 5.2 here]

As a result, it is unlikely that the documented return differentials are associated with short-term market over-reaction since they but appear to persist – and in fact further increase - up to one month

following the acquisition announcement. In section 3.5 we conduct further tests for acquirer returns using an even longer window of one year.

5.3.2. Acquirer return and synergy regressions

In this section we examine whether the documented improvement in acquisition returns during the most recent, post-2009 period can be attributed to any deal, firm, or market characteristics, other than those accounted for in the univariate section. We perform a series of cross-sectional regressions where the dependent variable is *ACAR3* and the main explanatory variables are indicators equal to one if the acquisition i) is announced between 2010-2015, ii) is a mega deal, and iii) the interaction of (i) and (ii). We control for key variables that have been shown to affect acquirer returns. These are: i) the occurrence of a public deal to account for the fact that acquisitions of listed targets tend to be associated with lower acquirer returns (Fuller et. al, 2002 and Faccio et. al, 2006); ii) an all-stock dummy to control for the negative abnormal returns associated with acquisitions of listed targets paid for entirely with stock (Travlos, 1987); iii) the natural logarithm of the transaction value since larger public deals are evidently subject to more negative abnormal returns (Alexandridis et. al, 2013);[85] iv) the acquirer market-to-book value given the firm misvaluation implications for bidders (Moeller et. al, 2005; Dong et. al, 2006), v) a competing bid variable to capture the potentially negative effect of competition on the gains to acquiring firms (Bradley et al., 1988); vi) a control for takeover hostility since it tends to be negatively associated with acquirer returns (Schwert, 2000); vii) a diversification dummy variable equal to one when the acquirer and target have different 2-digit SIC codes to account for the fact that diversifying acquisitions have been found to destroy shareholder value (Morck et al, 1990); viii) a cross-border indicator equal to one when the target is outside the U.S. since higher announcement returns are documented for acquisitions of foreign targets (Moeller and Schlingemann, 2005); ix) a serial acquirer control which accounts for the fact that multiple bidders tend to make worse acquisitions (Fuller et al, 2002; Billett and Qian, 2008); x) the acquiring firm's leverage (Maloney et al., 1993) and FCF ratios (see e.g. Jensen, 1988; Lang et al., 1991); xi) a high market valuation indicator equal to one when the deal is announced during a month with an abnormally high de-trended market P/E ratio as in Bouwman et al. (2009); finally, we control for industry and company fixed effects where relevant. Table 5.5 reports the regression results.

[Insert Table 5.5 here]

[85] Due to their high correlation (up to 71%) we do not simultaneously include acquirer and target size in the regressions. Alexandridis et al. (2013) find that the acquirer size effect documented by Moeller et al. (2004) is in fact primarily driven by target size. For this reason we have opted for target size as a control variable. Although including both does seem to introduce multicollinearity to the regression, it still does not alter our findings and conclusions with regards to the improvement in acquisition returns.

In specifications 1 through 4 we run the regressions for mega deals only. The coefficient of the 2010-15 indicator variable is positive and statistically significant at the 1% level in regressions 1-3. In regression 2 deals carried out during the latest period are subject to a 1.69% higher *ACAR3* after controlling for other known acquirer return determinants, which corroborates the recent turnaround in acquisition gains reported as part of the univariate findings. This superior performance can be largely attributed to the striking improvement (by 3.72%) in acquisitions of public targets as seen in regressions 3 (only public deals) and 4 (only private deals).[86] In an unreported regression we re-run model 2 for deals consummated between 2010 and 2015 only and find that the indicator variable *Public* becomes statistically insignificant. This attests that public deals generate as much value for acquiring shareholders as private ones do during the most recent period, which outcome is particularly compelling considering existing evidence on wealth creation via M&As.

In specifications 5-7 we run the regressions for the overall sample that includes both mega and non-mega deals to gain insight into the relative improvement of the former relative to the latter. The variable of interest here is the interaction between the 2010-15 period and the mega-deal indicator variables. We exclude deal value since the mega-deal dummy variable already captures transaction size.[87] In regression 5 the negative coefficient for 2010-15 suggests that, in general, acquisition returns were lower during this period relative to the past. Moreover, mega-deals have a negative influence on ACARs, which is consistent with prior literature that acquirer returns decrease with the size of the target. However, the *2010-15 x Mega-Deal* interaction variable points to a 3.17% higher acquirer return for large deals carried out during the most recent period, relative to all remaining transactions. This result remains robust after all other control variables are introduced in regression 6. In specification 7 we include all deals post-2009 to examine whether mega-deals outperform the rest during this period and find that they do so by 1.45%, which is in line with our univariate findings. So it seems that not only have acquirers consummating mega-deals managed to create more value for their shareholders post-2009 relative to the two previous decades, but also that carrying out mega-deals during this latest period has been more beneficial for acquiring shareholders relative to pursuing smaller deals. This is an important result and it is consistent with a reversal of a conventional trend documented in M&A literature; the negative association between deal size and shareholder gains (Loderer and Martin, 1990; Alexandridis et al., 2013).

It is possible that the documented shift in the deal size - acquirer return relationship is associated with the fact that transactions involving listed targets are less prevalent post-2009 than in the past. Fuller et al. (2002) argue that a possible explanation for the positive relation between size and acquirer returns in private deals is the liquidity discount pertinent to unlisted target acquisitions and Officer (2007)

[86] While the 2010-15 coefficient in specification 4 is statistically insignificant it becomes significant when excluding some of the control variables. Therefore, there is still some improvement for private-mega deals but this can be explained by other firm and deal characteristics.
[87] The correlation between the two variables is 70.5%.

finds evidence consistent with such discounts.[88] To address this, regressions 8 and 9 examine more directly changes in the relationship between deal size and acquirer returns in public deals post-2009. The coefficient of deal size swings from negative and statistically significant pre-2010 to insignificant post-2009. This finding attests that larger deals no longer destroy value for acquirers during 2010-15 which is documented for the first time and is inconsistent with the perception that large acquisitions are more likely to end up in disaster. It also shows that acquiring companies have recently become better at tackling the challenges associated with larger public acquisitions either through attaining more strategic combinations and/or more efficiently managing their heightened complexity and cumbersome integration process.

In regressions 10 and 11 we examine whether the inclusion of company fixed effects has an impact on our results. Golubov et al. (2015) report that firm fixed effects alone explain at least as much of the variation in acquirer returns as all the firm- and deal-specific characteristics combined. Accordingly, it may be the case that the superior performance of acquirers post-2009 can be explained by unobserved, time-invariant firm characteristics. Although the inclusion of company dummy variables (1,440 companies for (10) and 6,102 companies for (11)) results in a very significant increase in the adj. R^2, the coefficient of the interaction variable *2010-15 x Mega Deal* in regression 11 remains almost unchanged relative to regression 6. Further, the time-indicator 2010-15 is still significant in regression 11, indicating that the documented turnaround in acquisition performance is not attributed to specific extraordinary acquiring firms.

The univariate results presented in Table 5.4 suggest that the improvement in acquirer returns post-2009 coincides with an unprecedented increase in synergistic gains. Acquiring firms have carried out deals with impressive economic benefits and also managed to channel more of the incremental combined value gains to their own shareholders. In this section we examine the magnitude of the increase in combined gains during the latest period relative to the previous two decades in a regression framework, whereby we include the same control variables as in Table 5.5. Table 5.6 reports the results from the regression analysis where the dependent variable is the value-weighted combined *SYNRGY3* to acquiring and target firms. Regressions include only acquisitions of listed targets since synergy gains can only be estimated for those deals.

[Insert Table 5.6 here]

In regression 2, mega-deals consummated in 2010-15 are subject to a 3.67% higher synergy gains relative to those carried out during the preceding 20 years, after controlling for a number of known acquisition return determinants. Considering that the typical mega-deal was subject to a combined gain of only 1.00% and 0.43% in 90s and 00s respectively, the recorded increase in synergies is

[88] After running regression 6 for the sample of private deals, we also confirm that acquirer gains increase with the size of the deal, a relationship which is significant at 1% level (untabulated).

remarkable. In regressions 3 and 4 we also include non-mega deals to explore if the documented improvement is a more widespread phenomenon among public acquisitions. In specification 4 the 2010-15 coefficient points to a 1.77% higher combined CAR for public deals during this period. Thus, acquiring firms have also got better in delivering synergistic benefits in non-mega public acquisitions – albeit to a lesser extent. Moreover, the mega-deal and the interaction variable 2010-15 x Mega Deal behave in a similar way as in the acquirer return regressions; synergy gains tend to be less in mega-deals but this is not the case for those consummated post-2009, which generate 1.81% higher combined CARs relative to all remaining deals. Therefore, again, the typical mega-deal carried out during the latest period truly stands out. Controlling for company fixed effects (808 companies for (6) and 1,783 companies for (7)) in regressions 6 and 7 cause the coefficients of the time indicator and interaction variable to decrease somewhat, although they still remain statistically significant. Overall, results from the synergy regressions point to superior synergistic benefit expectations post-2009 and are consistent with the acquirer return findings.

To ensure that the relationship documented in sections 3.2 and 3.3 is not driven by extreme CAR observations we also run quantile regressions estimated at the median and other percentiles (25^{th} and 75^{th}). The analysis is repeated for all mega-deals in Table 5.7 where the dependent variable is ACAR3 in specifications 1-3 and SYNRGY3 in specifications 4-6. The magnitude of the 2010-15 time indicator varies but it remains statistically significant at the 1% level in all 6 specifications, reiterating the superior performance of mega-deals during this period.

[Insert Table 5.7 here]

5.3.3. Acquisition gains based on propensity score matching

Although the positive relationship between the 2010-15 time indicator appears to be robust to a number of firm and deal-level return determinants, we also employ a propensity score matching (PSM) technique which can control more directly for observable differences in the deal characteristics between mega-deals consummated during the most recent sub-period and prior to this. Essentially, this approach produces close matches of post-2009 deals to pre-2010 counterpart transactions on the basis of their similarity and then compares their gains. As a first step we use a logit model to estimate the impact of all firm and deal characteristics we utilised in Tables 5-7 on the likelihood of a deal being part of the post-2009 sub-set. Panel A of Table 5.8 reports the regression results for the sample of 2,939 and 1,316 mega-deals for the *CAR3* and *SYNRGY3* samples used in Tables 5 and 6. Several variables appear to be important in differentiating 2010-15 deals from their counterparts. For instance, post-2009 deals are less likely to be public and financed entirely with equity as seen in specification 1. They also tend to be associated with less hostility and competition among bidders, and are more likely to be consummated during high valuation months, consistent with the summary statistics reported in

Table 5.3. The *Public* coefficient in specification 1 implies that the probability of observing a public deal in 2010-15 is 43% less (83% less for a stock-for-stock deal).

[Insert Table 5.8 here]

Panel B reports the PSM results for both performance proxies (*CAR3* and *SYNRGY3*) based on two different techniques: i) the nearest-neighbor matching; and ii) the Gaussian kernel matching. Propensity scores are estimated from regressions 1 and 2 respectively. Deals are matched on the basis of their nearest (one-to-one), thirty, and fifty neighbors. *Treated* sample *CAR3* corresponds to post-2009 CARs and *Control CAR3* to the matched deals' CARs. Both acquirer and synergy gains for the treated samples are higher than the control sample ones, and the differentials range from 2.3-3% for CAR3 and from 3.6% to 3.8% for SYNRGY3, all significant at the 1% level. Overall, our results on alternative nearest predicted probability matching approaches corroborate that mega-deals completed during the latest sample period outperform very similar deals from the previous two decades. So unless, there are important characteristics not captured in the first step of the approach, the outperformance of more recent deals seems to be largely robust.

5.3.4. Do developments in corporate governance drive the results?

Although we have reported a compelling pattern in the data pointing to unprecedented improvements in the quality of mega-mergers following the 2008 financial crisis, the ultimate driving force(s) that induced such a sharp structural shift on M&A decisions remain unclear. Our main hypothesis predicts that the developments that occurred in response to the crisis at the corporate governance level can potentially affect how directors and executives approach the selection and implementation of acquisition opportunities, as well as the degree of their accountability toward shareholders in carrying out value-increasing investments. The widespread collapse of trust among capital providers, the government, and the general public regarding the operation of financial institutions had ripple effects for non-financial institutions, putting corporate governance for all listed companies on the spotlight. The ensuing reforms, as part of the Dodd-Frank act passed in 2010, introduced new mandatory disclosure rules, re-aligned executive compensation, bolstered the accountability of corporate top executives and granted more powers to shareholders. However, these mandatory reforms, can account for less than half the story, with anecdotal evidence attesting to a much deeper and ubiquitous urge for change among listed companies, especially the most sizeable ones.

Accordingly, the aftermath of the crisis has seen a shift towards the voluntary adoption of practices such as more efficient incentive structures, greater director specialisation and diversity, increased emphasis on the risks associated with strategic goals and operations as well as the rise of "stakeholder democracy" and information technology governance, all aiming to enhance the value creation

mechanism and convey more confidence to the public. Such profound changes in internal control mechanisms can potentially induce more shareholder-centric decision-making and - in view of the role corporate boards play in M&A decisions (Deutsch et al., 2007; Carpenter and Westphal, 2001) - exert a positive influence on the selection and justification of acquisition investments as well as the deal implementation and post-merger integration processes, thereby justifying the widespread improvements in acquisition gains we document in this study. Since some of the aforementioned developments in corporate governance are not directly measurable or quantifiable due to the limited availability of information at the firm level, we focus on some more conventional dimensions that are nonetheless likely to capture any broad trend for change. These are board independence (Shivdasani and Yermack, 1999), the stock ownership of independent directors (Bhagat et. al, 2008), and the BCF anti-takeover provisions index (Bebchuck et al., 2009). [89]

To examine whether the hefty improvements in corporate governance documented in Table 5.3 are to any extent associated with the positive relationship between acquisition gains and our post-financial-crisis indicator, we employ a two-stage regression approach as in Golubov et al., (2016). Although the crisis in itself may be seen as an exogenous source of variation in corporate governance, partly addressing potential endogeneity concerns, the two-stage approach is necessary in order to isolate the effect of this exogenous component and determine whether the ultimate source of acquisition gains is associated with the pre-to-post crisis variation in corporate governance. Table 5.9 presents the results from the instrumental variable estimation.

[Insert Table 5.9 here]

The positive and statistically significant coefficient of the post-2009 indicator in the first stage regressions suggests that this period is linked to higher independent director representation and stock ownership as well as less anti-takeover provisions among acquiring firms (regressions 1, 3 and 5 respectively), after controlling for the same set of deal characteristics as in our main regressions.[90] We can also deduce that our 2010-15 variable is a credible instrument for the corporate governance variables employed, and especially the degree of board independence. The BI coefficient in the first stage implies a higher representation of independent directors on the board of acquiring companies by 14% (so about one additional independent director on a 7-seat board). In the second stage OLS where the dependent variable is *ACAR3*, we omit the time indicator and the corporate governance variables are based on their expected values from stage one. The results here indicate that variations in all three governance proxies are significant determinants of acquirer abnormal returns, confirming that the

[89] Although our board independence variable is continuous, in unreported tests we have also used an indicator equal to 1 when independent directors comprise more than 50% of the board as in Masulis et al. (2007) and obtain similar results. Alternative board independence thresholds, for instance 60%, also produce similar results.
[90] Since our time indicator 2010-15 captures the difference in corporate governance between a 6-year period (2010-15) and a 20-year period (1990-2009) we re-run the test for the sub-sample starting in 2004 and obtain similar results.

post-2009 turnaround in acquisition performance can be linked to improvements in corporate governance. In unreported tests we also repeat the same regressions using synergy gains instead of *ACAR3* and find similar results.

There are of course other concurrent developments emerging at the same time which might be captured by our time indicator in the regressions. For instance, changes in the psychology of corporate leaders due to a sense of enhanced visibility that might reinforce restraint, expedite learning from prior mistakes, and foster a focus towards value creation, along with a surge in shareholder activism and litigation associated with mergers and acquisitions, can all impinge on the quality of investment decisions.[91] Although these drivers may be seen as directly or indirectly related with the governance regime change discussed above, we recognise that if acquirer returns are affected by the time-indicator other than through its effect on governance then the exclusion restriction in our two-stage approach is violated. Consequently, our results on the effect of corporate governance need to be interpreted with caution.

To more directly quantify the impact of a change in board independence – our main governance proxy – on acquisition gains we employ a diff-in-diff approach for a sub-sample of 172 acquirers that have consummated at least one mega-deal both pre-2010 and post-2009. We rank these acquirers on the basis of their change in board independence from the fiscal year end prior to the year of their last deal in the pre-2010 period to the fiscal year end prior to the year of their first deal in 2010-15 *(*ΔBI). Then we also estimate a corresponding $\Delta CAR3$ for each pair. Acquirers in the top ΔBI quintile are subject to an average (median) increase in *CAR3* of 3.03% (1.89%) and those in the bottom quintile experience a decrease in abnormal returns -2.03% (-2.47%), with the differences being significant at the 1% level. We can therefore conclude that firms with the highest increases in the representation of independent directors on their boards manage to improve their deal making. Conversely, those that experience no or small improvement in corporate governance make more value-destroying deals than before. The direction of our findings is also similar for the other two measures of corporate governance, *IDO* and *BCF*.

5.3.5. Do the gains persist in the long-run?

Our analysis so far suggests that the market is more optimistic about the announcement of mega-deals taking place during the latest period in our sample. Although the price reaction around a deal proposal tends to provide a good approximation of the actual value creation for shareholders, the question of

[91] The probability of directors being sued by investors for a major merger decision they made has reached 90% in the recent period (Lajoux, 2015), while about 97% of all deals larger than $100 mil result in litigation battles (Gregory, 2014). Therefore, directors are more incentivised to perform their fiduciary duties to the best of their abilities, to avoid the negative publicity and other repercussions of an adverse decision in the court of law.

whether the superior expectations documented are eventually attained is equally important, especially in large transactions that entail a high degree of complexity. In addition, if acquirers have got better at carrying out acquisition investments because focal aspects of the M&A process, including implementation and integration, have improved, then this would show up primarily in long-term post-acquisition value creation metrics. Since the latest sub-set of our sample comprises of deals announced between 2010 and 2015, it is not currently possible to assess the long-term impact of the majority of these deals using stock return or operating performance measures estimated over extensive post-acquisition windows. Since operating performance changes tend to be meaningful over at least 3-years (Barber and Lyon, 1996; Mikkelson et al., 1997, Eberhart et al., 2004) we have opted for stock returns.[92]

[Insert Table 5.10 here]

We employ two different measures to estimate long-run post acquisition stock performance; i) buy-and-hold abnormal returns (*BHAR*) using the Fama and French 25-Size and book-to-market portfolios and ii) calendar time portfolio regressions (*CTPR*) using the Fama and French three factors model augmented with Carhart's (1997) momentum factor.

Table 5.10 presents the results. In accordance with the announcement-window findings, acquirers carrying out mega-deals in 2010-15 fare better in terms of abnormal returns. The average acquirer is subject to a 4.42% *BHAR* in the 12-months following the acquisition announcement, which is statistically significant at the 1% level. In contrast, the mean *BHAR* for all previous periods is negative and significant, suggesting that the majority of mega-deals have ultimately been value-destroying for acquirers prior to 2010. We also run a cross-sectional regression of the *BHAR* on the 2010-15 time indicator and other control variables utilised in our ACAR analysis.[93] Accounting for other return determinants the coefficient of the indicator implies a 3.5% higher BHAR for post-2009 deals. The *CTPR* results are similar with only the 2010-15 sub-set showing signs of value creation; the monthly 4-factor regression alpha of 0.36% for this period corresponds to a 4.5% 12-month abnormal return. Conversely, the *CTPR* alpha is negative for the 90s and 00s. These findings provide support to the argument that acquirers have carried out superior acquisition investments during the latest sample period that delivered long-term benefits to their shareholders.

5.3.6. Has overall investment efficiency improved?

[92] We still lose 394 mega-deal observations and 4,863 non-mega deal ones in our long-run stock return analysis due to lack of data in Compustat (for the purpose of matching with size and B/M portfolios) or the announcement date being in 2015.

[93] We exclude acquirer M/B from the control variables since the dependent variable (BHAR) is already adjusted using the Fama and French firm size and book-to-market portfolios. We still include deal value since it is quite different from acquirer market value.

