

**Empirical mergers and acquisitions research:
A review of methods, evidence and managerial implications***

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1. Introduction

Mergers and acquisitions (M&A) are among the most important corporate events in the finance and business world in terms of both size and impact. For instance, at the peak of the most recent merger wave in the year 2007, corporations spent more than \$4 trillion US dollars, or over 7.5% of world GDP (in market exchange rates) on acquisitions worldwide.¹ Takeovers effect substantial re-allocations of resources both within and across industries, and shape the corporate landscape.² A carefully designed and executed acquisition can create substantial value for the merging firms by improving operational efficiency and taking advantage of other synergistic gains from combining business activities. However, bad acquisition decisions can also destroy viable business entities and cost executives their jobs.

Academic research on the topic of corporate takeovers is abundant. This is not surprising given the above discussion. In addition, while M&As are of interest in themselves, they also serve as a testing ground for many economics and finance theories as these transactions are the largest and the most readily observable form of corporate investment; there is almost no data on the investment projects that firms routinely undertake during the course of their business.

In this chapter we review the relevant academic literature on M&A activity, motives, and performance.³ Such a review is timely given that empirical M&A research has exploded in the last two decades, mostly due to availability of rich, machine-readable transaction data. Our discussion of relevant theory is fairly limited – in fact, a proper review of the theoretical M&A literature requires a whole separate survey.

¹ Source: Thomson Financial SDC and International Monetary Fund.

² The terms “mergers”, “acquisitions”, and “takeovers” will be used interchangeably throughout this chapter. While there may be certain distinctions between these notions, the differences are of more interest to accountants and lawyers than to financial economists, managers, and investors. The common theme is a combination of business activities and/or entities and the associated change in control over corporate assets.

³ The stream of empirical M&A research is vast and growing, making any survey inevitably selective. We make no claim of completeness and apologize to anyone who feels their research was unduly overlooked.

Much of the evidence we review comes from studies based on US or UK data. The reason for this is two-fold. First, these are the largest and the most active takeover markets. Second, this is due to availability of high quality data on M&A deals. While some of the findings we review here may not be universal, many patterns are indeed found in other markets. We point both cases out in several instances. We also summarize the key managerial implications arising from the wealth of research on this topic. Overall, we intend this chapter to be a non-technical introduction to M&A research covering major empirical methods and findings of this literature.⁴

The rest of this chapter is organized as follows. Section 2 reviews the history of M&A activity. Section 3 proceeds with a discussion of the key motives behind M&As. In Section 4 we address the fundamental question of whether M&As create value, with a particular focus on the methodological aspects of this line of inquiry. Section 5 surveys the many factors that were found to affect acquisition performance. Some other notable M&A-related empirical research is briefly noted in Section 6. We outline some of the managerial implications arising from the research findings in Section 7, and close the chapter with some final remarks in Section 8.

2. History of M&A activity

It is natural to start from a historical perspective and review the M&A trends. Economic history has shown that there are distinct “waves” in the frequency and volume of mergers and acquisitions over time. Often, the total of M&A deals at the peak of a cycle may be several times the amount taking place in the trough of a cycle. Usually a cycle builds up, with more and more deals occurring, often at increasingly unrealistic prices, until some trigger almost

⁴ As a next step, we recommend Betton, Eckbo and Thorburn (2008) for a more advanced treatment of research on corporate takeovers. We also recommend scholars to read Jensen and Ruback (1983) and Jarell, Brickley and Netter (1988) for systematic reviews of the early M&A research, and Andrade, Mitchell and Stafford (2001) for a more recent overview.

grinds all the activity to a complete halt. Then, after some time, the entire process starts from the beginning and the next wave emerges.

Two major theories explain why mergers occur in waves. First, the neoclassical theory posits that merger waves occur as firms in specific industries react to economic shocks (deregulation, emergence of new technologies or substitute products and services), which explains why merger activity clusters by industries. The empirical evidence in support of this theory is provided by Gort (1969) and more recently by Mitchell and Mulherin (1996) and Harford (2005). The size and length of each wave largely depends on the number of industries influenced. The emergence of the Internet for instance was more pervasive than the deregulation of utilities. The second theory suggests that market valuations cause merger waves. When firm valuations deviate from fundamentals, managers use overvalued stock of their firms as currency to buy assets of undervalued (or less overvalued) firms (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004), which explains the correlation of merger activity with stock market performance. Accordingly, the overvaluation theory posits that more acquisitions will happen in periods of bubbles. Rhodes-Kropf, Robinson and Viswanathan (2005) provide empirical evidence consistent with the market valuations theory of merger waves.

The history of M&As has seen six merger waves so far:⁵

1) **1893-1904:** The first merger wave was characterized by horizontal mergers which created the mining, steel, oil, telephone, and railroad giants thus defining the basic manufacturing and transportation industries in the US. The adoption of antitrust laws in the early 20th century and the First World War ended the wave.

⁵ This section draws on Lipton (2006).