Our analysis so far has focused on the effects of M&As on share prices. Although this is a standard approach for assessing value creation from acquisitions, it offers little information on how efficiently firms allocate funds to M&A investment opportunities relative to their growth prospects. More importantly, if firms make better acquisition decisions they should have also become more efficient in other investments, such as CAPEX and R&D. To that end, we employ a measure of acquiring firms' residual investment, *RESINV*, which captures the investment that diverges from the expected level of investment, given a set of factors that have been shown to predict the optimal investment level (see e.g. Richardson, 2006; Biddle and Hilary, 2006). Specifically, we run the following regression for 20,970 acquiring firm-year observations for the entire sample period:[94]

$$INV_{i,t} = \alpha + \beta_i Q_{i,t-1} + Leverage_{i,\,t-1} + Cash_{i,t-1} + Company\ Age_{i,\,t-1} + Size_{i,\,t-1} + Stock\ Return_{i,\,t-1} + INV_{i,\,t-1} + FE + \varepsilon_{i,}$$

Following Richardson (2006) $INV_{i,t}$ is the sum of capital, R&D, plus acquisition expenditures minus sales of PPE and necessary maintenance for assets in place for firm *i* in year *t* from Compustat, scaled by prior-year book value of total assets. The independent variables are estimated at the end of the previous fiscal year t-1. Q is the market value of the firm (market value of equity and book value of debt) over total asset value. Leverage is the ratio of total debt over book value of equity. Cash is the log of total value of cash and equivalents. The company age is in logarithmic form and it is calculated by the incorporation date as displayed in Compustat. Size is the log of total asset value. Stock Return is the percentage change in the market value of equity for the past year. We also include the previous year's *INV* term. *FE* corresponds to industry fixed effects. The absolute value of the residual from the investment efficiency equation, ε_i, is the residual investment measure, *RESINV*, and it reflects the extent of managerial investment inefficiency.

[Insert Table 5.11 here]

A lower value of *RESINV* for acquiring companies post-2009 would provide a strong indication that firms have become more meticulous in the allocation of capital to investment opportunities. Table 5.11, Panel A shows the regression results and Panel B provides the univariate values of *RESINV* pre- and post-2010 as well as their differentials. The extent of investment inefficiency is significantly less post-2009 suggesting that corporate leaders have consistently aimed towards more optimal investment allocation in recent years. The turn towards more efficient investment strategies may have potentially

[94] *INV* and all explanatory variables are estimated for each acquiring firm-year in our sample period. So a bidder completing a mega-deal in 2004 will be included in the regression for all 26 years subject to data availability. This is because the purpose of this test is to examine the efficiency of all firm's investments not just M&As. In addition focusing on M&A years only would produce inflated investment figures. Nonetheless, including acquiring firms in the test only once, at their acquisition announcement year, still produces similar results.

laid the foundation for the documented improvement in acquisition performance and together attest to a structural shift in corporate decision making towards more value enhancing investment.

5.4. Conclusion

One of the most reiterated facts in the M&A literature is the tendency of acquiring firms to destroy value for their shareholders, especially when consummating large deals, which comprise the bulk of M&A activity. In stark contrast with the status quo, we show that this trend has been largely reversed for the first time post-2009. Acquisition gains during 2010-15 show signs of staggering improvement on a broad set of conventional measures, both around the deal announcement and in the long-run. The value creation turnaround documented is more pronounced among public deals which are generally known for destroying shareholder value. During the most recent period acquisitions of listed targets generate positive abnormal returns for acquiring shareholders, even in stock-for-stock deals, and as a result, they no longer fare worse than private deals. The associated synergistic gains have also increased dramatically, indicating overall value creation from M&As on a massive scale and acquirers have been able to secure more of those gains for their own shareholders. We also provide evidence of acquiring firms employing more efficient investment allocation strategies during the most recent period, manifested in lower degrees of over- and under-investment. These changes in the aftermath of the 2008 financial crisis coincided with significant developments in the corporate governance environment, which have the potential to foster increasingly optimal investment decisions that cater for shareholder value creation more than ever before. Although the rather abrupt turnaround in acquisition performance may be also be driven by other unobserved changes that occurred as a result of the financial crisis, our evidence suggests that it can be at least partly explained by the variation in conventional governance characteristics.

The documented findings mark a milestone in existing knowledge about gains from acquisitions and, in accordance with the neoclassical theory of M&As, challenge conventional wisdom that acquiring firms destroy shareholder value more often than they create. They also imply that a financial crisis of grand scale and its after-effects can ultimately contribute towards the more effective monitoring of corporate investment decisions as well as the associated implementation process, bringing sizeable gains to shareholders. Since some of the shockwaves associated with such crises tend to dissipate with time it remains to be seen if the trends we report in this study persists in the future.

Part III

Conclusion to the Thesis

6. Conclusion

6.1. Summary and concluding remarks

This thesis has been a treatise on the corporate finance strand of Mergers and Acquisitions (M&As). Its purpose has been to investigate unexplored or neglected nooks in the area of deal-making and elucidate the findings with structured argumentation and intuition. This endeavour has manifested throughout 3 empirical chapters, which are dedicated to conventionally independent areas within the field of M&As. Therefore, Chapter 2, which was a standalone account on literature developments, has covered a broad range of the topics in M&As. It is a crucial reading for the unfamiliar reader and a useful reminder for the specialist; in both cases, a general framework regarding M&As is built, paving the way to the empirical segments, creating or recalling a mind-set for M&As. The empirical chapters, when appropriate, fared their own ad hoc literature review sections, which aimed to narrow the reader's focus on the subject of the respective segment.

The first concept empirically investigated was the ability to timely and accurately predict which publicly listed companies will become targets of acquisition bids, having in mind the wealth-creating opportunities for investors who can reap the benefits of deal premia, as well as the management teams who seek to position their firm as an acquisition target so that their shareholders can earn significant stock returns. The results suggested that the model cannot satisfy both stakeholder groups, since the superior performance achieved by investing prospective targets is not associated with similarly high accuracy in identifying the actual targets. This discrepancy may be attributed to the difference between a firm having all the designated characteristics to become a target and actually receiving a bid.

The study, as well as the proliferation of the overall literature strand in Acquisition Target Prediction (ATP), has been inspired by the seminal study of Palepu, who attempted the first structured formulation of hypotheses, in addition to addressing methodological issues of previous studies. The majority of studies in this field, including Palepu's, have been unable to detect profitable investment opportunities by investing in expected targets. However, more recent studies (see e.g. Brar et al., 2009; Cremers et al., 2008) have reported impressive investment performance for their respective portfolios. Chapter 3 has incorporated new predictive factors, as well as methodological adjustments, and it sided with the latter body of work, highlighting that the long-run performance of expected targets was close to the actual target performance, although the volatility in their annual returns has been more accentuated.

The long-run performance of predicted targets portfolios has been based on the rolling estimation of the model, which has not been reported in the ATP literature before. The aim of adopting a multi-

period framework has been the assessment of the model's intertemporality in terms of both accuracy and investment performance. The result has revealed the fragile nature of the model, as the significance of predicting factors varies over time, and so does accuracy and investment performance. Nevertheless, the model performs better than the average study in the ATP literature for most individual iterations. These results bear significant implications for both practitioners and academics. First, investment managers can benefit from this study by acknowledging the profitable opportunities offered in the market for corporate control. However, management teams and other stakeholders, who want to know which attributes they should seek in order to qualify as prospective targets, receive discouraging feedback from this study, since the incessant change of targetability factors does not allow for a static, textbook approach on the task at hand. Second, the implication on the academic literature concerns the revelation that one-period models may provide spurious or impractical suggestions; the pursuit to identify targetability factors should incorporate their tentative nature, as well as changes in the decision making process of acquirers.

The next concept investigated in this thesis has been the effect of acquisition experience on the stock performance of acquirers. Accordingly, Chapter 4 utilised a set of manually collected data on CEOs of S&P1500 firms, and reported the effectiveness of their past deal experience on future acquisition performance. The outcome supported the existence of non-monotonic relationships between experience and performance, as reported in the seminal study of Haleblian and Finkelstein (1999), although the nature of the relationship was not the previously displayed U-shaped curve, but was better described by an inverse U-shaped structure. While Haleblian and Finkelstein provided the explanation of inappropriate generalisation of experience, suggesting that CEOs apply lessons from deals indiscriminately, the framework better interpreting the results in the current study has been related to CEO hubristic behaviour. Specifically, when CEOs have experience of few deals, they remain alerted and vigilant in order to cope with the deal-specific intricacies, but when they have consummated more deals in the past, they tend to rely more on existing knowledge and their intuition, showcasing traits of overconfidence. This explanation has been similar to inappropriate application of knowledge, but the component of learning was overcome by the hubristic thinking accompanying sizeable experience.

A reason for the discrepancy in the results could be attributed to several factors, such as the different sampling period, as well as the novel approach in measuring CEO experience. Most previous studies considered organisational experience, while the few studies placing the CEO as the main host of experience considered all deals performed during a specific time span before each respective deal. The latter approach has not offered insight on the importance of the experience at the time of CEO appointment. That framework assumed the experience acquired in new and old positions to be of same value, although deals performed within the new organisation may be affected by the organisational knowledge as well. In order to tackle the issue of confounding measures of experience,

I isolated the CEO deal experience gained up to 10 years before the appointment in her position, and subsequently considered the effect of the corresponding experience on deals occurring up to 10 years after the appointment. The effect proved to be insignificant for the short-run returns around the announcement, but it was significant for long-run returns, suggesting experience had an effect on deal execution and target integration. The effect was strong for general deal experience, as well as for experience on similar deal traits, such as target industry and nation.

The aforementioned results yielded significant implications for academics and practitioners in the areas of investments and corporate governance. Investors could benefit by taking into consideration the acquiring CEO's experience before the appointment, and decide on whether they want to invest in favour or against the respective company's stock price in the long run. The board of directors could benefit by evaluating the expected benefit of the CEO's deal experience on the company's stock price, and decide accordingly on the appropriate monitoring tools and intensity, as well as the compensation and incentives structure to be offered. Furthermore, Chapter 4 contributed to the literature strands of learning and value creation in M&As. Specifically, pre-appointment CEO deal experience proved to be a factor for long-term wealth creation for acquirers, while the learning function documented by Haleblian and Finkelstein (1999) has been questioned.

The third and final concept investigated in this thesis was also in the area of value creation. The most popularised fact about acquisitions in the literature has been the negligent or negative returns for the acquirer in the average deal. This fact has not been verified for the deals consummated after the financial crisis of 2008, which has led to one the most turbulent economic conditions since the "Great Depression" crisis in the 1930s. Chapter 5 has been dedicated to the re-examination of the value-destroying of deal-making for the post-crisis period. The focus of the study was on large U.S. deals, since sizeable deals have been reported to have contributed most to the notoriety of M&As (see e.g. Moeller et al., 2004, 2005). For the first time in the academic literature, the average deal in 2010-2015 created consequential wealth for acquirer shareholders. After a series of tests, the effect has been attributed to major improvements in the returns of public deals, as well as negligent improvements in private deals. Stock deals, which have also been reported to destroy acquirer value, have improved dramatically. The prevalence of progress in deal-making could further be affirmed by the unprecedented superiority of recent deals in both short- and long-run returns. By all accounts, large deals, which comprise more than 85% of the M&A value in U.S. in any year of our sample, have started creating wealth on a massive scale.

The financial crisis has led to a widespread re-configuration of the economic and corporate environment, with regulatory authorities revising the operating framework of companies in order to restrict future exposure to similar systemic threats. The main regulatory addition has been the "Dodd-Frank Wall Street Reform and Consumer Protection Act" (Dodd-Frank Act), which amended the

financial regulations, as well as transparency and corporate governance standards for non-financial firms. The stunning improvement in acquisition returns during 2010-2015 could be due to these reforms, which have instilled greater accountability and incentives for more effective monitoring of management by the board of directors. Indeed, Chapter 5 showed impressive improvements in several corporate governance metrics, which have been shown to affect deal returns. Nevertheless, the direct influence of regulatory changes on non-financial firms was not nearly as detailed and demanding as the one imposed after the "dot-com" crisis in 2001, in the outline of Sarbanes-Oxley Act of 2002. This rationale follows that the advancements in corporate governance have not been only in the measurable aspects of board independence and director ownership of the firm, but also in qualitative aspects such as the motivation and effectiveness of monitoring.

The newfound results on M&A wealth creation had several contributions on our knowledge regarding deal-making. First, the status quo of public, stock, and large deals destroying value in the aggregate has been reversed. This is strong evidence that value-destruction has not been an intrinsic component of deals with such characteristics, but it has been a lack of refinement in governance and incentive alignment that allowed for suboptimal deal target selection, execution, and integration. The replacement of CEOs and board members because of the crisis reached record levels, setting an example for future position holders; poor performance will be punished, and deal-making is not exempt from judgement. The second major implication of Chapter 5 has been highlighting the significance of consequential market shocks in regime shifts. The financial crisis of 2008 has not been the only turbulence in the recent U.S. history, since almost every decade bore witness of at least one major, nationwide crisis. Still, value destruction has not receded after the crises in the 90s or 00s. Nevertheless, the magnitude of the financial meltdown, as well as the centrality of the financial system in the modern capitalistic societies have led to striking improvements in deal-making. The observed advancements in performance may be bound to regress back to unexciting levels, although the resilience of the new status quo remains to be seen.

6.2. Future Research Suggestions

Research is an ceaseless process; any academic study, no matter how much it enlightens people or benefits society, serves as a stepping stone for the subsequent studies trying to expand the field and, as a result, our understanding of reality. This thesis is no exception. In this section, I provide insights and suggestions on future extensions of the three empirical studies presented.

6.2.1. Acquisition Target Prediction

Chapter 3 attempted to identify a better model regarding the accurate and timely classification of prospective targets as such, in order for investors and managers to act on the information. An examined concept, which has not provided fruitful results, has been the consideration of the acquirer activity in the respective industry of the prospective target. Specifically, the argument follows that even if a company has high targetability, there should be a critical mass of acquirers active in purchasing firms in that respective industry; deals need at least two counterparts. Although the results of Chapter 3 do not provide support for this notion, its intuitive nature invites for additional effort in identifying other dimensions of latent acquisitiveness. For instance, connections between the BoDs of targets and acquirers has been shown to affect deal premia and returns (Cai and Sevilir, 2012). It could be argued that higher intercompany connectivity via the directors could result in lower information asymmetry for a larger number of acquirers, therefore increasing the well-informed acquirer base for the respective firm. If one or more of the connected, potential acquirers indeed have the attributes of potent acquirers, then the probability of observing an incoming bid should be significantly higher than in the opposite case.

A different approach between the distinction between targetiveness and acquisitiveness could be performed on an intra-company basis. Firms have been alleged to perform acquisitions in order to avoid becoming targets of unsolicited bids (Gorton et al., 2009). These "defensive" acquisitions aim to increase the company's size and complexity in order to make it less attractive or feasible target to potential acquirers. Accordingly, a framework capturing the dual, conflicting role of a company in the market for corporate control may have the capability to diminish the targetiveness of defensive acquirers and, consequently, refine the prediction of the model. Defensiveness of firms does not have to be restricted to acquisition activity, but it can also include the incumbency of existing management. For example, the number of directors who have formed relations to the CEO before her appointment to that position, and who have joined the board after her placement. While a high number of such connections may suggest the CEO's intention to build a compatible team, it could also prove to be the modus operandi of self-serving CEOs. In this case, the market for corporate control may consider the

targetiveness of the respective firm increasing, as long as the incumbency is accompanied by the expected value-destroying behaviour.

6.2.2. Acquisition Experience and Performance

The main discovery of Chapter 4 has been the controversial role of CEO-specific deal experience on acquisition performance. CEOs with modest experience at the time of the appointment yield better acquisitions performance than their more experienced peers. The alertness and caution exercised by the less experienced executives holds for measures of both general and deal-related experience. An aspect of this study that could be benefited by an extension could be the definition of important related deal attributes. Target industry, public status, deal size, and nationality may be only a portion of the significant aspects in deal experience that may guide CEO behaviour on consecutive deals. The deal attitude, potential regulatory restrictions, or other shades of experience may also prove to verify or contrast the results presented in Chapter 4.

An additional area needing further investigation is the domain of deal experience. The majority of studies focus on firm-specific experience, while only a small portion refers to CEOs when measuring deal experience. Each of the two approaches serve the purposes of, first, focusing on what is perceived as the key source of experience and, second, accommodate data availability issues. Although it is more challenging to chart the record of CEO deal-making when compared to firms, information on CEOs is still ample, enabling studies as the one presented in this thesis. Data availability is significantly inferior when the reference point of experience includes the individual records of top executives and directors. Although the deal decision making process may appoint the CEO as the leading force, since she is main instigator for the strategic action, it would be irrational to assume only a negligent effect from the top management, since their role is to advise the CEO, as well as contribute to the post-merger integration process. The rest of the management team is usually comprised of practitioners with valuable intuition skills. Therefore, it would only be natural to consider their own deal experience and its effect on acquisition performance. The availability of data has seen a minor improvement in the recent years due to advancements in reporting requirements by listed firms, and there is optimism for more detailed information provided for the rest of the C-suite executives, as well as the directors.

6.2.3. New paradigm is M&A Value Creation

The most stylised fact in the M&A literature has been the value-destroying effect on acquirer shareholder wealth. Chapter 5 has displayed a structural shift in the deal-making process, since the acquisition returns for even the notoriously value-destroying public or stock deals have turned positive. The main perpetrator for this change is the revamping of corporate governance prompted by

the financial crisis of 2008. A straightforward expansion of this study is the re-examination of wealth creation in M&As after a considerable amount of time in order to verify whether this change has been a momentary anomaly in the aftermath of the crisis or a permanent transformation in deal-making. In the same direction, future studies could aggregate M&A data for more countries and evaluate whether the global nature of the crisis has led to a global shift in M&A performance. If the results indicate a heterogeneous effect, then additional research may shed light on the factors allowing or hindering corporate governance changes to influence deal performance.

In Chapter 5, the dimensions of corporate governance included have been popularised by the academic literature. It would not be absurd to argue for the imperative need to introduce novel indicators of governance, especially after the implications of the financial crisis. Few of the main regulatory requirements have been the increase in monitoring transparency and the establishment of risk management committees, staffed by member of the BoD. At the time of this thesis, the availability of information on the existence of such committees, as well as the construction of measures on monitoring transparency are far from satisfactory. Nevertheless, as reporting becomes more detailed and information-intensive, researchers will be able to tap into new pools of data and provide strong evidence on the significance of the new measures.

6.3. Limitations

Academic research faces several limitations, and this thesis has been no exception. The main source of limitations can be attributed to the opaqueness of business operations and the information asymmetry between market participants and academics. For instance, Chapter 3 suggests the targetiveness factors that are observable by the whole market do not materially improve prediction accuracy. Decision makers in acquiring firms could potentially use proprietary information, which is unavailable to outsiders. Similarly, as stated in Chapter 4, researchers are unable to observe which executives contribute more to a deal, therefore it is uncertain whose experience matters during an acquisition process; the focus on CEO experience aims to proxy for the experience of the management team, though its effectiveness could be questioned in a stricter framework. The same issue with transparency and information availability affects the inferences of Chapter 5. The main perpetrator of deal-performance improvement has been the advancements in corporate governance. However, several critical aspects of governance, such as risk management committees or level of accountability, cannot be tested directly, as the information has not yet been reported consistently in the companies' proxy statements. As a result, progress in governance has been substituted with factors popular in the literature, which may prove to capture only portion of changes in governance. These limitations are expected to be alleviated in the future, as more information becomes available and researchers would not need to use substitutes or omit variables due to lack of data.

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Tables and Figures

Table 3.1 Sample Statistics.
The table reports annual deal and firm frequency. Column (1) shows the year, columns (2) and (3) display the total number and consideration of deals. Columns (4) to (7) display the number and percentage of complete and withdrawn deals.

Year	Deals	Value	Completed Deals		Withdrawn Deals	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	N	$ bil	N	%	N	%
1988	69	60	21	30.43	48	69.57
1989	59	35	29	49.15	30	50.85
1990	32	24	17	53.13	15	46.88
1991	24	7	14	58.33	10	41.67
1992	23	7	13	56.52	10	43.48
1993	24	58	15	62.50	9	37.50
1994	45	23	24	53.33	21	46.67
1995	54	14	28	51.85	26	48.15
1996	68	106	34	50.00	34	50.00
1997	85	110	50	58.82	35	41.18
1998	103	328	58	56.31	45	43.69
1999	99	371	53	53.54	46	46.46
2000	66	161	35	53.03	31	46.97
2001	40	88	27	67.50	13	32.50
2002	36	74	20	55.56	16	44.44
2003	36	27	19	52.78	17	47.22
2004	46	206	32	69.57	14	30.43
2005	53	110	32	60.38	21	39.62
2006	55	122	35	63.64	20	36.36
2007	48	114	26	54.17	22	45.83
2008	42	110	12	28.57	30	71.43
2009	44	94	29	65.91	15	34.09
2010	37	72	24	64.86	13	35.14
2011	28	54	16	57.14	12	42.86
2012	27	68	19	70.37	8	29.63
Sum	**1,243**	**2,443**	**682**	**-**	**561**	**-**

Table 3.2. Standard Hypotheses and Respective Dummy Variables.
The table displays the continuous variables used in prior literature and the conditions for the corresponding dummy variable assuming the value of 1 in the current study. The first column states the hypotheses as displayed in Palepu (1986), the second column matches each hypothesis to one or two continuous proxies, and the third column regards the condition on which the corresponding dummy variable gets the value of one. All dummy variables assume the value of 1 if the company lies in the bottom (or top for leverage) 25% of the industry in the year t-1.

Hypothesis	Continuous Variable	Condition for Dummy=1
Inefficient Management	Net income over Total Assets	Bottom
	Sales Growth for 1 year	Bottom
Liquidity	Cash and Cash Equivalents over Total Assets	Bottom
Size	Log of Year-end Market Cap.	Bottom
Market-to-Book	Year-end Market Cap. over BV of Assets	Bottom
Price-to-Earnings	Year-end Market Cap. over Net Income	Bottom
Leverage	Long-term Debt over Common Equity	Top

Table 3.3. Summary Statistics.
The table reports the mean and median values for all firm-year observations of target and non-target firms for the period 1988-2012. Column (1) and (2) display the variable name and the type of the statistic. Columns (3) and (4) report the statistic values for non-targets and targets respectively. Column (5) shows the differences, as well as the significance of the differences, between columns (3) and (4). Differences in means are tested with T-tests and differences in medians are tested with Wilcoxon tests. The notations *, **, *** correspond to significance of 10%, 5%, and 1% respectively. Detailed definitions of the variables can be found in the Appendix.

Variable	Type	Non-Targets	Targets	Differences
(1)	**(2)**	**(3)**	**(4)**	**(4) – (3)**
Market Cap. $ mil	Mean	1,306.51	1,848.45	541.94***
	Median	135.09	145.46	10.37***
	N	58,315	4,701	
Market-to-Book	Mean	2.98	2.94	-0.04
	Median	2.04	1.94	-0.10***
	N	58,026	4,639	
Price-to-Earnings	Mean	15.86	15.18	-0.69
	Median	13.47	11.83	-1.64***
	N	58,189	4,691	
Return-on-Assets %	Mean	0.28	-1.03	-1.31***
	Median	4.32	3.39	-0.92***
	N	59,119	4,829	
Sales Growth %	Mean	15.27	12.93	-2.34***
	Median	6.95	4.50	-2.45***
	N	54,966	4,636	
Liquidity %	Mean	18.63	16.79	-1.84***
	Median	10.01	7.84	-2.18***
	N	59,119	4,829	
Leverage %	Mean	50.28	66.60	16.32***
	Median	17.85	28.77	10.92***
	N	59,109	4,823	
Buy-and-Hold Returns %	Mean	0.40	-4.67	-5.07***
	Median	-8.46	-10.64	-2.18***
	N	54,317	4,639	
Past Withdrawn Bid %	Mean	0.00	4.49	4.49***
	N	59,197	4,850	
Serial Acquirer %	Mean	89.41	89.55	0.13
	N	59,197	4,850	
Industry Synergies %	Mean	2.30	2.42	0.11**
	Median	1.93	2.07	0.14***
	N	59,197	4,850	
Activity Concentration %	Mean	2.29	2.59	0.30***
	Median	1.01	1.20	0.19***
	N	59,197	4,850	
Activity Value %	Mean	14.77	16.99	2.23***
	Median	9.00	10.22	1.22***
	N	59,197	4,850	
HHI %	Mean	10.25	10.39	0.14
	Median	7.61	7.78	0.17*
	N	59,197	4,850	
Capital Liquidity $ mil	Mean	122.06	105.94	-16.12***
	Median	75.98	65.75	-10.22***
	N	59,197	4,850	

Table 3.4. Acquisition Target Prediction Model.
The table reports three logit regressions for the sample period 2007-2011. The dependent variable is the event of a company being targeted during a specific year. The first model includes only control variables and the respective accounting variables in continuous format. The second one includes only control variables as well, and the accounting variables have been replaced by dummies that take the value of 1 if the firm lies in the 25% of the industry-year segment with the higher expected targetiveness. Specifically, dummies on Return-on-Assets, Sales Growth, Market-to-Book, Price-to-Earnings, and Liquidity assume the value of 1 if the continuous value is in the bottom 25% of the industry-year distribution, while the dummy on Leverage assumes the value of 1 if the firm lies in the top 25% of the industry-year distribution. The third regression includes the variables in the second regression in addition to novel predictors. All regressions are performed on 1,892 observations, of which 199 are Targets and 1,693 are Non-Targets. The notations of *, **, *** correspond to 10%, 5%, and 1% statistical significance respectively. Detailed definitions of the variables can be found in the Appendix.

Variable	**Models**		
	(1)	**(2)**	**(3)**
Intercept	-1.965***	-1.736***	-2.744***
Buy-and-Hold Abnormal Returns	-0.051	-0.084	-0.083
Log Market Capitalization	-0.072	-0.090**	-0.085**
Return-on-Assets	-0.890**		
Sales Growth	-0.544**		
Market-to-Book	0.016		
Price-to-Earnings	0.000		
Leverage	0.319		
Liquidity	0.009		
Return-on-Assets Dummy		0.422*	0.426*
Sales Growth Dummy		-0.076	-0.070
Market-to-Book Dummy		0.372	0.378
Price-to-Earnings Dummy		0.166	0.132
Leverage Dummy		0.232	0.242
Liquidity Dummy		-0.014	0.033
Capital Liquidity Change			0.428
Activity Concentration Change			2.485**
Activity Value Change			0.021
Serial Acquirer			0.976**
Industry Synergy Change			-2.810
HHI Change			-2.945
Past Withdrawn Bid			0.372
Pseudo R-Square	0.007	0.009	0.016
N	1,892	1,892	1,892

Table 3.5. In-sample Prediction Statistics per Probability Level.
The table exhibits the prediction accuracy statistics with respect to Model 3 in Table 3.4 for different levels of cut-off probability. Column (1) displays different levels of probability increasing by increments of 5%. Columns (2) to (5) show the in-sample correctly and incorrectly classified targets and non-targets assuming the corresponding level of cut-off probability. Column (6) and (7) display the Sensitivity and Specificity at each level of cut-off probability. Column (8) shows the concentration ratio of actual targets in the horizontal sum of columns (2) and (4), which constitutes the "Predicted Targets Portfolio".

Probability	**Correct Prediction**		**Incorrect Prediction**		**Sensitivity**	**Specificity**	**Concentration Ratio**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
(%)	Targets	Non-Targets	Targets	Non-Targets	(%)	(%)	(%)
5	186	90	1,603	13	93.47	5.32	10.40
10	88	1,139	554	111	44.22	67.28	13.71
15	37	1,501	192	162	18.59	88.66	16.16
20	17	1,622	71	182	8.54	95.81	19.32
25	7	1,667	26	192	3.52	98.46	21.21
30	2	1,685	8	197	1.01	99.53	20.00
35	1	1,689	4	198	0.50	99.76	20.00
40	0	1,691	2	199	0.00	99.88	0.00
45	0	1,692	1	199	0.00	99.94	0.00
50	0	1,692	1	199	0.00	99.94	0.00

Table 3.6. Prediction Accuracy in Forecasting.
The table shows the prediction statistics of the forecasting performed on data of 2012, based on the estimates of Model 3 in Table 3.4 and the suggested level of cut-off probability of 25% derived from information in Table 3.5. Column (1) shows the actual number of firms classified as targets and non-targets in 2012. Column (2) shows the number of classified targets and non-targets resulting from the forecasting process. Columns (3) and (4) display the number and percentage of firms correctly predicted as targets and non-targets in Column (2), respectively.

	Actual	**Predicted Targets Portfolio**	**Correctly Predicted**	
	(1)	**(2)**	**(3)**	**(4)**
Targets	27	35	3	8.6%
Non-targets	1,430	1,422	1,366	96.1%

Table 3.7. Prediction Accuracy Comparison with Literature.
The table exhibits prediction accuracy statistics for the current and previous studies. Column (2) shows the "Predicted Targets Portfolio", i.e. the number of predicted Targets in the out-of-sample forecasted portfolios. Column (3) shows the percentage of actual targets in Column (2). Columns (4) and (5) show the Sensitivity and Specificity in the respective study. Column (6) displays the ratio of correctly predicted targets and non-targets over total actual targets and non-targets.

Study	Predicted Targets Porfolio	Portfolio Target Concentration	Sensitivity	Specificity	Overall Accuracy
(1)	(2)	(3)	(4)	(5)	(6)
Current study	35	8.6%	11.1%	95.5%	94.0%
Palepu (1986)	625	3.8%	80.0%	44.7%	45.7%
Powell (2001)	96	2.1%	6.9%	93.3%	90.8%
Powell (2004)	42	4.8%	6.9%	98.9%	96.2%
Brar et al. (2009)	93	45.2%	15.7%	92.8%	71.7%

Table 3.8. Cumulative Portfolio Returns.
The table reports the buy-and-hold abnormal returns of Actual and Predicted Targets and Non-Targets Portfolios for the full calendar year of 2012. The returns have been adjusted for market returns with the equally weighted CRSP index. According to the investment strategy, an investor allocates funds equally to all firms in the "Predicted Targets Portfolio", i.e. the firms that are expected to receive a bid in the year 2012, on the first available trading day in January. At the end of each month, firms that have received a bid are removed from the portfolio and the liquidated funds are allocated equally to the rest of the holdings. At the last trading day of December, the remaining firms in the portfolio are liquidated and the overall returns are adjusted for market returns.

	Portfolios			
	Actual		**Predicted**	
	Targets	Non-Targets	Targets	Non-Targets
BHAR %	43.07	-3.57	4.62	-3.10

Table 3.9. Rolling Model Estimation.
The table reports the logit model estimates for 18 different periods. Each period consists of 5 years and the step for each next period is 1 year. The sampling process for each model is independent. Each model incorporates the same predictors with Model 3 in Table 3.4. The notations of *, **, *** correspond to 10%, 5%, and 1% statistical significance respectively. Detailed definitions of the variables can be found in the Appendix.

Variable	Model								
	1990-1994	**1991-1995**	**1992-1996**	**1993-1997**	**1994-1998**	**1995-1999**	**1996-2000**	**1997-2001**	**1998-2002**
Intercept	-2.336***	-2.348***	-2.483***	-2.367***	-2.208***	-2.131***	-1.924***	-2.037***	-1.798***
Buy-and-Hold Abnormal Returns	-0.152	-0.190	-0.033	0.081	0.018	0.029	0.009	-0.079	-0.127
Log Market Capitalization	-0.171***	-0.167***	-0.107**	-0.087**	-0.061*	-0.071**	-0.050	-0.054*	-0.080**
Return-on-Assets Dummy	0.167	0.324	0.327	0.489**	0.203	0.257	0.368*	0.428**	0.295
Sales Growth Dummy	-0.465	0.369	-0.553	-0.740	-0.106	-0.167	-0.091	-0.358	-0.257
Market-to-Book Dummy	0.113	-0.008	0.221	0.251	0.459**	0.522***	0.263	0.113	-0.017
Price-to-Earnings Dummy	0.265	0.084	-0.333	-0.361	-0.251	-0.236	-0.169	0.113	0.025
Leverage Dummy	0.505**	0.352	0.017	0.215	0.283	0.205	0.285	0.245	0.091
Liquidity Dummy	0.260	0.180	0.050	0.125	0.264	0.170	0.272	0.208	0.150
Capital Liquidity Change	0.024	-0.087	-0.118	-0.225	-0.140	-0.019	-0.049	-0.024	0.046
Activity Conc. Change	1.048	0.479	0.536	0.286	0.175	-0.399	-0.119	-0.002	-0.177
Activity Value Change	1.062*	0.759	0.288	0.698	0.083	0.248	0.508	0.150	0.169
Serial Acquirer	0.350	0.358	0.526*	0.457	0.388	0.534	0.256	0.331	0.166
Industry Synergy Change	1.380	0.611	0.763	0.367	0.577	0.019	-0.995	-0.262	1.595
HHI Change	-1.624	-1.939	-5.597	-8.030**	-7.470**	1.221	0.917	2.032	1.875
Past Withdrawn Bid	1.239***	1.653***	1.334***	1.220***	1.061***	0.928***	0.589**	0.880***	0.241
Pseudo R-Square	0.023	0.025	0.016	0.020	0.017	0.015	0.011	0.012	0.009
N	2,075	2,203	2,350	2,483	2,611	2,668	2,663	2,624	2,564

Table 3.9. Rolling Model Estimation Continued.

Variable	Model								
	1999-2003	**2000-2004**	**2001-2005**	**2002-2006**	**2003-2007**	**2004-2008**	**2005-2009**	**2006-2010**	**2007-2011**
Intercept	-2.068***	-1.942***	-1.726***	-1.801***	-3.124***	-2.498***	-2.617***	-2.744***	-2.744***
Buy-and-Hold Abnormal Returns	-0.166*	-0.121	-0.158	-0.047	-0.073	-0.141	-0.116	-0.083	-0.083
Log Market Capitalization	-0.124***	-0.084**	-0.092**	-0.113***	-0.034	-0.049	-0.105**	-0.085**	-0.085**
Return-on-Assets Dummy	0.147	0.194	-0.029	-0.050	0.157	0.374	-0.028	0.426*	0.426*
Sales Growth Dummy	-0.415	0.037	0.148	-0.150	0.338	-0.206	0.035	-0.070	-0.070
Market-to-Book Dummy	-0.302	-0.388	-0.095	0.121	0.171	0.389	0.221	0.378	0.378
Price-to-Earnings Dummy	0.024	-0.074	-0.102	-0.452	-0.018	-0.041	0.172	0.132	0.132
Leverage Dummy	0.115	0.141	0.158	0.299	0.268	0.291	0.281	0.242	0.242
Liquidity Dummy	0.365*	0.374	0.443*	0.497**	0.471**	0.188	0.097	0.033	0.033
Capital Liquidity Change	0.032	-0.059	0.121	-0.034	0.019	0.014	0.189	0.428	0.428
Activity Conc. Change	-0.058	0.275	-0.526	0.481	0.850	0.724	2.045*	2.485**	2.485**
Activity Value Change	0.129	0.090	-0.074	0.494	0.468	0.057	0.123	0.021	0.021
Serial Acquirer	0.480	0.024	-0.276	0.046	0.968*	0.515	0.979**	0.976**	0.976**
Industry Synergy Change	1.142	-0.879	-2.723*	-2.801*	-3.161**	-3.726**	-1.257	-2.810	-2.80
HHI Change	1.989	-0.816	-9.555*	-11.411**	-14.268**	-14.516***	-8.491*	-2.945	-2.945
Past Withdrawn Bid	0.240	0.467	0.786*	0.316	0.636	0.703*	0.718*	0.372	0.372
Pseudo R-Square	0.012	0.008	0.011	0.013	0.013	0.013	0.014	0.016	0.016
N	2,451	2,362	2,316	2,263	2,185	2,125	2,062	1,977	1,892

Table 3.10. Rolling Model Portfolios Performance.
The table reports the annual buy-and-hold abnormal returns of Actual and Predicted Targets and Non-targets Portfolios. The annual returns are adjusted for the equally-weighted CRSP index. The portfolios of actual firms are formed with respect to the historical status of the firms as targets or non-targets during the respective year. The portfolios of predicted firms are formed by the forecasting process performed on the company information of the respective year. The portfolio strategy requires equally-weighted investment in all securities of the specific classification at the beginning of January of each year. At the end of each month, the holdings of targeted firms are liquidated and reallocated equally to the remaining stocks in the portfolio. The holdings are liquidated completely at the end of December of the corresponding year.

Panel A: Buy-and- Hold Abnormal Returns %					Panel B: Forecasting Performance					
Year	Actual Targets	Actual Non-Targets	Predicted Targets	Predicted Non-Targets	Total Targets	Total Non-targets	Predicted Targets	Predicted Non-targets	Correct Targets	Target Concentration (%)
1995	29.1	-4.8	17.6	-5.8	54	2,781	168	2,667	11	6.5
1996	5.8	-3.1	22.6	-3.3	68	2,990	47	3,011	3	6.4
1997	22.8	0.6	8.6	0.8	85	2,964	135	2,914	12	8.9
1998	26.8	-0.9	30.2	-0.7	103	2,795	71	2,827	4	5.6
1999	35.8	-10.6	29.1	-10.9	99	2,708	121	2,686	9	7.4
2000	40.9	16.8	24.6	17.1	66	2,646	93	2,619	4	4.3
2001	49.6	8.2	59.6	7.0	40	2,517	98	2,459	3	3.1
2002	-6.8	-15.4	27.8	-16.9	36	2,453	103	2,386	4	3.9
2003	-11.2	-4.1	22.1	-4.7	36	2,354	47	2,343	1	2.1
2004	11.7	-7.0	19.3	-7.7	46	2,317	93	2,270	4	4.3
2005	12.2	1.7	29.5	1.5	53	2,229	40	2,242	2	5.0
2006	10.1	-0.6	2.3	-0.5	55	2,138	58	2,135	3	5.2
2007	25.9	2.3	6.1	2.6	48	2,004	128	1,924	3	2.3
2008	24.2	1.1	1.9	1.5	42	1,900	162	1,780	3	1.9
2009	34.7	-0.5	132.2	-3.3	44	1,795	80	1,759	5	6.3
2010	15.4	-6.6	25.9	-8.6	37	1,657	140	1,554	9	6.4
2011	43.3	3.7	19.8	4.0	28	1,533	38	1,523	3	7.9
2012	43.1	-3.6	4.6	-3.1	27	1,430	35	1,422	3	8.6

Table 4.1. Frequency of post-appointment deals.
The table displays the breakdown of 3,785 post-appointment deals by the pre-appointment deal experience of the acquirer CEO. Column (1) counts any type of deal experience. Columns (2) to (5) count the past deals which share similarities with the deals performed by the CEO after the appointment. Column (2) counts the pre-appointment deals where the target was in the same industry as the target in the deal under investigation. Column (3) counts the deals which had targets with the same public status as in the post-appointment deal. Column (4) counts the number of deals which had a deal value +/- 20% of the post-appointment deal. Column (5) considers the deals which had target firms in the same industry as the deal under investigation. Column (6) counts all pre-appointment deals that have any similarity with the post-appointment deal, as they are presented in columns (2) to (5). The bottom row of the table shows the total number of deals in the respective column with at least some CEO deal experience. The figures in the parentheses indicate the percentage compared to the total experienced-CEO deals in column (2).

Pre-appointment Deal Experience	Any Experience	Related Experience				
		Target Industry	Target Public Status	Deal Value	Target Nation	Any Similarity
	(1)	(2)	(3)	(4)	(5)	(6)
0	3,538	3,617	3,634	3,747	3,605	3,545
1	110	65	92	33	93	113
2	35	27	16	5	32	36
3	30	22	17	0	15	29
4	26	19	10	0	14	21
5	10	7	9	0	5	9
6	14	13	2	0	6	15
7	0	0	0	0	2	0
8	4	4	0	0	4	6
9	8	1	4	0	0	1
13	0	0	0	0	8	0
14	9	9	1	0	1	9
20	1	1	0	0	0	1
>0	247	168 (68.0%)	151 (61.1%)	38 (15.4%)	180 (72.9%)	240 (97.2%)

Table 4.2. Deal Breakdown by Industry.
Columns (1) and (3) display the number of acquirers and targets, respectively, categorised by Fama-French 10-industry classification. Columns (2) and (4) show the percentage of the total acquirers and targets, respectively, categorised in the corresponding industry. Column (5) shows the number of deals, for which the acquirer and the target originate from the same industry. Finally, Column (6) shows the percentage of the target in a particular industry that were acquired by companies of the same industry.

Industry	Acquirers		Targets		Acquirers and Targets in the Same Industry	
	#	%	#	%	#	%
	(1)	(2)	(3)	(4)	(5)	(6)
Business Equipment	965	25.5%	990	26.2%	743	26.3%
Manufacturing	803	21.2%	660	17.4%	519	18.4%
Other	716	18.9%	770	20.3%	592	21.0%
Healthcare, Medical Equipment, and Drugs	340	9.0%	365	9.6%	276	9.8%
Wholesale, Retail, and Some Services	244	6.4%	292	7.7%	173	6.1%
Consumer Non-Durables	213	5.6%	211	5.6%	158	5.6%
Oil, Gas, and Coal Extraction and Products	178	4.7%	193	5.1%	155	5.5%
Utilities	143	3.8%	111	2.9%	108	3.8%
Telephone and Television Transmission	92	2.4%	105	2.8%	66	2.3%
Consumer Durables	91	2.4%	88	2.3%	34	1.2%
Total	3,785	100%	3,785	100%	2,824	100%

Table 4.3. Descriptive Statistics of CEO and Acquiring Firms.
Column (1) reports the figures for the whole sample. Columns (2) and (3) display the statistics for the instances where the CEO has or does not have any experience. Columns (4) reports the same figures for CEOs with 1 and 2 deals performed before the appointment in the current firm. Column (5) reports the statistics for the CEOs (and their firm) with at least 3 deals performed before the appointment. Columns (6) to (8) reports the T-test (means) and Wilcoxon Tests (medians) for different CEO experience group pairings. The notations of *, **, *** correspond to statistical significance of 10%, 5%, and 1% respectively.

Panel A : Deal Characteristics

Variable	Type	Experience					T-tests and Wilcoxon Tests		
		All	0	> 0	1 or 2	> 2	(3) - (2)	(5) - (4)	(5) - (2)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deal Value ($ mill.)	Mean	1,252.09	1,164.82	2,502.05	2,201.54	2,929.24	1,337.22**	727.70	1,764.42
	Median	206.54	206.49	220.24	235.15	189.13	13.75	-46.02	-17.36
	N	3,785	3,538	247	145	102			
Relative size (%)	Mean	16.00	15.88	17.74	17.21	18.50	1.87	1.29	2.62
	Median	5.86	5.85	5.97	6.85	4.58	0.11	-2.28*	-1.28
	N	3,785	3,538	247	145	102			
All stock (%)	Mean	7.95	8.06	6.48	6.90	5.88	-1.58	-1.01	-2.17
	N	3,785	3,538	247	145	102			
All cash (%)	Mean	42.8	42.99	40.08	43.45	35.29	-2.91	-8.15	-7.70
	N	3,785	3,538	247	145	102			
Public target (%)	Mean	25.28	25.30	25.10	23.45	27.45	-0.20	4.00	2.15
	N	3,785	3,538	247	145	102			
Tender offer (%)	Mean	6.26	6.36	4.86	6.21	2.94	-1.50	-3.27	-3.42*
	N	3,785	3,538	247	145	102			
Diversification (%)	Mean	25.39	25.13	29.15	33.1	23.53	4.02	-9.57*	-1.60
	N	3,785	3,538	247	145	102			
Hostile (%)	Mean	0.34	0.34	0.40	0.69	0.00	0.07	-0.69	-0.34***
	N	3,785	3,538	247	145	102			
Cross-border (%)	Mean	21.43	21.25	23.89	22.07	26.47	2.63	4.40	5.22
	N	3,785	3,538	247	145	102			
Time to completion (days)	Mean	75.36	74.59	86.30	98.30	69.24	11.71	-29.07**	-5.36
	Median	49.00	48.00	53.00	60.00	46.00	5.00	-14.00	-2.00
	N	3,785	3,538	247	145	102			
Serial Acquirers (%)	Mean	47.13	47.26	45.34	44.14	47.06	-1.91	2.92	-0.20
	N	3,785	3,538	247	145	102			
Premium 4-week (%)	Mean	43.35	43.57	40.33	39.58	41.19	-3.24	1.61	-2.38
	Median	35.57	35.81	31.01	30.29	31.72	-4.81	1.43	-4.09
	N	865	807	58	31	27			

Table 4.3. Continued.

Panel B : CEO Characteristics									
Variable	Type			Experience			T-tests and Wilcoxon Tests		
		All	0	> 0	1 or 2	> 2	(3) - (2)	(5) - (4)	(5) - (2)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Position Experience (# years)	Mean	1.54	1.23	6.04	5.40	6.94	4.81***	1.54***	5.71***
	Median	0.00	0.00	6.00	5.00	7.00	6.00***	2.00***	7.00***
	N	3,785	3,538	247	145	102	.	.	.
Public Position Experience (# years)	Mean	0.25	0.00	3.80	3.03	4.89	3.80***	1.86***	4.89***
	Median	0.00	0.00	3.00	3.00	5.50	3.00***	2.50***	5.50***
	N	3,785	3,538	247	145	102	.	.	.
Tenure (# years)	Mean	4.37	4.44	3.48	3.76	3.08	-0.96***	-0.67*	-1.35***
	Median	3.31	3.37	2.64	3.12	2.11	-0.73***	-1.01**	-1.26***
	N	3,785	3,538	247	145	102	.	.	.
Age (# years)	Mean	55.74	55.63	57.37	56.74	58.27	1.74***	1.53*	2.64***
	Median	55.55	55.39	58.67	57.75	59.03	3.27***	1.29**	3.64***
	N	3,746	3,499	247	145	102	.	.	.
First year CEO	Mean	16.22	15.86	21.46	20.00	23.53	5.60**	3.53	7.67*
	N	3,785	3,538	247	145	102	.	.	.
Insider (%)	Mean	69.83	71.59	44.53	32.41	61.76	-27.06***	29.35***	-9.83**
	N	3,785	3,538	247	145	102	.	.	.
Total Pay ($ mill.)	Mean	7.35	7.23	9.29	8.53	10.34	2.06**	1.81	3.11**
	Median	4.83	4.80	5.25	4.98	6.1	0.45**	1.12	1.30
	N	2,759	2,590	169	98	71	.	.	.
Salary ($ mill.)	Mean	0.95	0.94	1.07	1.03	1.13	0.13**	0.10	0.19*
	Median	0.88	0.88	0.89	0.93	0.85	0.01	-0.08	-0.04
	N	2,770	2,601	169	98	71	.	.	.
Bonus ($ mill.)	Mean	0.82	0.81	0.97	0.95	1.00	0.16	0.06	0.20
	Median	0.26	0.26	0.39	0.39	0.39	0.13*	0.00	0.13
	N	2,770	2,601	169	98	71	.	.	.
Equity-based compensation ($ mill.)	Mean	4.42	4.34	5.60	4.74	6.79	1.26*	2.05	2.45**
	Median	2.35	2.33	2.77	2.71	3.77	0.43	1.06	1.44*
	N	2,770	2,601	169	98	71	.	.	.
Hubristic CEO	Mean	29.49	29.58	27.98	26.73	29.85	-1.61	3.12	0.27
	N	2,933	2,765	168	101	67	.	.	.

Table 4.3 Continued.

Panel C : Acquirer Characteristics									
Variable	Type			Experience				T-tests and Wilcoxon Tests	
		All	0	> 0	1 or 2	> 2	(3) - (2)	(5) - (4)	(5) - (2)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Market Capitalisation ($ mill.)	Mean	11,446.35	10,766.72	21,181.15	14,452.38	30,746.55	10,414.43***	16,294.17**	19,979.83***
	Median	2,987.55	2,994.39	2,560.94	3,097.28	2,444.48	-433.44	-652.81	-549.91
	N	3,785	3,538	247	145	102	.	.	.
Market-to-Book	Mean	3.03	3.02	3.18	3.03	3.40	0.16	0.36	0.37
	Median	2.32	2.32	2.32	2.41	2.25	-0.01	-0.15	-0.07
	N	3,765	3,521	244	143	101	.	.	.
Total Assets ($mil)	Mean	20,460.5	18,854.47	43,567.74	16,043.17	82,156.12	24,713.28**	66,112.96***	63,301.65***
	Median	2,933.45	2,951.87	2,506.83	2,506.83	2,614.50	-445.03	107.66	-337.37
Sales ($ mill.)	Mean	8,256.61	7,799.29	14,836.47	11,846.49	19,028.30	7,037.18***	7,181.8	11,229.01***
	Median	2,215.51	2,235.76	1,859.49	1,859.09	2,375.32	-376.27	516.23	139.56
Capital Expenditure ($ mill.)	Mean	425.64	383.72	1,028.73	907.18	1,199.15	645.01***	291.97	815.42**
	Median	74.89	73.40	84.18	87.46	68.69	10.78	-18.77	-4.70
Cash and Cash Equivalents ($ mill.)	Mean	2,404.27	2,258.44	4,502.40	1,267.66	9,037.39	2,243.97*	7,769.73**	6,778.95**
	Median	220.51	220.91	214.14	200.56	288.11	-6.77	87.56*	67.20
Net Income ($ mill.)	Mean	608.27	574.39	1,095.71	778.53	1,540.39	521.32**	761.85*	965.99**
	Median	135.13	136.03	90.64	118.48	69.38	-45.39	-49.10	-66.65
	N	3,770	3525	245	143	102	.	.	.
Total Debt ($ mill.)	Mean	3,394.67	3,196.66	6,243.58	3,622.30	9,918.52	3,046.92***	6,296.23***	6,721.86***
	Median	578.29	576.46	615.15	597.07	842.2	38.70	245.13	265.74*
	N	3,770	3,525	245	143	102	.	.	.
ROA (%)	Mean	9.34	9.48	7.42	8.20	6.31	-2.06***	-1.89	-3.16***
	Median	9.11	9.17	7.74	8.69	6.13	-1.43***	-2.55**	-3.04***
	N	3,770	3,525	245	143	102	.	.	.
ROE (%)	Mean	11.37	11.21	13.73	18.11	7.59	2.52	-10.51	-3.61
	Median	12.50	12.6	11.09	12.23	9.33	-1.51	-2.89***	-3.26***
	N	3,770	3,525	245	143	102	.	.	.
Net Margin (%)	Mean	6.10	6.30	3.14	3.24	2.99	-3.17***	-0.25	-3.31**
	Median	6.58	6.60	5.85	6.29	5.26	-0.75**	-1.03	-1.34**
	N	3,769	3,524	245	143	102	.	.	.
Leverage (%)	Mean	33.23	32.95	37.26	34.81	40.7	4.31**	5.89*	7.75***
	Median	32.35	32.06	37.98	34.66	41.86	5.91**	7.20*	9.80***
	N	3,770	3,525	245	143	102	.	.	.

Table 4.4. Announcement CARs of Experience Subsamples.
Column (1) reports the CAR and BHAR figures for the whole sample. Columns (3) and (2) display the statistics for the instances where the CEO has or does not have any experience. Columns (4) reports the same figures for CEOs with 1 and 2 deals performed before the appointment in the current firm. Column (5) reports the statistics for the CEOs (and their firm) with at least 3 deals performed before the appointment. Columns (6) to (8) reports the T-test (means) and Wilcoxon Tests (medians) for different CEO experience group pairings. The notations of *, **, *** correspond to statistical significance of 10%, 5%, and 1% respectively.

Type		Experience					T-tests and Wilcoxon Tests		
		All	0	> 0	1 or 2	> 2	(3) - (2)	(5) - (4)	(5) - (2)
Panel A: CAR (%)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(-1, +1)	Mean	0.33***	0.36***	-0.14	-0.22	-0.03	-0.5	0.19	-0.38
	Median	0.22***	0.25***	-0.12	-0.19	0.09	-0.37	0.27	-0.17
(-5, +5)	Mean	0.39***	0.44***	-0.3	-0.11	-0.57	-0.74	-0.46	-1.01
	Median	0.27***	0.31***	-0.81	-0.44	-0.98	-1.12*	-0.53	-1.29
(-20, +1)	Mean	0.21	0.20	0.33	-0.24	1.14	0.13	1.37	0.94
	Median	-0.05	-0.03	-0.15	-0.16	0.06	-0.13	0.21	0.08
(-30, +1)	Mean	0.11	0.07	0.63	-0.23	1.84	0.56	2.07	1.77
	Median	-0.14	-0.13	-0.47	-0.79	-0.04	-0.34	0.75	0.09
(-30, 30)	Mean	-0.6**	-0.66**	0.19	-0.8	1.61	0.85	2.41	2.27
	Median	-0.56**	-0.55*	-0.67	-1.39	-0.18	-0.12	1.22	0.37
	N	3,785	3,538	247	145	102			
Panel B: BHAR (%)									
(0, +11)	Mean	-0.97*	-0.95*	-1.36	0.3	-3.77	-0.42	-4.08	-2.83
	Median	-3.43***	-3.31***	-4.84	-4.33	-5.08	-1.53	-0.75	-1.77
	N	3,731	3,486	245	145	100			

Table 4.5. Correlation Matrix.
The table shows the correlation coefficients among pairs of variables used in the analysis.

Variable		**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Deal Experience	**(1)**	1.00								
Deal Experience - Industry	**(2)**	0.88	1.00							
Deal Experience - Status	**(3)**	0.80	0.73	1.00						
Deal Experience - Value	**(4)**	0.23	0.12	0.23	1.00					
Deal Experience - Target Nation	**(5)**	0.89	0.88	0.71	0.17	1.00				
Deal Experience - Any Similarity	**(6)**	0.96	0.94	0.82	0.22	0.94	1.00			
CAR (-1, +1)	**(7)**	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	1.00		
BHAR (0, +11)	**(8)**	-0.04	-0.06	-0.01	0.04	-0.05	-0.05	0.21	1.00	
Deal Value	**(9)**	0.09	0.10	0.07	-0.02	0.08	0.09	-0.08	0.00	1.00
All cash	**(10)**	-0.02	-0.03	-0.02	-0.01	-0.04	-0.03	0.05	0.00	-0.11
Public target	**(11)**	-0.01	0.01	-0.05	-0.02	0.00	0.00	-0.14	-0.04	0.25
Tender offer	**(12)**	-0.01	-0.02	-0.02	0.02	-0.01	-0.01	-0.05	-0.02	0.01
Diversifying Deals	**(13)**	0.02	-0.05	0.02	0.04	0.00	0.00	0.02	0.01	-0.06
Hostile Deals	**(14)**	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.02
Position Experience	**(15)**	0.30	0.24	0.28	0.15	0.23	0.29	0.01	0.00	0.04
Public Position Experience	**(16)**	0.57	0.45	0.49	0.31	0.48	0.55	-0.02	-0.01	-0.02
Tenure at the time of the deal	**(17)**	-0.06	-0.07	-0.05	-0.03	-0.06	-0.07	0.04	0.00	-0.01
Age at the time of the deal	**(18)**	0.05	0.02	0.06	0.01	0.01	0.04	-0.01	0.01	0.07
First year CEO	**(19)**	0.07	0.07	0.07	0.02	0.07	0.07	0.06	0.00	0.04
Insider CEOs	**(20)**	-0.10	-0.09	-0.09	-0.01	-0.10	-0.11	-0.02	-0.03	0.05
Total Pay	**(21)**	0.09	0.08	0.05	-0.01	0.08	0.08	-0.07	0.00	0.25
Salary	**(22)**	0.07	-0.03	0.04	-0.01	0.01	0.02	-0.04	-0.01	0.21
Bonus	**(23)**	0.03	0.00	0.02	-0.01	0.01	0.01	-0.04	-0.01	0.15
Equity-based compensation	**(24)**	0.09	0.10	0.05	0.00	0.09	0.10	-0.06	0.00	0.21
Hubristic CEO	**(25)**	0.00	-0.01	0.01	0.00	-0.01	0.00	0.11	0.08	-0.04
Market Capitalisation	**(26)**	0.11	0.00	0.04	-0.03	0.03	0.04	-0.07	-0.01	0.41
Acquirer Assets	**(27)**	0.09	0.01	0.04	-0.01	0.04	0.04	-0.03	-0.03	0.34
Sales	**(28)**	0.10	0.01	0.03	-0.02	0.03	0.05	-0.04	0.00	0.31
Capital Expenditure	**(29)**	0.12	0.00	0.04	0.00	0.03	0.04	-0.06	-0.02	0.28
Cash and Cash Equivalents	**(30)**	0.07	0.03	0.04	-0.01	0.04	0.05	-0.02	-0.03	0.30
Net Income	**(31)**	0.10	0.01	0.04	-0.03	0.02	0.04	-0.05	-0.01	0.42
Total Debt	**(32)**	0.11	0.03	0.06	-0.01	0.05	0.06	-0.05	-0.02	0.36
Market-to-Book	**(33)**	0.10	0.11	0.04	-0.04	0.11	0.10	-0.03	-0.03	0.09
ROA	**(34)**	-0.04	-0.03	-0.02	-0.08	-0.03	-0.03	0.05	0.06	0.04
ROE	**(35)**	0.05	0.06	0.03	-0.02	0.05	0.06	0.02	0.05	0.05
Net Margin	**(36)**	-0.02	-0.01	-0.01	-0.06	-0.01	-0.02	-0.01	0.03	0.08
Leverage	**(37)**	0.11	0.07	0.08	0.04	0.09	0.10	0.02	0.02	0.13

Table 4.5. Correlation Matrix Continued

Variable		**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**
Public target	**(11)**	1.00								
Tender offer	**(12)**	0.45	1.00							
Diversifying Deals	**(13)**	-0.10	-0.01	1.00						
Hostile Deals	**(14)**	0.11	0.22	0.01	1.00					
Position Experience	**(15)**	0.04	-0.01	0.02	-0.03	1.00				
Public Position Experience	**(16)**	-0.03	0.00	0.03	0.01	0.41	1.00			
Tenure at the time of the deal	**(17)**	-0.01	0.00	0.00	0.00	-0.08	-0.07	1.00		
Age at the time of the deal	**(18)**	0.01	-0.03	-0.01	0.01	0.11	0.05	0.39	1.00	
First year CEO	**(19)**	-0.02	-0.02	-0.01	-0.01	0.05	0.10	-0.22	-0.09	1.00
Insider CEOs	**(20)**	-0.01	0.01	-0.01	0.01	-0.20	-0.07	0.03	-0.03	0.04
Total Pay	**(21)**	0.18	0.11	0.01	0.00	0.13	0.00	0.03	0.08	-0.01
Salary	**(22)**	0.16	0.13	0.02	0.03	0.10	-0.03	0.12	0.20	-0.08
Bonus	**(23)**	0.10	0.06	0.02	0.02	0.10	-0.02	-0.07	0.08	-0.01
Equity-based compensation	**(24)**	0.16	0.10	0.00	-0.01	0.11	0.01	0.00	0.03	0.01
Hubristic CEO	**(25)**	-0.05	-0.03	0.01	-0.02	0.08	0.02	0.05	-0.01	-0.01
Market Capitalisation	**(26)**	0.19	0.07	-0.03	0.02	0.04	-0.03	0.03	0.07	0.00
Acquirer Assets	**(27)**	0.09	-0.01	-0.04	0.00	0.01	-0.02	0.02	0.07	0.01
Sales	**(28)**	0.17	0.08	-0.01	0.03	0.04	-0.01	0.03	0.08	-0.02
Capital Expenditure	**(29)**	0.12	0.04	-0.03	0.02	0.04	-0.01	0.00	0.05	-0.02
Cash and Cash Equivalents	**(30)**	0.06	-0.01	-0.03	0.00	0.01	-0.02	0.02	0.05	0.02
Net Income	**(31)**	0.15	0.03	-0.03	0.01	0.00	-0.03	0.04	0.06	-0.01
Total Debt	**(32)**	0.14	0.02	-0.07	0.03	0.05	-0.03	0.01	0.09	0.01
Market-to-Book	**(33)**	0.05	0.03	0.00	0.00	0.05	0.07	-0.07	-0.07	0.01
ROA	**(34)**	-0.02	0.04	0.09	-0.01	-0.11	-0.05	0.00	-0.02	0.00
ROE	**(35)**	0.02	0.03	0.01	0.00	0.01	0.01	-0.01	0.01	-0.01
Net Margin	**(36)**	0.03	0.01	0.02	-0.01	-0.04	-0.05	0.04	0.01	-0.04
Leverage	**(37)**	0.05	-0.02	-0.01	0.02	0.08	0.04	-0.02	0.08	-0.02

Table 4.5. Correlation Matrix Continued

Variable		**(20)**	**(21)**	**(22)**	**(23)**	**(24)**	**(25)**	**(26)**	**(27)**	**(28)**
Insider CEOs	**(20)**	1.00								
Total Pay	**(21)**	-0.01	1.00							
Salry	**(22)**	0.02	0.57	1.00						
Bonus	**(23)**	0.00	0.47	0.59	1.00					
Equity-based compensation	**(24)**	-0.03	0.95	0.39	0.28	1.00				
Hubristic CEO	**(25)**	-0.08	-0.04	-0.06	0.01	-0.02	1.00			
Market Capitalisation	**(26)**	0.08	0.39	0.39	0.26	0.30	-0.08	1.00		
Acquirer Assets	**(27)**	0.06	0.26	0.24	0.30	0.18	-0.08	0.57	1.00	
Sales	**(28)**	0.08	0.36	0.42	0.28	0.25	-0.10	0.72	0.48	1.00
Capital Expenditure	**(29)**	0.08	0.25	0.36	0.19	0.17	-0.07	0.65	0.31	0.71
Cash and Cash Equivalents	**(30)**	0.04	0.23	0.15	0.29	0.17	-0.05	0.47	0.91	0.39
Net Income	**(31)**	0.08	0.30	0.31	0.21	0.21	-0.08	0.85	0.63	0.78
Total Debt	**(32)**	0.08	0.33	0.35	0.39	0.23	-0.10	0.57	0.77	0.52
Market-to-Book	**(33)**	0.01	0.12	0.01	0.01	0.13	0.06	0.15	-0.05	0.00
ROA	**(34)**	0.08	0.04	0.03	-0.02	0.03	0.06	0.08	-0.13	0.02
ROE	**(35)**	0.00	0.04	0.03	0.03	0.03	0.02	0.04	0.01	0.03
Net Margin	**(36)**	0.03	0.04	0.03	0.01	0.02	-0.02	0.14	0.08	0.01
Leverage	**(37)**	0.02	0.09	0.18	0.13	0.04	0.03	0.10	0.23	0.12

Variable		**(29)**	**(30)**	**(31)**	**(32)**	**(33)**	**(34)**	**(35)**	**(36)**	**(37)**
Capital Expenditure	**(29)**	1.00								
Cash and Cash Equivalents	**(30)**	0.16	1.00							
Net Income	**(31)**	0.64	0.56	1.00						
Total Debt	**(32)**	0.48	0.67	0.57	1.00					
Market-to-Book	**(33)**	0.00	-0.04	0.03	-0.02	1.00				
ROA	**(34)**	0.01	-0.10	0.09	-0.18	0.27	1.00			
ROE	**(35)**	0.03	0.01	0.07	0.03	0.10	0.16	1.00		
Net Margin	**(36)**	0.04	0.09	0.23	0.10	0.07	0.45	0.28	1.00	
Leverage	**(37)**	0.14	0.19	0.11	0.41	0.14	-0.13	0.04	-0.01	1.00

Table 4.6. Regressions of Acquirer Announcement CAR on Deal Experience.
The table shows regressions of the deal announcement CAR (-1, +1) on deal-experience measures and other control variables. Columns (1) to (4) display regressions on the full sample of CEOs. Columns (5) to (8) display regressions on the sample of CEOs with job experience in CEO positions prior to their appointment in the firm at hand. For detailed variable description, see Appendix. The notations of *, **, *** correspond to statistical significance of 10%, 5%, and 1% respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.206	1.219	1.209	0.613	0.162	5.545**	5.463**	4.013
Deal Experience	-0.204	-0.138		0.012	-0.228	-0.132		0.088
Deal Experience Square	0.019	0.010		-0.009	0.020	0.010		-0.018
Deal Order		0.077		0.056		0.000		0.055
Deal Order Square		-0.001		-0.002		0.003		0.000
CEO Deal Order			0.084				0.020	
CEO Deal Order Square			-0.002				0.001	
Position Experience		-0.044	-0.049	-0.099				
Position Experience Square		0.011	0.010	0.016				
Salary		-0.320	-0.379	-0.414		-0.108	-0.204	-0.450
Bonus		-0.218	-0.211	-0.302		0.342	0.347	-0.067
Equity-based compensation		-0.152	-0.150	-0.153		-0.377	-0.381	-0.263
Insider		-0.164	-0.160	-0.324		-0.751*	-0.722*	-1.009**
CEO Age		-0.015	-0.016	-0.013		-0.054	-0.056	-0.039
Tenure		0.037	0.044	0.035		0.039	0.067	-0.021
Market Cap.		-0.138	-0.132	-0.144		-0.340	-0.322	-0.319
CAPEX		0.036	0.032	0.091		0.039	0.026	0.091
Market-to-Book		-0.014	-0.015	-0.059		0.018	0.018	-0.066
ROA		2.768	2.852	3.647*		-3.590	-3.363	-3.449
Leverage		0.681	0.672	0.902		1.476	1.399	2.088**
Relative Size		1.919*	1.896*	1.986*		1.336	1.296	0.813
All cash		0.499**	0.501**	0.614***		0.426	0.426	0.435
Public Target		-1.789***	-1.779***	-1.591***		-1.197**	-1.184**	-0.633
Tender Offer		0.347	0.349	0.212		0.075	0.074	0.052
Diversification		-0.173	-0.173	-0.116		0.056	0.053	0.136
Hostile Bid		0.579	0.540	0.555		-4.914***	-5.033***	-5.325***
Hubristic CEO				0.984***				1.236***
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square (%)	0.765	3.438	3.482	4.865	0.668	2.862	2.969	5.369
N	3,785	2,740	2,740	2,355	1,163	799	799	662

Table 4.7. Regressions of Acquirer Announcement CAR on Related Experience.
The table shows regressions of the deal announcement CAR (-1, +1) on related deal-experience measures and other control variables. Columns (1) to (4) display regressions on the full sample of CEOs. Columns (5) to (8) display regressions on the sample of CEOs with job experience in CEO positions prior to their appointment in the firm at hand. For detailed variable description, see Appendix. The notations of *, **, *** correspond to statistical significance of 10%, 5%, and 1% respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	1.282	1.252	1.225	1.295	1.273	5.240**	5.139**	5.126**	5.318**	5.203**
Deal Experience - Industry	-0.167					-0.172				
Deal Experience - Industry Square	0.012					0.013				
Deal Experience - Status		-0.414					-0.407			
Deal Experience - Status Square		0.052*					0.056*			
Deal Experience - Value			0.371					0.371		
Deal Experience - Value Square			0.569					0.617		
Deal Experience - Target Nation				-0.043					-0.062	
Deal Experience - Target Nation Square				-0.001					0.000	
Deal Experience - Any Similarity					-0.180					-0.178
Deal Experience - Any Similarity Square					0.013					0.013
Position Experience	-0.030	-0.022	-0.038	-0.03	-0.024					
Position Experience Square	0.009	0.009	0.008	0.009	0.009					
Salary	-0.375	-0.348	-0.393	-0.376	-0.351	-0.247	-0.204	-0.295	-0.265	-0.200
Bonus	-0.202	-0.197	-0.191	-0.199	-0.202	0.354	0.370	0.372	0.354	0.356
Equity-based compensation	-0.145	-0.144	-0.152	-0.142	-0.146	-0.383	-0.382	-0.404	-0.373	-0.386
Insider	-0.162	-0.165	-0.170	-0.165	-0.162	-0.702*	-0.716*	-0.725*	-0.715*	-0.703*
CEO Age	-0.017	-0.016	-0.017	-0.017	-0.017	-0.052	-0.050	-0.054	-0.054	-0.051
Tenure	0.065*	0.065**	0.068**	0.066**	0.065**	0.081	0.081	0.092	0.084	0.080
Market Cap.	-0.124	-0.125	-0.118	-0.126	-0.125	-0.316	-0.316	-0.301	-0.319	-0.318
CAPEX	0.024	0.024	0.025	0.027	0.025	0.020	0.019	0.027	0.029	0.022
Market-to-Book	-0.018	-0.018	-0.017	-0.017	-0.018	0.019	0.022	0.025	0.023	0.019
ROA	2.847	2.851	2.977	2.880	2.842	-3.434	-3.46	-2.992	-3.336	-3.464
Leverage	0.713	0.736	0.718	0.720	0.721	1.437	1.505	1.415	1.456	1.462
Relative Size	1.889***	1.879*	1.911*	1.881*	1.885*	1.334	1.305	1.394	1.309	1.318
All cash	0.503**	0.503**	0.505***	0.498**	0.500**	0.432	0.437	0.432	0.409	0.427
Public Target	-1.795***	-1.803***	-1.787***	-1.795***	-1.797***	-1.183**	-1.213**	-1.180**	-1.198**	-1.190**
Tender Offer	0.357	0.367	0.350	0.360	0.361	0.049	0.086	0.045	0.070	0.062
Diversification	-0.161	-0.145	-0.158	-0.154	-0.150	0.037	0.090	0.042	0.063	0.073
Hostile Bid	0.580	0.569	0.572	0.581	0.590	-5.004***	-5.014***	-4.98***	-4.927***	-4.855***
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	3.442	3.485	3.484	3.432	3.449	2.993	3.169	3.155	2.961	3.012
N	2,740	2,740	2,740	2,740	2,740	799	799	799	799	799

Table 4.8. BHAR Regressions on General and Related Deal Experience.
The table shows regressions of the annual BHAR (0, +11) on deal-experience measures and other control variables. All regressions are performed on the full sample of acquisitions. Columns with odd numbers include only the level of the respective experience variable. Columns with even numbers include both the level and the squared terms of the respective experience variable. For detailed variable description, see Appendix. The notations of *, **, *** correspond to statistical significance of 10%, 5%, and 1% respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.017	-1.418	0.334	-0.436	0.504	0.127
Deal Experience	-1.414*	3.841**				
Deal Experience Square		-0.523***				
Deal Order	-0.163	0.344				
Deal Order Square		-0.029				
Deal Experience - Industry			-2.037**	3.778*		
Deal Experience - Industry Square				-0.537***		
Deal Experience - Status					-0.880	1.449
Deal Experience - Status Square						-0.429
Position Experience	-0.006	0.579	-0.016	0.527	-0.129	0.377
Position Experience Square		-0.117		-0.106		-0.073
Salary	-5.71	-7.132	-6.548	-6.939	-5.809	-6.304
Bonus	0.700	0.620	0.645	0.666	0.695	0.662
Equity-based compensation	1.343	1.287	1.393	1.370	1.307	1.205
Insider	-3.150**	-3.331**	-3.266**	-3.439**	-3.062*	-3.010*
CEO Age	0.024	0.024	0.028	0.033	0.024	0.021
Tenure	0.001	-0.042	-0.079	-0.077	-0.059	-0.061
Market Cap.	-0.287	-0.207	-0.312	-0.334	-0.276	-0.210
CAPEX	0.208	0.333	0.251	0.375	0.189	0.217
Market-to-Book	-0.826***	-0.762***	-0.789***	-0.739**	-0.853***	-0.870***
ROA	39.954***	40.729***	39.800***	40.411***	39.986***	40.418***
Leverage	7.219*	7.333*	6.981*	7.391*	6.761	6.868*
Relative Size	9.660*	9.660*	9.867*	9.800*	9.507*	9.564*
All cash	1.330	1.141	1.306	1.140	1.348	1.310
Public Target	-3.874**	-3.614*	-3.821**	-3.676**	-3.796**	-3.699**
Tender Offer	0.730	0.347	0.655	0.530	0.724	0.602
Diversification	0.597	0.354	0.302	0.473	0.482	0.449
Hostile Bid	0.391	-0.345	0.177	0.114	0.078	0.133
Hubristic CEO	4.781***	4.611***	4.498***	4.430***	4.681***	4.684***
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	1.649	2.061	1.800	2.146	1.504	1.467
N	2,322	2,322	2,322	2,322	2,322	2,322

Table 4.8. Regressions on General and Related Deal Experience Continued.

Variable	(7)	(8)	(9)	(10)	(11)	(12)
Constant	8.123	7.846	0.687	-0.622	0.244	-0.307
Deal Experience - Value	1.316	29.576*				
Deal Experience - Value Square		-20.411				
Deal Experience - Target Nation			-1.929**	5.022**		
Deal Experience - Target Nation Square				-0.692***		
Deal Experience - Any Similarity					-1.737**	3.553*
Deal Experience - Any Similarity Square						-0.512***
Position Experience	-0.065	0.275	-0.038	0.468	0.001	0.455
Position Experience Square		-0.047		-0.103		-0.100
Salary	-8.632*	-8.687*	-6.124	-7.063	-6.014	-7.176
Bonus	2.144	2.073	0.673	0.607	0.635	0.629
Equity-based compensation	1.821*	1.796*	1.329	1.365	1.359	1.355
Insider	-0.779	-0.714	-3.250**	-3.427**	-3.234**	-3.417**
CEO Age	-0.071	-0.073	0.022	0.032	0.029	0.027
Tenure	0.360*	0.351*	-0.070	-0.069	-0.078	-0.070
Market Cap.	-0.777	-0.705	-0.326	-0.298	-0.328	-0.289
CAPEX	0.131	0.101	0.264	0.356	0.247	0.364
Market-to-Book	-0.666**	-0.668**	-0.792***	-0.748**	-0.799***	-0.748**
ROA	32.302***	32.429***	39.678***	40.814***	39.851***	40.442***
Leverage	8.556**	8.391**	7.010*	7.382*	7.047*	7.318*
Relative Size	6.376	6.523*	9.765*	9.673*	9.750*	9.838*
All cash	0.866	0.835	1.264	1.127	1.270	1.150
Public Target	-3.412*	-3.359*	-3.825**	-3.644**	-3.846**	-3.659*
Tender Offer	0.895	0.765	0.722	0.419	0.725	0.433
Diversification	-0.157	-0.188	0.481	0.263	0.483	0.325
Hostile Bid	0.342	0.455	0.264	-0.168	0.274	-0.067
Hubristic CEO			4.530***	4.408***	4.539***	4.441***
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.998	1.043	1.732	2.176	1.736	2.118
N	2,702	2,702	2,322	2,322	2,322	2,322

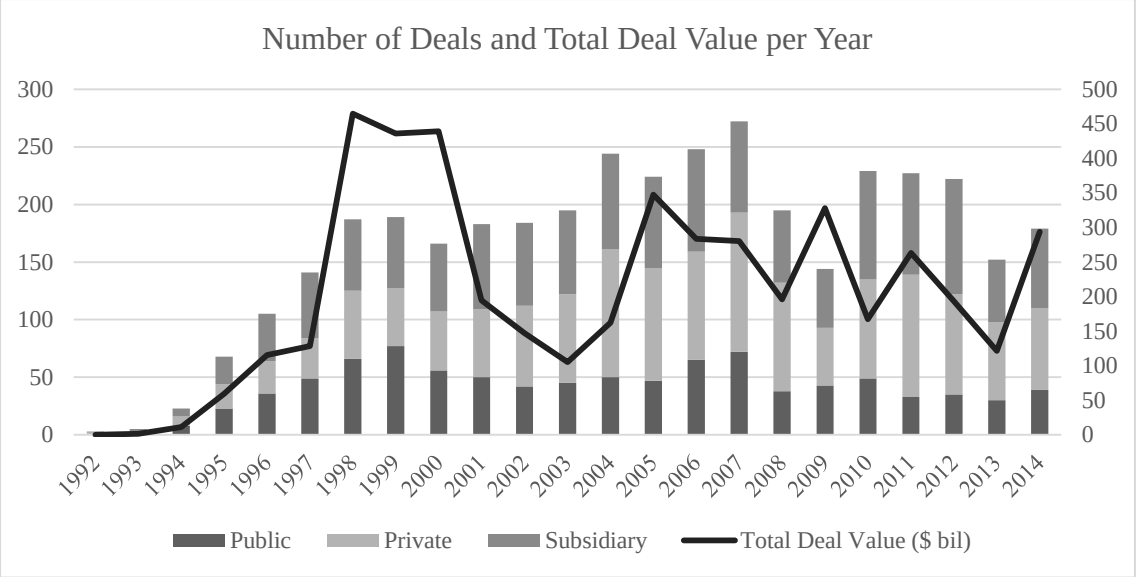

Figure 4.1. Number and Total Value of Deals per Year.

The number of deals is separated according to Target Public Status (left vertical axis). The deal values have been transformed in 2014 dollar terms (right vertical axis).

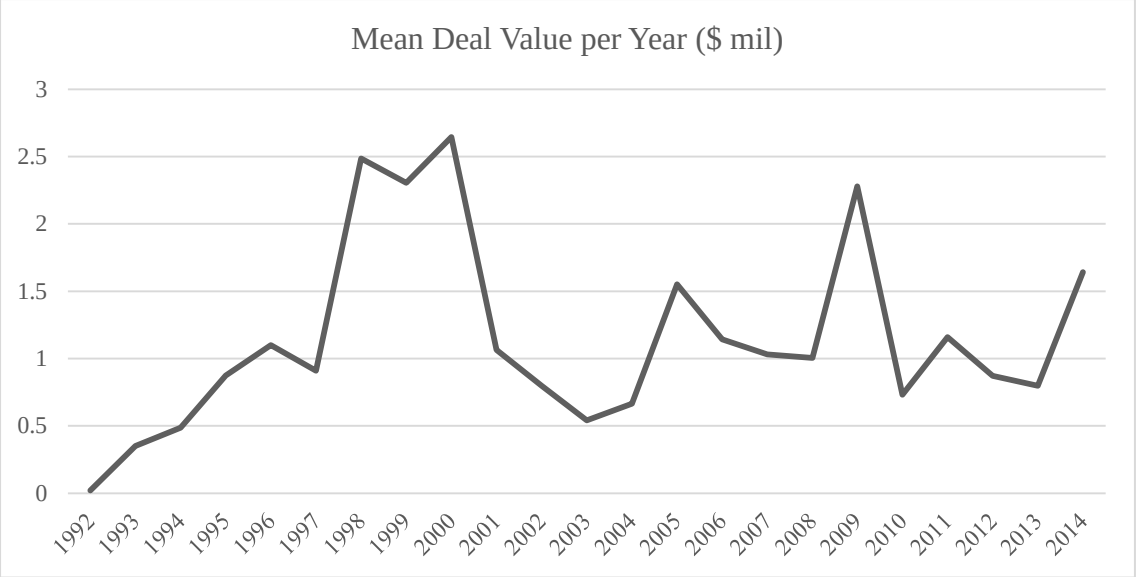

Figure 4.2. Mean Deal Value per Year.

The graph shows the average deal value for the S&P1500 deals per year. The deal values have been transformed in 2015 dollar terms.

Figure 4.3. Number of CEO Appointments per Year.

The graph shows the number of CEO appointments in the final sample of S&P 1500 firms.

Table 5.1. Sample distribution.
The table shows the annual number of deals and total consideration offered for mega and non-mega deals for 3,604 mega-deals and 22,472 non-mega deals. The sample is from SDC and includes completed and withdrawn deals announced between 1990 and 2015. Repurchases, recapitalisations, self-tenders, exchange offers, acquisitions of remaining interest, minority-stake purchases and intra-corporate restructuring are excluded. Transactions have an inflation-adjusted value of at least $5 mil and the target-to-acquirer relative size is at least 1%. The acquirer owns no more than 20% of the target prior to the announcement and seeks to own more than 50% following completion. Acquiring firms are U.S companies listed in NYSE, AMEX or NASDAQ with data on CRSP. Targets are public or private firms.

Year	Mega Deals (n)	Total Value Mega Deals ($bil)	Rest of Deals (n)	Total Value Non-mega Deals ($bil)
1990	39	91.66	464	34.53
1991	45	56.65	502	38.08
1992	53	72.17	730	50.61
1993	72	203.29	945	62.36
1994	101	166.88	1164	84.84
1995	120	323.31	1220	96.36
1996	174	480.63	1494	122.99
1997	259	698.93	1807	159.18
1998	265	1358.90	1900	164.34
1999	292	1468.96	1388	138.06
2000	295	1105.90	1159	116.06
2001	150	590.16	849	86.21
2002	94	214.20	782	68.50
2003	101	203.75	731	70.66
2004	116	360.51	880	81.97
2005	135	528.87	847	82.43
2006	166	611.48	820	86.54
2007	166	454.19	791	82.36
2008	102	380.96	582	56.34
2009	76	386.90	391	39.80
2010	125	255.64	474	55.32
2011	111	396.32	520	63.61
2012	139	261.25	555	60.65
2013	115	261.30	466	56.23
2014	128	644.88	564	71.19
2015	165	891.44	447	54.81
All	3,604	12,469.10	22,472	2,084.00

Table 5.2. Deal distribution by industry sector and time period.
The table reports the breakdown of deals by the industry classification of the target firm and the time period for the sample of mega-deals (Panel A) and non-mega deals (Panel B). The industry split follows Kenneth French's 12 industry classification. The percentage of the overall corresponding sample is displayed in parentheses next to the number of deals pertaining to each sector.

Industry of Target Firm	All		1990-1999		2000-2009		2010-2015	
Panel A - Mega Deals								
Business Equipment	633	(17.6%)	196	(13.8%)	305	(21.8%)	132	(16.9%)
Chemicals and Allied Products	107	(3.0%)	47	(3.3%)	25	(1.8%)	35	(4.5%)
Consumer Durables	58	(1.6%)	28	(2.0%)	20	(1.4%)	10	(1.3%)
Consumer Non-Durables	214	(5.9%)	83	(5.8%)	77	(5.5%)	54	(6.9%)
Finance	584	(16.2%)	299	(21.1%)	206	(14.7%)	79	(10.1%)
Healthcare, Medical Equipment, and Drugs	387	(10.7%)	117	(8.2%)	140	(10.0%)	130	(16.6%)
Manufacturing	307	(8.5%)	111	(7.8%)	122	(8.7%)	74	(9.5%)
Oil, Gas, and Coal Extraction and Products	232	(6.4%)	57	(4.0%)	119	(8.5%)	56	(7.2%)
Telephone and Television Transmission	289	(8.0%)	141	(9.9%)	100	(7.1%)	48	(6.1%)
Utilities	197	(5.5%)	87	(6.1%)	74	(5.3%)	36	(4.6%)
Wholesale, Retail, and Some Services	216	(6.0%)	97	(6.8%)	69	(4.9%)	50	(6.4%)
Other	380	(10.5%)	157	(11.1%)	144	(10.3%)	79	(10.1%)
Panel B – Non-mega deals								
Business Equipment	5,220	(23.2%)	2,113	(18.2%)	2,351	(30.0%)	756	(25.0%)
Chemicals and Allied Products	349	(1.6%)	179	(1.5%)	108	(1.4%)	62	(2.0%)
Consumer Durables	391	(1.7%)	212	(1.8%)	121	(1.5%)	58	(1.9%)
Consumer Non-Durables	854	(3.8%)	450	(3.9%)	301	(3.8%)	103	(3.4%)
Finance	3,982	(17.7%)	2,260	(19.5%)	1,195	(15.3%)	527	(17.4%)
Healthcare, Medical Equipment, and Drugs	2,079	(9.3%)	964	(8.3%)	772	(9.9%)	343	(11.3%)
Manufacturing	1,973	(8.8%)	1,069	(9.2%)	602	(7.7%)	302	(10.0%)
Oil, Gas, and Coal Extraction and Products	990	(4.4%)	548	(4.7%)	330	(4.2%)	112	(3.7%)
Telephone and Television Transmission	1,029	(4.6%)	619	(5.3%)	321	(4.1%)	89	(2.9%)
Utilities	195	(0.9%)	101	(0.9%)	67	(0.9%)	27	(0.9%)
Wholesale, Retail, and Some Services	1,864	(8.3%)	1,184	(10.2%)	526	(6.7%)	154	(5.1%)
Other	3,546	(15.8%)	1,915	(16.5%)	1,138	(14.5%)	493	(16.3%)

Table 5.3. Summary statistics.

The table presents means, medians, and sample size for a number of firm and deal characteristics for mega and non-mega deals and different sample periods along with differentials between sub-periods. The variable descriptions are reported in the Appendix. The notation *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively.

		Mega Deals						Non-mega Deals					
		1990-99 (1)	2000-09 (2)	2010-15 (3)	Differences (3) - (2)	Differences (3) - (1)	Differences (2) - (1)	1990-99 (4)	2000-09 (5)	2010-15 (6)	Differences (6) - (5)	Differences (6) - (4)	Differences (5) - (4)
Acquirer characteristics													
Acquirer Market Cap ($mil)	*mean*	14,229.35	24,888.78	23,762.13	-1126.65	9,532.78***	10,659.43***	1,219.48	1,812.56	2340.29	527.72***	1,120.81***	593.08***
	median	4,641.4	7,890.57	8051.26	160.68	3,409.86***	3,249.18***	357.79	637.36	863.98	226.62***	506.19***	279.57***
	n	1,420	1,401	727				11,614	7,832	2,920			
Acquirer Assets ($mil)	*mean*	22,532.33	46,900.90	35,853.50	-11,047.4	13,321.18**	24,368.57**	3,260	2,823.55	3,190.63	367.08*	-69.44	-436.52**
	median	5,650.84	6,883.43	8,619.31	1,735.88***	2,968.47***	1,232.59***	415.66	694.90	1,011.34	316.43***	595.68***	279.24***
	n	1,294	1,300	715				8,879	6,735	2,807			
Acquirer Market-to-Book	*mean*	4.62	4.89	3.67	-1.23***	-0.96***	0.27	4.27	3.51	2.88	-0.63***	-1.39***	-0.76***
	median	2.64	2.60	2.35	-0.26***	-0.30***	-0.04	2.31	2.22	1.93	-0.28***	-0.38***	-0.09***
	n	1,292	1,301	715				8,805	6,738	2,806			
Acquirer FCF-to-Assets	*mean*	0.11	0.13	0.14	0.01	0.02***	0.02**	0.08	0.08	0.10	0.02***	0.03***	0.00
	median	0.09	0.12	0.12	0.00**	0.03***	0.03***	0.06	0.08	0.09	0.01***	0.03***	0.02***
	n	1,292	1,300	715				8,773	6,735	2,806			
Acquirer Leverage	*mean*	25.62	24.73	27.26	2.53***	1.65*	-0.89	22.02	19.34	19.55	0.22	-2.47***	-2.69***
	median	23.57	22.25	22.85	0.60**	-0.72	-1.31	16.59	15.17	14.51	-0.67	-2.09***	-1.42***
	n	1,292	1,300	715				8,773	6,735	2,806			
Serial Acquirer %	*mean*	38.94	48.75	39.48	-9.27***	0.53	9.81***	23.95	30.09	29.86	-0.23	5.92***	6.15***
	n	1,420	1,401	727				11,614	7,832	2,920			
Acquirer Hubris %	*mean*	46.85	41.50	34.55	-6.95**	-12.30***	-5.35**	47.01	47.38	42.37	-5.02***	-4.65**	0.37
	n	762	853	382				2,008	2,503	930			
EBC %	*mean*	39.37	45.76	55.82	10.07***	16.45***	6.39***	36.56	42.29	47.31	5.03***	10.76***	5.73***
	median	38.37	51.24	59.65	8.41***	21.28***	12.87***	34.03	44.74	51.32	6.58***	17.29***	10.71***
	n	465	682	425				987	1,809	1,073	.	.	.
BCF Antitakeover Index	*mean*	1.49	2.15	1.58	-0.56***	0.09	0.65***	1.62	2.22	1.84	-0.37***	0.23***	0.60***
	median	1.00	2.00	1.00	-1.00***	0.00	1.00***	2.00	2.00	2.00	-0.00***	0.00***	0.00***
	n	372	687	379				1,270	1,956	943			
Board Independence %	*mean*	62.81	69.30	81.82	12.52***	19.01***	6.49***	58.67	67.11	78.44	11.33***	19.77***	8.44***
	median	66.67	72.73	85.71	12.99***	19.05***	6.06***	60.00	70.00	80.00	10.00***	20.00***	10.00***
	n	451	943	477				852	2,557	1,182			
Ind. Directors Ownership %	*mean*		0.57	0.76	0.19*				1.02	1.25	0.23***		
	median		0.15	0.19	0.04***				0.40	0.53	0.13***		
	n		935	472					2,552	1,182			

Table 5.3. Continued.

		Mega Deals						Non-mega Deals					
		1990-99 (1)	2000-09 (2)	2010-15 (3)	Differences (3) - (2)	Differences (3) - (1)	Differences (2) - (1)	1990-99 (4)	2000-09 (5)	2010-15 (6)	Differences (6) - (5)	Differences (6) - (4)	Differences (5) - (4)
Target characteristics													
Target Market Cap ($mil)	*mean*	3,166.10	3,596.53	3,279.55	-316.98	113.45	430.42	108.66	115.49	133.37	17.88**	24.71***	6.83
	median	878.03	1,212.37	1,428.81	216.44	550.78***	334.34***	76.48	86.14	109.78	23.64***	33.30***	9.66
	n	793	634	235				1,502	806	207			
Target Assets ($mil)	*mean*	6,098.26	8,446.73	3,862.66	-4,584.07***	-2,235.60**	2,348.47	284.57	312.95	289.79	-23.16	5.22	28.38
	median	1,193.57	1,013.18	1,238.88	225.7	45.3	-180.4	81.82	60.73	72.95	12.22**	-8.87	-21.09***
	n	981	877	357				4,091	2,131	713			
Target Market-to-Book	*mean*	3.67	3.79	2.98	-0.80**	-0.69*	0.12	2.38	1.94	1.89	-0.05	-0.49*	-0.43***
	median	2.31	2.38	2.19	-0.19**	-0.12*	0.07	1.45	1.38	1.11	-0.27***	-0.34***	-0.08**
	n	791	706	244				1,473	1,037	276			
Deal characteristics													
Deal Value ($mil)	*mean*	3,465.76	3,452.47	2,974.76	-477.71	-490.99	-13.29	81.91	98.42	118.58	20.15***	36.67***	16.51***
	median	1,135.70	1,230.31	1,291.31	61.00	155.61**	94.61**	37.81	51.74	66.78	15.04***	28.97***	13.93***
	n	1,420	1,401	727				11,614	7,832	2,920			
Relative Size	*mean*	59.79	50.53	41.43	-9.10***	-18.36***	-9.26***	29.37	21.20	17.67	-3.53***	-11.70***	-8.17***
	median	32.82	20.48	20.88	0.40	-11.93***	-12.34***	10.56	7.78	6.89	-0.89***	-3.68***	-2.78***
	n	1,420	1,401	727				11,614	7,832	2,920			
All Stock %	*mean*	35.21	18.99	5.50	-13.48***	-29.71***	-16.22***	28.27	12.18	5.62	-6.56***	-22.65***	-16.09***
	n	1,420	1,401	727				11,614	7,832	2,920			
Stock Consideration %	*mean*	47.61	32.79	14.76	-18.03***	-32.85***	-14.82***	36.39	22.04	12.86	-9.18***	-23.53***	-14.35***
	median	44.56	0.00	0.00	0.00***	-44.56***	-44.56***	0.00	0.00	0.00	0.00***	0.00***	0.00***
	n	1,420	1,401	727				11,614	7,832	2,920			
All Cash %	*mean*	18.66	30.48	45.94	15.46***	27.28***	11.82***	19.63	33.06	39.18	6.12***	19.55***	13.43***
	n	1,420	1,401	727				11,614	7,832	2,920			
Cash Consideration %	*mean*	29.93	45.55	65.13	19.58***	35.20***	15.62***	29.85	47.76	53.86	6.10***	24.01***	17.91***
	median	0.00	38.22	88.22	50.00***	88.22***	38.22***	0.00	46.42	66.18	19.76***	66.18***	46.42***
	n	1,420	1,401	727				11,614	7,832	2,920			
Synergy Motive %	*mean*	14.29	25.22	63.73	38.50***	49.44**	10.94	4.76	8.16	31.00	22.84***	26.24***	3.39
	n	7.00	1,237	714				21.00	5,052	2,413			
Competition %	*mean*	8.80	7.14	4.13	-3.01***	-4.68***	-1.67	1.52	1.23	0.65	-0.58***	-0.87***	-0.30*
	n	1,420	1,401	727				11,614	7,832	2,920			
Public %	*mean*	62.18	53.60	39.20	-14.40***	-22.98***	-8.58***	18.03	15.93	12.77	-3.16***	-5.26***	-2.10***
	n	1,420	1,401	727				11,614	7,832	2,920			
Hostile %	*mean*	5.00	1.78	0.83	-0.96**	-4.17***	-3.22***	0.62	0.15	0.10	-0.05	-0.52***	-0.47***
	n	1,420	1,401	727				11,614	7,832	2,920			
Withdrawn %	*mean*	15.00	9.56	7.15	-2.41*	-7.85***	-5.44***	6.44	4.32	1.95	-2.36***	-4.49***	-2.12***
	n	1,420	1,401	727				11,614	7,832	2,920			

Table 5.3. Continued.

		Mega Deals						Non-mega Deals					
		1990-99 (1)	2000-09 (2)	2010-15 (3)	Differences (3) - (2)	Differences (3) - (1)	Differences (2) - (1)	1990-99 (4)	2000-09 (5)	2010-15 (6)	Differences (6) - (5)	Differences (6) - (4)	Differences (5) - (4)
Toehold %	mean	1.34	0.86	1.10	0.24	-0.24	-0.48	0.53	0.52	0.31	-0.22	-0.22*	0.00
	n	1,420	1,401	727				11,614	7,832	2,920			
Diversified %	mean	32.04	33.69	32.87	-0.82	0.83	1.65	37.83	37.69	37.81	0.12	-0.03	-0.14
	n	1,420	1,401	727				11,614	7,832	2,920			
Cross Border %	mean	10.21	16.20	19.39	3.19*	9.18***	5.99***	10.13	14.85	20.55	5.70***	10.42***	4.72***
	n	1,420	1,401	727				11,614	7,832	2,920			
Time to Completion	mean	133.19	117.44	115.56	-1.87	-17.63***	-15.76***	82.51	59.06	51.40	-7.66***	-31.11***	-23.45***
	median	112.00	92.00	86.00	-6.00**	-26.00***	-20.00***	52.00	34.00	25.50	-8.50***	-26.50***	-18.00***
	n	1,408	1,398	724				11,590	7,823	2,914			
Premium TCAR (-63,+126) %	mean	32.26	32.18	34.64	2.46	2.38	-0.08	37.23	46.16	38.58	-7.58**	1.36	8.93***
	median	23.25	21.90	28.34	6.44**	5.09*	-1.35	25.97	32.76	31.28	-1.48	5.32**	6.79***
	n	811	650	239				1,513	812	210			
Premium 4-week %	mean	42.80	38.27	40.99	2.71	-1.81	-4.53***	49.33	48.75	52.50	3.75	3.18	-0.58
	median	36.90	31.62	34.48	2.86*	-2.41	-5.27***	39.53	37.61	43.74	6.13**	4.20*	-1.92
	n	798	703	273				1,439	1,029	312			
High Market Valuation %	mean	59.58	25.27	48.14	22.88***	-11.43***	-34.31***	59.65	30.78	50.31	19.52***	-9.34***	-28.87***
	n	1,420	1,401	727				11,614	7,832	2,920			

Table 5.4. Acquisition Gains.
The table reports mean and median values on value-related measures for acquirer and target shareholders in a sample of completed acquisitions. Panels A through C report the results for mega-deals and Panel B. Variable definitions are reported in the Appendix. Differentials are based on t-tests for means and Wilcoxon test for medians. The indicators *, **, *** correspond to significance levels of 10%, 5%, and 1% respectively.

		All (1)	1990-2009 (2)	1990-1999 (3)	2000-2009 (4)	2010-2015 (5)	(5) - (2)	(5) - (4)	(5) - (3)	(4) - (3)
Panel A: Mega Deals										
All										
ACAR3	*mean*	0.26*	-0.36**	-0.11	-0.60***	2.54***	2.90***	3.14***	2.65***	-0.49
	median	0.03	-0.38***	-0.14	-0.64***	1.34***	1.72***	1.98***	1.48***	-0.51*
WINNERS3	*mean*	50.13***	47.01***	49.21***	44.91***	61.54***	14.53***	16.63***	12.33***	-4.30**
$GAIN3	*mean*	-193.00***	-262.77***	-99.57**	-418.24***	62.32	325.09***	480.56***	161.89**	-318.67***
	median	0.80*	-16.42***	-4.56**	-30.63***	86.71***	103.13***	117.34***	91.27***	-26.07**
LARGE LOSS	*mean*	9.84***	10.79***	7.46***	13.97***	6.36***	-4.43***	-7.61***	-1.10	6.51***
	n	3150	2474	1207	1267	676				
Private										
ACAR3	*mean*	2.36***	2.17***	2.51***	1.91***	2.84***	0.67	0.93*	0.33	-0.6
	median	1.14***	1.03***	1.18***	0.92***	1.52***	0.49	0.60*	0.35	-0.26
	n	1,542	1,112	491	621	430				
Public										
ACAR3										
All	*mean*	-1.75***	-2.43***	-1.91***	-3.02***	2.01***	4.45***	5.03***	3.92***	-1.11***
	median	-1.16***	-1.69***	-1.13***	-2.32***	0.82***	2.51***	3.14***	1.95***	-1.19***
	n	1,608	1,362	716	646	246				
Cash	*mean*	0.60**	-0.01	0.67	-0.34	2.15***	2.16***	2.49***	1.48*	-1.02
	median	0.40**	0.27	0.93*	-0.03	0.66***	0.39***	0.69***	-0.27	-0.96*
	n	388	278	92	186	110				
Stock	*mean*	-3.50***	-3.75***	-3.01***	-5.41***	1.01	4.76***	6.42***	4.02**	-2.40***
	median	-3.16***	-3.22***	-2.47***	-4.88***	1.84	5.06***	6.72***	4.31**	-2.40***
	n	556	527	363	164	29				
Mixed	*mean*	-1.66***	-2.39***	-1.28***	-3.37***	2.15**	4.54***	5.52***	3.43***	-2.09***
	median	-1.49***	-2.15***	-0.77***	-3.17***	0.97***	3.13***	4.15***	1.74***	-2.40***
	n	664	557	261	296	107				

Table 5.4. Continued.

		All (1)	1990-2009 (2)	1990-1999 (3)	2000-2009 (4)	2010-2015 (5)	(5) - (2)	(5) - (4)	(5) - (3)	(4) - (3)
Public – Synergy Gains										
TCAR3	*mean*	19.93***	19.08***	17.77***	20.61***	24.87***	5.78***	4.25***	7.10***	2.85***
	median	17.39***	15.89***	14.66***	16.81***	23.72***	7.84***	6.91***	9.06***	2.15**
	n	1436	1226	658	568	210	.	.	.	.
SYNRGY3	*mean*	1.37***	0.74***	1.00***	0.43	5.05***	4.31***	4.62***	4.05***	-0.57
	median	0.87***	0.42***	0.90***	-0.03	2.61***	2.19***	2.63***	1.71***	-0.92**
$SYNRGY3	*mean*	15.15	-75.65	8.04	-172.87	542.69***	618.34***	715.55***	534.64***	-180.91
	median	59.61***	31.77	50.95***	-0.29	253.97***	222.21***	254.26***	203.02***	-51.24*
$VALUE+	*mean*	-3.38	-7.05**	-2.85	-11.94**	18.21***	25.26***	30.16***	21.06***	-9.09
	median	-0.28	-3.32***	-0.06	-6.74***	21.79***	25.11***	28.53***	21.85***	-6.68**
Δ$GAIN3	*mean*	4.49***	4.72***	4.37***	5.13***	3.16***	-1.56***	-1.97***	-1.21**	0.76**
	median	3.52***	3.68***	3.56***	4.03***	1.99***	-1.69***	-2.04***	-1.57**	0.47*
	n	1,396	1,191	640	551	205	.	.	.	.
Panel B: Non Mega-Deals										
All										
ACAR3	*mean*	1.38***	1.42***	1.68***	1.03***	1.16***	-0.26**	0.12	-0.53***	-0.65***
	median	0.53***	0.52***	0.63***	0.38***	0.58***	0.06	0.20**	-0.06	-0.25***
	n	21,222	18,360	10,866	7,494	2,862				
Public										
ACAR3	*mean*	-0.35***	-0.43***	-0.27*	-0.68***	0.34	0.77**	1.02**	0.61	-0.41
	median	-0.45***	-0.53***	-0.49***	-0.58***	0.03	0.56**	0.62***	0.52*	-0.09
	n	3,165	2,832	1,764	1,068	333				
SYNRGY3	*mean*	1.85***	1.65***	1.53***	1.88***	3.90***	2.24***	2.02***	2.37***	0.35
	median	1.04***	0.90***	0.77***	1.12***	2.87***	1.96***	1.75***	2.10***	0.35*
Private										
ACAR3	*mean*	1.68***	1.75***	2.06***	1.32***	1.26***	-0.49***	-0.06	-0.80***	-0.74***
	median	0.73***	0.74***	0.89***	0.58***	0.68***	-0.07	0.1	-0.21***	-0.31***
	n	18,057	15,528	9,102	6,426	2,529				

Table 5.5. Acquirer return regressions.

The table reports OLS regression coefficient estimates of ACAR3 on the 2010-1015 dummy variable, the mega-deal indicator variable, their interaction, and other control variables. The 2010-2015 variable takes the value of 1 if the deal was announced during the years 2010-2015 and 0 otherwise. The Mega Deal variable takes the value of 1 if the deal value is at least $500 mil in 2015 terms and 0 otherwise. For sample criteria see Table 5.1 description. Detailed variable definitions are reported in the Appendix. Regressions (1)-(4) and (10) utilise the sample of mega-deals. Regressions (5)-(9) and (11) are performed on the sample of all deals (mega and non-mega). Regressions (8)-(9) examine the deal size effect, regressions (10) and (11) include company fixed effects, 1,439 and 6,101 additional variables respectively. The notation of *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively. For detailed variable descriptions see Appendix.

	Mega Deals				All Deals			Deal Size Effect: All Public Deals		Company FE	
	All	All	Public	Private	All	All	2010-15	1990-2009	2010-15	Mega Deals	All Deals
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Intercept	-0.362**	5.897***	2.520*	4.970**	1.417***	2.262***	2.337***	3.001***	3.594*	4.587	2.915
2010 - 2015	2.902***	1.691***	3.724***	0.395	-0.262*	-0.136				1.010**	-0.182
Mega Deal					-1.779***	-0.505***	1.448***				-0.181
2010-15 x Mega Deal					3.170***	2.385***					2.396***
Public		-3.019***				-2.252***	-0.670**			-2.184***	-2.068***
All Stock		-1.553***	-1.535***	-0.146		-0.439***	-0.727	-1.614***	-0.774	-0.774	-0.285
Log Deal Value		-0.432***	-0.568***	-0.161				-0.668***	-0.08	-0.418**	
Acquirer M/B		-0.009	-0.024	-0.027		-0.022***	-0.030	-0.023	-0.038	-0.006	-0.024**
Competition		-1.154	-1.377*	-0.851		1.537***	-0.401	-0.079	-0.020	0.317	0.415
Hostile		0.903	0.635			0.043	1.582	0.377	1.897	0.501	-0.301
Diversification		-0.951***	-0.086	-1.631***		-0.038	-0.395*	-0.016	-0.85	-1.151**	-0.296**
Cross Border		-0.356	1.089*	-0.891*		-0.341**	-0.239	0.509	0.868	0.478	-0.011
Serial Acquirer		-0.703**	-0.177	-1.062**		-0.859***	-0.840***	0.106	-0.489	-0.658	-0.794***
Acquirer Leverage		0.023***	0.033***	0.021*		0.008***	0.022***	0.026***	0.043**	0.001	-0.004
High Market Valuation		0.395	0.705*	0.164		0.200**	-0.378*	0.458**	-1.454**	0.335	0.251**
Acquirer FCF		-0.851	1.627	-2.774*		-1.110***	-1.629**	2.221***	4.557**	-0.568	0.143
Industry FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2 (%)	2.141	9.641	9.326	1.519	0.546	2.939	2.370	5.326	4.849	32.160	17.049
N	3,150	2,939	1,512	1,427	24,372	20,505	3,418	3,636	565	2,939	20,505

Table 5.6. Synergy gain regressions.

The table reports OLS regression coefficient estimates of SYNRGY3 on the 2010-1015 dummy variable, the mega-deal indicator variable, their interaction, and other control variables. Synergy gains are estimated as the market capitalisation weighted ACAR (-1,+1) of acquirer and target firms. The 2010-2015 variable takes the value of 1 if the deal was announced during the years 2010-2015 and 0 otherwise. The Mega Deal variable takes the value of 1 if the deal value is at least $500 mil in 2015 terms and 0 otherwise. For sample criteria see Table 5.1 description. Detailed variable definitions are provided in the Appendix. Regressions (1)-(2) and (6) utilise the sample of mega-deals. Regressions (3)-(5) and (7) are performed on the sample of all deals (mega and non-mega). Regressions (6) and (7) include company fixed effects, 807 and 1,782 additional variables respectively. The notation of *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively.

	Mega Public		All Public			Company FE	
						Mega Deals	All Public
			1990-2015	1990-2015	2010-2015		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.738***	2.273	1.655***	3.250***	4.550**	5.822	6.376
2010 - 2015	4.315***	3.673***	2.243***	1.766***		1.579**	0.796
Mega Deal			-0.917***	-0.952***	0.842		0.150
2010-2015 x Mega Deal			2.072***	1.806**			2.004**
All Stock		-1.559***		-1.867***	0.298	-0.767	-0.647*
Log Deal Value		-0.033				0.139	
Acquirer M/B		-0.042		-0.077***	-0.120	-0.036	-0.055*
Competition		-1.197		-0.031	0.518	1.267	0.502
Hostile		2.933**		2.776**	0.000	2.007	2.453*
Diversification		-0.204		-0.387	-1.131	-0.064	-0.040
Cross Border		-1.389		-1.125	-1.285	-0.654	-2.266**
Serial Acquirer		-0.615		-0.933***	-1.575*		-0.440
Acquirer Leverage		0.040***		0.029***	0.063**	-0.007	-0.003
High Market Val		-0.005		-0.342	-0.383	0.488	-0.014
Acquirer FCF		1.653		1.308	2.246	3.060	3.019
Industry FE	*No*	*Yes*	*No*	*Yes*	*Yes*	*Yes*	*Yes*
Adj. R^2 (%)	4.242	11.493	2.260	8.204	3.915	46.699	43.235
N	1,396	1,316	3,500	3,130	379	1,316	3,130

Table 5.7. Quantile Regressions.
The table reports quantile regression coefficient estimates of ACAR3 and SYNERGY3 on a 2010-1015 indicator and other control variables for the sample of mega-deals. The quantile regressions are performed on the 25th, 50th, and 75th percentiles corresponding to specification 2 in Tables 5 and 6 where the dependent variable is ACAR3 and SYNRGY3 respectively. For sample criteria see Table 5.1 description. The goodness of fit statistic for quantile regressions is the Akaike Information Criterion (AIC). For detailed variable descriptions see Appendix. The notation of *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively.

	ACAR3			SYNRGY3		
	Quantile			Quantile		
	25th	50th	75th	25th	50th	75th
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	3.947***	5.975***	7.428***	-0.852	3.574***	8.321***
2010 - 2015	1.401***	1.061***	1.238***	1.875***	2.014***	3.766***
Public	-1.941***	-1.520***	-2.015***			
All Stock	-3.096***	-1.633***	-0.840***	-1.398***	-0.932***	-1.239***
Log Deal Value	-0.907***	-0.587***	-0.131	-0.087	-0.220	-0.031
Acquirer M/B	-1.521	-0.511	-0.456	-1.413	-1.279**	-0.493
Competition	-0.093***	-0.017	0.012	-0.164***	-0.081**	-0.053
Hostile	2.387***	-0.080	-0.863	1.925	0.776	1.045
Diversification	-0.239	-0.875***	-1.790***	0.397	-0.549**	-1.078***
Cross Border	0.220	-0.181	-0.730	-1.305	-0.301	-2.602**
Serial Acquirer	0.240	-0.174	-0.967***	0.022	-0.392	-1.180***
Acquirer Leverage	0.005	0.0250***	0.034***	0.018	0.033***	0.044***
High Market Val	0.886***	0.325	0.243	0.888***	0.204	-0.430
Acquirer FCF	2.410***	0.186	-3.200***	5.500***	0.434	-2.608
Industry FE	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
AIC	4456.46	5799.94	4982.56	1753.45	2406.75	1970.80
N	2,939	2,939	2,939	1,316	1,316	1,316

Table 5.8. Propensity Score Matching Adjusted Gains.
The table reports acquisition performance using propensity scores that are estimated from logit regressions of post-2009 deal occurrence on deal and firm-level characteristics. Panel A reports results from the logit estimation where the dependent variable equals 1 if the deal was announced during the 2010-15 period and 0 otherwise. Panel B reports CAR3 and SYNRGY3 gains for 2010-15 deals (Treated sample) and propensity score matched returns from pre-2010 deals (Control sample). Difference is the return differential between the Control and Treated samples. N is the number of observations and pseudo R^2 (%) is the pseudo R-square. P-values are reported below regression estimates. For Panel B statistical significance is reported only for difference estimates. The notation of *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively.

Panel A: Logit estimation results

	CAR3	SYNRGY3
Post-2009=1	(1)	(2)
Intercept	-2.019***	-2.258***
Public	-0.559***	
AllStock	-1.777***	-1.604
Log Deal Value	0.172***	0.201***
Acquirer M/B	-0.011	-0.029
Competition	-1.002***	-0.686*
Hostile	-2.065**	-14.499
Diversification	-0.058	-0.45**
Cross Border	0.162	0.189
Serial Acquirer	-0.270***	-0.205
Acquirer leverage	0.003	0.001
High Market Val	0.308***	0.246
Acquirer FCF	-0.026	0.217
Industry FE	*Yes*	*Yes*
N	2,939	1,316
Pseudo R^2 (%)	10.30	8.94

Panel B: Adjusted post-2009 CARs based on PSM

			One-to-one	30 Nearest	50 Nearest	Gaussian Kernel
CAR3	Treated	*mean*	2.457	2.457	2.457	2.457
	Control	*mean*	0.192	-0.004	-0.205	-0.579
	Difference		**2.265*** **	**2.461*** **	**2.662*** **	**3.036*** **
SYNRGY3	Treated	*mean*	5.062	5.062	5.062	5.062
	Control	*mean*	1.245	1.434	1.389	1.295
	Difference		**3.818*** **	**3.628*** **	**3.674*** **	**3.768*** **

Table 5.9. Corporate Governance two stage regressions.
The table reports coefficients from 2-stage instrumental variable OLS regressions. In first stage regressions, the dependent variable in specifications 1,3 and 5 is the percentage of independent directors in the board (BI), the independent directors' share of ownership (IDO), and the index of antitakeover provisions (BCF), respectively. The main explanatory variable in a time indicator for deals occurring from 2010 through 2015. The dependent variable in the second stage regression is the acquirer cumulative abnormal return for a 3-day window surrounding the acquisition announcement (ACAR3). BI, IDO, and BCF correspond to predicted corporate governance values from stage-one. For detailed variable definitions see Appendix 1. The notation of *, **, *** corresponds to statistical significance levels of 10%, 5%, and 1% respectively.

	1st Stage	2nd Stage	1st Stage	2nd Stage	1st Stage	2nd Stage
	BI	CAR	IDO	CAR	BCF	CAR
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	61.752***	0.338	1.494**	-4.097	2.693***	12.677***
2010 - 2015	13.985***		0.276**		-0.372***	
Public	0.071	-2.256***	-0.080	-1.790***	-0.090	-2.340***
All Stock	-2.727**	-1.384***	0.143	-2.519***	-0.133	-2.623***
Log Deal Value	0.894**	-1.028***	-0.121**	0.091	-0.070*	-0.697***
Acquirer M/B	-0.091	0.008	-0.008	0.048	-0.029***	-0.069
Competition	0.145	-0.441	0.073	-1.271	-0.145	-1.901
Hostile	-5.321	1.935	0.136	0.614	-0.376	-0.034
Diversification	1.256	-1.362***	-0.091	-0.476	-0.066	-0.855**
Cross Border	0.585	-0.733	-0.056	-0.243	-0.034	-0.006
Serial Acquirer	-0.684	0.038	-0.186*	1.607***	0.056	-0.207
Acquirer Leverage	-0.059**	0.022*	0.010**	-0.067***	-0.005*	0.021
High Market Val	-1.554*	0.318	-0.003	-0.385	-0.270***	0.004
Acquirer FCF	3.207	0.248	-0.131	2.483*	0.383	2.554
BI		0.130***				
IDO				7.959***		
BCF						-2.594**
Industry FE	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Adj. R^2 (%)	16.800	10.704	1.808	10.552	6.667	9.941
N	1,619	1,619	1,388	1,388	1,236	1,236

Table 5.10. Acquirer long-run returns.

The table reports long-run abnormal returns to acquiring firms consummating mega-deals for different sample periods. BHAR is the 1-year acquirer buy-and-hold monthly return adjusted for the corresponding "25 Size-B/M" portfolio (Loughran, 1997), starting at the month of the deal announcement. For any missing data, the abnormal return is replaced by that of the corresponding "25 Size-B/M" portfolio. For CTPR, the monthly alpha is estimated from a calendar time portfolio regression of the equally weighted monthly excess return as in Mitchell and Stafford (2000), on the Fama and French (1993) and Carhart (1997) 4 factors, BHAR differences are estimated using T-tests for means and Wilcoxon tests for medians. The indicators of *, **, *** correspond to significance levels of 10%, 5%, and 1% respectively.

		All (1)	**1990-2009 (2)**	**1990-1999 (3)**	**2000-2009 (4)**	**2010-2015 (5)**	**(5) - (2)**	**(5) - (4)**	**(5) - (3)**	**(4) - (3)**
BHAR	mean	-0.096	-1.241	-1.346	-1.143	4.424***	5.665**	5.567**	5.770**	0.203
(25 Size-B/M)	median	-3.150***	-4.839***	-7.075***	-2.873***	1.877**	6.715**	4.749**	8.952**	4.203**
	n	2,754	2,197	1,062	1,135	557	.	.	.	.
BHAR	2010-15 indicator	3.520*								
Regression	Control variables	*Yes*								
	Adj. R^2 (%)	1.230								
	n	2,754								
CTPR	alpha	0.025	-0.075	-0.02	-0.063	0.364***				
(4-factor model)	Rm - Rf	1.146***	1.172***	1.120***	1.217***	1.065***				
	SMB	0.283***	0.284***	0.323***	0.261***	0.403***				
	HML	0.018	0.050	0.187***	-0.058	-0.125				
	MOM	-0.059**	-0.035	0.069	-0.087**	-0.154***				
	n-months	307	235	115	120	72				
	Adj. R^2 (%)	92.01	91.59	88.68	93.57	94.95				

Table 5.11. Acquirer Investment Efficiency.

The table reports estimates of investment inefficiency based on Richardson (2006) for acquiring firms. In Panel A, the coefficients are from a regression of Total New Investment, $INV_{i,t}$, which is the sum of capital expenditures, R&D expenditures, and acquisitions minus sales of PPE and necessary maintenance for assets in place for firm i in year t from Compustat, scaled by total assets. $Q_{i,\ t-1}$ is the book value of total assets minus the book value of equity plus the market value of equity divided by book value of total assets for firm i in year t-. $Leverage_{i,\ t-1}$ is calculated as total debt over common equity for firm i in year t-1. $Cash_{i,\ t-1}$ is the logarithmic transformation of 1 plus the ratio cash and cash equivalents over total assets for firm i in year t-1. $Age_{i,\ t-1}$ is the log of the difference between the year of the observation and the incorporate date for firm i in year t-1. $Size_{i,\ t-1}$ is the logarithmic transformation of total assets for firm i in year t-1. $INV_{i,\ t-1}$ is the lagged term of the dependent variable. Stock $Return_{i,\ t-1}$ is the total annual change in the market capitalization of firm i in the year t-1. We trace each acquirer's investment for the entire sample period (1990-2015). Variables are winsorized at the 1% and 99% to remove outliers. Industry fixed effects are included in specification 2. Panel B reports mean and median residual investment (RESINV) which is the absolute value of the residuals from regression (2) in Panel A. n is the number of firm-year observations and Adj. R^2 (%) is the adjusted R-square. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: Total new investment regressions (INVi ,t)		
	(1)	(2)
Intercept	0.206***	0.219***
Q (t-1)	0.021***	0.020***
Leverage (t-1)	-0.002***	-0.001***
Cash (t-1)	0.008***	0.007***
Age (t-1)	-0.005***	-0.006***
Size (t-1)	-0.024***	-0.022***
INV (t-1)	0.119***	0.090***
Stock Return (t-1)	0.012***	0.013***
Industry FE	No	Yes
Adj R^2 (%)	16.075	18,021
n	20,970	20,908

Panel B: Residual Investment (RESINV)			
	1990-2009	2010-2015	Diff.
mean	0.095	0.074	-0.021***
median	0.055	0.044	-0.011***
n	15,904	5,005	

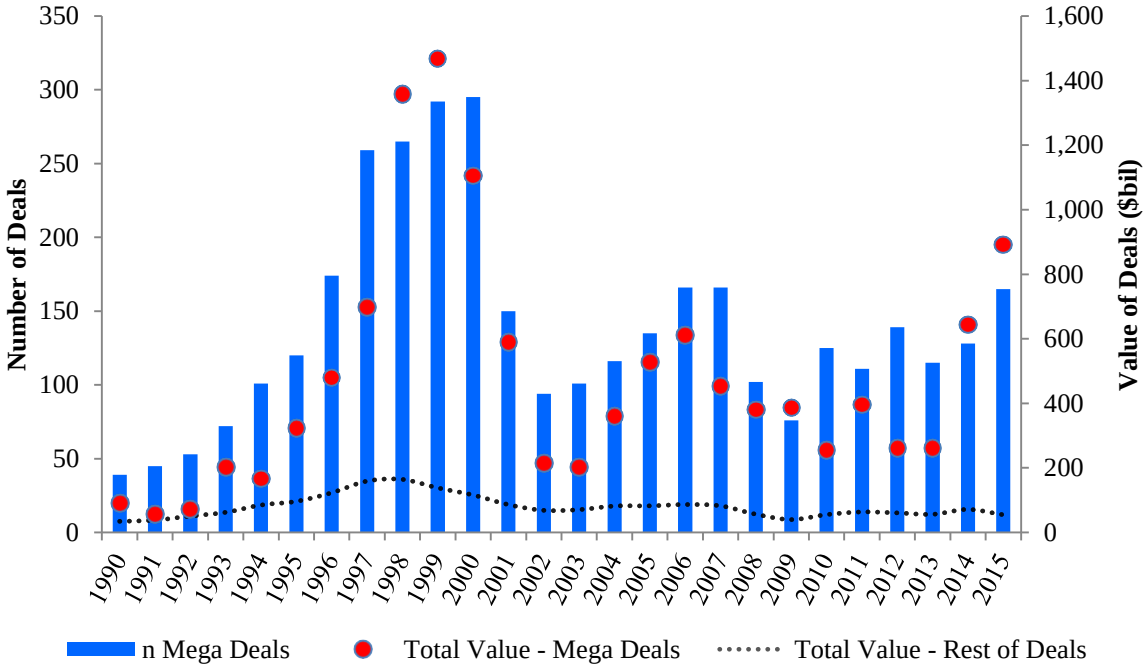

Figure 5.1. Deal Activity through time.
The figure shows the annual number of transactions and total consideration offered for the sample of acquisitions described in Table 5.1.

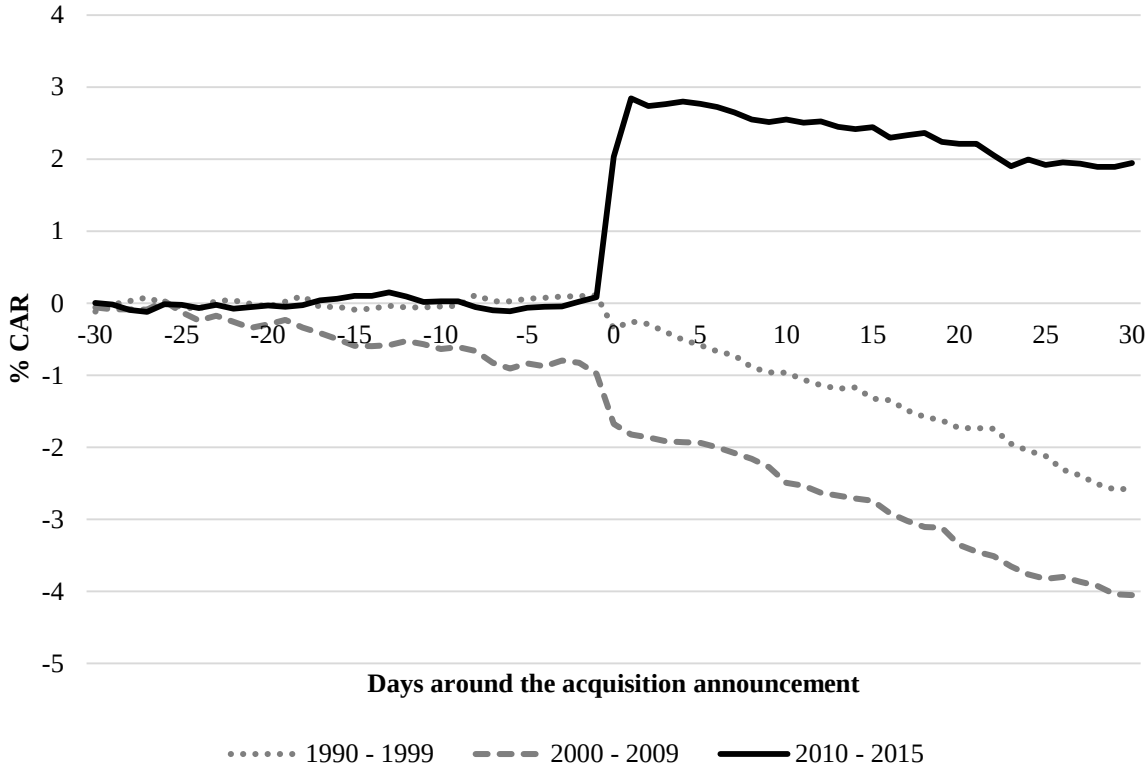

Figure 5.2. Acquirer CAR evolution around the announcement.
The figure shows the progression of CARs around the acquisition announcement for the three periods in our sample: 1990-1999, 2000-2009, and 2010-2015.

Appendix

Appendix 1. Variable Definitions for Chapter 3.

Variable	Definition
Panel A: Target Characteristics	
Buy-and-Hold Returns	The annually accumulated monthly returns of the firm starting in January and ending in December of the calendar year t-1. The returns are adjusted for the equally-weighted CRSP index.
Leverage	Total Debt over Book Value of Common Equity of the firm in the fiscal year t-1.
Leverage Dummy	Dummy variable taking the value of 1 if the firm's Leverage is in the top 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Liquidity	Total Cash and Cash Equivalents over Total Assets of the firm in the fiscal year t-1.
Liquidity Dummy	Dummy variable taking the value of 1 if the firm's Liquidity is in the bottom 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Market Capitalisation	Year-end Market Capitalisation of the firm in the year t-1. The values are denominated in 2014 dollar terms.
Market-to-Book	Year-end market capitalisation of the firm in the calendar year t-1 over the total book value of the firm in the fiscal year t-1.
Market-to-Book Dummy	Dummy variable taking the value of 1 if the firm's Market-to-Book is in the bottom 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Past Completed Bid	Dummy variable that takes the value of 1 if the company has been the target of a successful bid in the three years before year t and 0 otherwise.
Past Withdrawn Bid	Dummy variable that takes the value of 1 if the company has been the target of a withdrawn bid in the three years before year t and 0 otherwise.
Price-to-Earnings	Share price of the firm at the year-end of year t-1 over the annual earnings-per-share figure of the fiscal year t-1.
Price-to-Earnings Dummy	Dummy variable taking the value of 1 if the firm's Price-to-Earnings is in the bottom 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Return-on-Assets	Operating income over Total Assets of the firm in year t-1.
Return-on-Assets Dummy	Dummy variable taking the value of 1 if the firm's Return-on-Assets is in the bottom 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Sales Growth	The growth of sales of the firm from year t-2 to year t-1.
Sales Growth Dummy	Dummy variable taking the value of 1 if the firm's Sales Growth is in the bottom 25% of the industry in the year t-1. The industry classification follows Fama-French 49 industries.
Panel B: Industry Characteristics	
Activity Concentration	The total number of deals over the total number of companies in the sample in year t-1.
Activity Concentration Change	The year-on-year change of the Activity Concentration variable from year t-2 to year t-1.

Activity Value	The total value of deals over the total market capitalisation in the sample in year t-1.
Activity Value Change	The year-on-year change of the Activity Value variable from year t-2 to year t-1.
Capital Liquidity	The average Cash and Cash Equivalents over Total Assets in the company's industry in the year t-1. The industry classification follows Fama-French 49 industries.
Capital Liquidity Change	The year-on-year change of the Capital Liquidity variable from year t-2 to year t-1.
HHI	The industry-specific Herfindahl-Hirschman Index in the year t-1. The index is calculated as the sum of all companies' squared market shares. The index has a maximum value of 1, for a full monopolistic industry. The closer the value of the index is to 0, the more fragmented the market.
HHI Change	The year-on-year change of the HHI variable from year t-2 to year t-1.
Industry Synergies	The sum of all synergistic gains on deal announcements in an industry in the year t-1. The synergistic gains are calculated as the Market Capitalisation weighted CAR (-1, +1). The Market Capitalisation weights are retrieved at the end of the month before the acquisition announcement. The industry classification follows Fama-French 49 industries.
Industry Synergies Change	The year-on-year change of the Industry Synergies variable from year t-2 to year t-1.
Serial Acquirer	Serial acquirers are defined as firms that have acquired at least two companies in the last three years. The dummy variable that takes the value of 1 if there is a serial acquirer which has acquired at least 1 firms in the prospective target or non-target's industry and 0 otherwise. The industry classification follows Fama-French 49 industries.

Appendix 2. Variable Definitions for Chapter 4.

Variable	Definition
Panel A: Acquisition Performance	
CAR (-1,+1)	Acquirer cumulative abnormal returns over the 3 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
CAR (-5,+5)	Acquirer cumulative abnormal returns over the 11 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
CAR (-20,+1)	Acquirer cumulative abnormal returns over the 22 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
CAR (-30,+1)	Acquirer cumulative abnormal returns over the 32 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
CAR (-30,+30)	Acquirer cumulative abnormal returns over the 61 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
BHAR *(25 Size – B/M)*	1-year Buy-and-Hold abnormal returns starting at the month of the announcement. The calculation involves monthly returns adjusted for the return of the corresponding 25 value-weighted Fama and French Size-B/M portfolios (information retrieved by Kenneth French's website).
Panel B: Acquirer Characteristics	
Capital Expenditure	Capital expenditure of the firm in the fiscal year t-1. The values are denominated in 2015 dollar terms.
Cash and Cash Equivalents	Cash and cash equivalents of the firm in the fiscal year t-1. The values are denominated in 2015 dollar terms.
Leverage	Acquirer long- and short-term debt divided by total assets at the year-end of the fiscal year t-1.
Market Capitalisation ($mil)	Acquirer market capitalisation in 2015 dollar terms 30 days prior to the deal announcement. For missing values, we retrieve information from next available day, up to 10 days before the announcement.
Market-to-Book	Acquirer market cap over the total book value of equity. The latter is calculated as the sum of stockholders' equity, deferred taxed and investment tax credit (if available), and preferred stock, all denominated in 2015 dollar terms and taken at year-end of the fiscal year t-1. We use redemption, liquidation, or par value for the preferred stock estimation, depending on data availability. Stockholders' equity is as reported by Compustat; the sum of book value of common equity and preferred stock par value, or the book value of assets minus total liabilities, depending on data availability.
Net Income	Net income of the firm in the fiscal year t-1. The values are denominated in 2015 dollar terms.
Net Margin	Net income over sales of the firm in the fiscal year t-1.
ROA	Operating income over total assets of the firm in the fiscal year t-1.
ROE	Net income over common equity of the firm in the fiscal year t-1.
Sales	Total sales of the firm in the fiscal year t-1. The values are denominated in 2015 dollar terms.

Total Assets ($mil)	Acquirer total asset value at the year-end of the fiscal year t-1. The values are denominated in 2015 dollar terms.
Total Debt	Total short- and long-term debt of the firm in the fiscal year t-1. The values are denominated in 2015 dollar terms.
Panel C: CEO Characteristics	
Age	The age of the CEO at the time of the deal announcement.
Bonus	Cash bonus of the CEO for the fiscal year t-1. The values are denominated in 2015 dollar terms.
Deal Experience	The number of deals performed during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Deal Experience - Any Similarity	The number of deals performed with either the same target industry, public status, target nation, or similar deal value to the deal at hand, during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Deal Experience - Industry	The number of deals performed with the same target industry to the deal at hand, during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Deal Experience - Status	The number of deals performed with the same target public status to the deal at hand, during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Deal Experience - Target Nation	The number of deals performed with the same target nation to the deal at hand, during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Deal Experience - Value	The number of deals performed with similar deal value (+/- 20%) to the deal at hand, during the decade before the appointment of the CEO in the current firm while holding CEO positions.
Equity-based compensation	The sum of stock and option awards of the CEO for the fiscal year t-1. The values are denominated in 2015 dollar terms.
First year CEO	Dummy variable that takes the value of 1 if the CEO is during her first year on the CEO position in the new firm and 0 otherwise.
Hubristic CEO	Dummy that takes the value of 1 if the Acquirer CEO has not exercised 67% in-the-money options twice during her tenure and 0 otherwise based on Malmendier and Tate (2005).
Insider	Dummy variable that takes the value of 1 if the CEO has been an executive, director or chairman in the decade before her appointment as CEO in the current firm.
Position Experience	The number of years the CEO held CEO positions in the decade prior to her appointment in the current firm.
Public Position Experience	The number of years the CEO held public company CEO positions in the decade prior to her appointment in the current firm.
Salary	Salary of the CEO for the fiscal year t-1. The values are denominated in 2015 dollar terms.
Tenure	The number of years in the CEO position in the current firm at the time of the deal announcement.
Total Pay	Total compensation of the CEO for the fiscal year t-1. The values are denominated in 2015 dollar terms.
Panel D: Deal Characteristics	

All Cash	Dummy variable that takes the value of 1 if the consideration was 100% in cash and 0 otherwise.
All Stock	Dummy variable that takes the value of 1 if the consideration was 100% in stock and 0 otherwise.
Cross Border	Dummy variable that takes the value of 1 if the target's country is not the U.S. and 0 otherwise.
Deal Value	The deal value in 2015 dollar terms.
Diversification	Dummy variable that takes the value of 1 if the Fama-French 10-industry classification of the acquirer and target are different and 0 otherwise.
Hostile	Dummy variable that takes the value of 1 if the deal is labelled as hostile and 0 otherwise.
Premium 4-week %	The 4-week premium paid for the target company as given by SDC.
Public target	Dummy variable that takes the value of 1 if the target is a public firm and 0 otherwise.
Relative Size	The ratio of deal value over the acquirer market capitalisation one month prior to the acquisition announcement.
Serial Acquirer	Dummy variable that takes the value of 1 if the company has performed 3 deals within 5 years from the announcement and 0 otherwise.
Tender offer	Dummy variable that takes the value of 1 if the deal is labelled as a tender offer and 0 otherwise.
Time to completion	The number of days between deal announcement and completion.

Appendix 3. Variable Definitions for Chapter 5.

Variable	Definition
Panel A: Acquisition Performance	
ACAR3	Acquirer cumulative abnormal returns over the 3 days around the announcement day. The model parameters are estimated over the window (-255, -46) relative to the announcement.
BHAR *(25 Size – B/M)*	1-year Buy-and-Hold abnormal returns starting at the month of the announcement. The calculation involves monthly returns adjusted for the return of the corresponding 25 value-weighted Fama and French Size-B/M portfolios (information retrieved by Kenneth French's website).
Δ$GAIN3	The difference in dollar gains (*$GAIN3*) between the target and bidder scaled by the sum of their market value 30 days prior to the acquisition announcement.
$GAIN3	Acquirer cumulative abnormal dollar value creation (destruction) over the 3 days around the announcement day. The value is the product of ACAR (-1,+1) and the market capitalisation of the acquirer one month prior to the acquisition announcement.
Large Loss $1 bil	Dummy variable takes the value of 1 if the variable "Dollar Gain (-1,+1)" indicates a loss equal to or greater than $1 bill., following Moeller et al. (2005).
SYNRGY3	The market value-weighted 3-day cumulative abnormal returns of the acquirer and target combined where the value weights are measured one month prior to the acquisition announcement.
$SYNERGY3	The synergy gain (SYNRGY3) multiplied by the sum of the market capitalisation of the acquirer and target firm 30 days prior to the acquisition announcement.
TCAR3	Target cumulative abnormal returns over the 3 days around the acquisition announcement day. The returns model parameters are estimated over the window (-255, -46) relative to the announcement.
$VALUE+	The ratio of total market capitalisation change for the acquirer and target around the acquisition announcement adjusted for market movements and scaled by the deal value.
WINNERS3	Dummy variable takes the value of 1 if the ACAR (-1,+1) is positive and 0 otherwise.
Panel B: Acquirer Characteristics	
Acquirer Assets ($mil)	Acquirer total asset value at the year-end of the fiscal year t-1. The values are denominated in 2015 dollar terms.
Acquirer FCF-to-Assets	The ratio of cash flow from operations over the book value of assets at the year-end of the fiscal year t-1.
Acquirer Hubris	Dummy that takes the value of 1 if the Acquirer CEO has not exercised 67% in-the-money options twice during her tenure and 0 otherwise based on Malmendier and Tate (2005).
Acquirer Leverage	Acquirer long- and short-term debt divided by total assets at the year-end of the fiscal year t-1.
Acquirer Market Cap ($mil)	Acquirer market capitalisation in 2015 dollar terms 30 days prior to the deal

	announcement. For missing values, we retrieve information from next available day, up to 10 days from the announcement.
Acquirer Market-to-Book	Acquirer market cap over the total book value of equity. The latter is calculated as the sum of stockholders' equity, deferred taxed and investment tax credit (if available), and preferred stock, all denominated in 2015 dollar terms and taken at year-end of the fiscal year t-1. We use redemption, liquidation, or par value for the preferred stock estimation, depending on data availability. Stockholders' equity is as reported by Compustat; the sum of book value of common equity and preferred stock par value, or the book value of assets minus total liabilities, depending on data availability.
BCF Antitakeover Index	The number of antitakeover provisions available at the firm's disposal in the year of the acquisition as reported in IRRC. It has a minimum value of 1 and a maximum value of 6 (Bebchuk et al., 2009).
Board Independence	The percentage of outside directors in the Board of Directors in the year of the acquisition as reported in ISS.
Independent Board	Dummy variable that takes the value of 1 if the percentage of outside directors is higher than 50% in the Board of Directors of the acquirer and 0 otherwise (Masulis et al., 2007).
Equity Compensation %	The sum of stock- and option-based compensation as a percentage of total compensation in the fiscal year t-1. The construction is based on Chauvin and Shenoy (2001).
Ind. Directors Ownership %	The ownership % of all outside directors combined in the fiscal year t-1.
Serial Acquirer	Dummy variable that takes the value of 1 if the company has performed 3 deals within 5 years from the announcement and 0 otherwise.
Panel C: Target Characteristics	
Target Assets ($mil)	Target total asset value at the year-end of the fiscal year t-1, denominated in 2015 dollar terms.
Target Market Cap ($mil)	Target market capitalisation in 2015 dollar terms 30 days prior to the deal announcement. For missing values, we retrieve information from the next available day up to 10 days from the announcement.
Target Market-to-Book	Target share price 4 weeks before the announcement over the book value per share as reported in SDC.
Panel D: Deal Characteristics	
All Cash	Dummy variable that takes the value of 1 if the consideration was 100% in cash and 0 otherwise.
All Stock	Dummy variable that takes the value of 1 if the consideration was 100% in stock and 0 otherwise.
Cash Consideration %	The percentage of deal consideration paid in cash.
Competition	Dummy variable that takes the value of 1 if there were more than one bids for the target firm and 0 otherwise.
Cross Border	Dummy variable that takes the value of 1 if the target's country is not the U.S.
Deal Value	The deal value in 2015 dollar terms.

Diversified	Dummy variable that takes the value of 1 if the 2-digit SIC codes of the acquirer and target are different and 0 otherwise.
High Market Valuation month	Dummy variable that takes the value of 1 if deal announcement month is classified as a high market valuation period and 0 otherwise. The classification is based on a de-trended P/E ratio as in Bouwman et al. (2009).
Hostile	Dummy variable that takes the value of 1 if the deal is labelled as hostile and 0 otherwise.
Premium 4-week %	The 4-week premium paid for the target company as given by SDC.
Premium TCAR (-63,+126)	The long-run abnormal return based premium attributed to target shareholders as estimated by Schwert (2000).
Public	Dummy variable that takes the value of 1 if the target is a public firm and 0 otherwise.
Relative Size	The ratio of deal value over the acquirer market capitalisation one month prior to the acquisition announcement.
Stock Consideration %	The percentage of deal consideration paid in stock.
Synergy Motive	Dummy that takes the value of 1 if SDC indicates synergistic gains (SYN) within the purpose code as stated by acquiring firm management, and 0 otherwise.
Time to completion	The number of days between deal announcement and completion.
Toehold	Dummy variable that takes the value of 1 if the acquirer owned more than 5% at deal announcement and 0 otherwise.
Withdrawn	Dummy takes the value of 1 if the deal was withdrawn and 0 otherwise.

Panel E: Investment Inefficiency Regression

Age	The logarithmic transformation of the difference between the year t-1 and the year of the incorporation.
Cash	The logarithmic transformation of 1 plus the ratio of company cash and cash equivalents over total assets in year t-1.
Leverage	The ratio of company total debt over the book value of common stock in year t-1.
Q	The company book value of total assets, minus the book value of equity, plus the market value of equity, all divided by the book value of total assets in year t-1.
Size	The logarithmic transformation of the company's total assets in year t-1 .
Stock Returns	The company year-on-year difference of year-end market capitalisation for the year t-1.
Total New Investment	The sum of company's capital expenditures, R&D expenditures, and acquisitions minus sales of PPE and necessary maintenance for assets in place scaled by total assets. The estimation of the variable is based on both year t and t-1.

Appendix 4. Top Mega-Deals by Decade for Chapter 5.

Period	#	Year Announced	Year Completed	Acquiring Company	Target Company	Deal Value $ bil	CAR % (-1, 1)	CAR % (-20, 1)
1990-1999	1	1999	2000	Pfizer Inc	Warner-Lambert Co	126.87	-11.49	-14.77
	2	1998	1999	Exxon Corp	Mobil Corp	114.80	-3.08	-5.00
	3	1998	1998	Travelers Group Inc	Citicorp	105.51	14.76	13.61
	4	1998	1999	SBC Communications Inc	Ameritech Corp	91.02	-8.00	-5.84
	5	1998	1998	NationsBank Corp	BankAmerica Corp	89.63	6.94	9.77
	6	1999	2000	Qwest Commun Intl Inc	US WEST Inc	80.11	-18.87	-13.37
	7	1998	1999	AT&T Corp	Tele-Communications Inc	77.93	-9.67	-6.68
	8	1998	2000	Bell Atlantic Corp	GTE Corp	77.68	2.52	1.55
	9	1999	2000	AT&T Corp	MediaOne Group Inc	70.11	-6.65	-5.40
	10	1997	1998	WorldCom Inc	MCI Communications Corp	61.89	3.13	15.73
2000-2009	1	2001	2002	Comcast Corp	AT&T Broadband & Internet Svcs	96.42	-6.55	1.09
	2	2006	2006	AT&T Inc	BellSouth Corp	85.44	-5.35	0.56
	3	2002	2003	Pfizer Inc	Pharmacia Corp	78.43	-11.31	-13.64
	4	2009	2009	Pfizer Inc	Wyeth	74.34	-9.93	-7.20
	5	2005	2005	Procter & Gamble Co	Gillette Co	66.64	-4.51	-2.27
	6	2000	2001	Chevron Corp	Texaco Inc	59.01	-5.25	-6.48
	7	2000	2001	JDS Uniphase Corp	SDL Inc	56.63	-21.01	-32.54
	8	2008	2009	Bank of America Corp	Merrill Lynch & Co Inc	53.69	-3.77	18.06
	9	2000	2000	Chase Manhattan Corp,NY	JP Morgan & Co Inc	46.19	-12.62	-4.10
	10	2009	2010	Exxon Mobil Corp	XTO Energy Inc	44.52	-5.06	-5.31
2010-2015	1	2014	2015	AT&T Inc	DirecTV Inc	48.14	-2.62	0.26
	2	2014	2015	Medtronic Inc	Covidien PLC	42.78	0.51	-1.92
	3	2011	2012	Express Scripts Inc	Medco Health Solutions Inc	30.95	9.12	0.95
	4	2011	2012	Duke Energy Corp	Progress Energy Inc	27.21	-0.80	-1.55
	5	2011	2012	Kinder Morgan Inc	El Paso Corp	25.29	2.77	9.66
	6	2014	2015	Reynolds American Inc	Lorillard Inc	25.08	0.70	3.93
	7	2010	2011	CenturyLink Inc	Qwest Commun Intl Inc	24.22	-6.95	-6.92
	8	2011	2012	Johnson & Johnson	Synthes Inc	21.18	4.64	6.53
	9	2014	2014	Facebook Inc	WhatsApp Inc	19.49	2.94	18.40
	10	2011	2012	United Technologies Corp	Goodrich Corp	17.05	-3.05	0.91