- 2) **1919-1929:** The second merger wave saw continuation of the consolidation that started earlier with a very significant degree of vertical integration. The major car manufacturers, such as Ford, were born during this period. The stock market crash of 1929 and the Great Depression ended this wave.
- 3) **1955-1969:** In the third merger wave, the conglomerate concept took hold of the corporate America. Major conglomerates like LTV, Teledyne and Litton emerged. Their owners and managers were viewed as the heroes of the new organizational model. However, their stocks declined substantially in 1969-1970 as the conglomerate companies never achieved the anticipated benefits.
- 4) **1980-1989:** In the US, the merger wave of the 1980s was characterized by major hostile takeover battles, the invention of the poison pill, the rise of junk bond financing and leveraged buyouts. In Europe, cross-border horizontal mergers took place as a preparatory step for the common market. Even the 1987 stock market crash was unable to bring this major wave to an end, but it retreated with the demise of the junk bond market, the savings and loan banks crisis and the capital problems faced by commercial banks.
- 5) **1993-2000:** The fifth merger wave was characterized by the globalization of competition and thriving stock prices putting pressure on managers to do deals. Deals of unthinkable proportions, such as the combinations of Exxon and Mobil, Citibank and Travelers, Chrysler and Daimler, AOL and Time Warner were conducted. From over \$300 billion in 1992 the volume of M&A worldwide grew up to \$3.3 trillion in 2000. The wave faded away as the tech bubble burst, but only to be-reborn very soon.
- 6) **2003-2007:** The sixth merger wave was characterized by consolidation in metals, oil and gas and utilities, telecoms, banking, and health care sectors. This wave was fueled by increasing globalization and the encouragement by the governments of certain countries (France, Italy and Russia being illustrative examples) to create strong national and global

“champions”. Private equity buyers played a significant role accounting for a quarter of the overall takeover activity, stimulated by the availability of credit that markets were prepared to provide at low interest rates. Cash-financed deals were much more prevalent over this period (Alexandridis, Mavrovitis and Travlos, 2012).

3. Main motives for M&As

3.1. Synergy motives

The common goal of all M&As is the pursuit of synergy gains. Synergy is achieved when the value of the combination of the two firms is greater than the sum of the two stand-alone values (Jensen and Ruback, 1983; Bradley, Desai and Kim, 1988). This effect is often described as “1+1=3”.

The synergy gains can be operational or financial. They may take form of cost reductions and improvements in operational efficiency, revenue enhancements due to optimization of the distribution network (e.g. cross-selling) and increase in market power (e.g. elimination of competition), and various financial advantages (such as tax efficiency and leverage) (see, e.g., Seth, 1990a,b).

The most typical source of synergies, cost reductions, can be achieved from economies of scale and scope, opportunities for eliminating duplicate facilities and functions, and increased bargaining power against suppliers. Synergies may also stem from sharing managerial competences and practices between the two firms. In addition, certain strategic benefits can be achieved via acquisition of valuable technology, knowledge and skills that can be applied in the combined firm.

Revenue enhancement, another frequently cited source of synergy, occurs when the merged entity attains higher sales and growth than two stand-alone companies could enjoy on their own. This can arise due to more streamlined product offerings (e.g., complementary

products) and an enhanced distribution network. In addition, revenue enhancement could be due to increased market power and the elimination of competitors.

Diversification is another often-cited source of synergies in mergers. For instance, diversified firms may create so-called internal capital markets, which allow allocating resources between divisions without the frictions and inefficiencies of external ones.⁶ In addition, Doukas and Travlos (1988) suggest that acquisitions of foreign firms serve as a diversification medium enabling the expansion of the boundary of the acquirer which allows internalizing benefits that would be otherwise lost due to various market frictions.

Moreover, synergies may arise from improvements in corporate governance, as the effectiveness of governance mechanisms differs between firms. Wang and Xie (2009) show that “corporate governance transfers” affect merger synergies which are then shared between the merging firms. This source becomes even more important in international acquisitions, as corporate governance standards vary significantly across different markets. Bris and Cabolis (2008) show how differences in corporate governance across countries can be a motive for cross-border mergers.

Firms can also be motivated to merge by financial synergies, such as tax considerations. For instance, savings could arise from fully utilizing tax shields by exploiting unused debt capacity or other tax shields of the target firm (such as loss carry-forwards or the ability to “step up” the value of the target’s assets for increased depreciation charges). Scholes and Wolfson (1990) demonstrate the effects of US tax reforms of the 1980s on the M&A market. In addition, Hayn (1989) shows that merger gains are positively associated with tax attributes of the target such as loss carry-forwards, tax credits, and possibility of higher depreciation charges from asset values step up. Finally, Manzon, Sharp and Travlos (1994) provide evidence that differences in the tax regimes affect returns to cross-border acquisitions.

⁶ There is a separate stream of research on corporate diversification and conglomeration. See Maksimovic and Phillips (2007).

The empirical evidence is consistent with the existence of positive synergy gains in M&As. Using detailed cash flow projections, Devos, Kadapakkam and Krishnamurthy (2009) show that the synergy gains are, on average, 10% of the combined firm value, with the majority of this value coming from operating synergies rather than tax savings. The operating synergies come mostly from reduced investment expenditure rather than improved operating profits, which is consistent with improved resource allocation and inconsistent with increased market power.⁷ In addition, Houston, James and Ryngaert (2001), using data on bank mergers, provide evidence of positive synergy gains that are attributable mostly to cost savings and not revenue enhancement.

Finally, Hoberg and Phillips (2010) show that firms using similar product descriptions language in their regulatory filings (i.e., firms with potential asset complementarities) are more likely to merge and that such mergers generate higher gains than those between dissimilar firms.

3.1.1. Measurement of synergy gains

More formally, the synergy gain is the difference between the value of the combined firm and the two stand-alone values of the merging firms (the bidder and the target). Empirically, researchers rely on stock market or accounting data to infer synergy gains. For instance, the synergy gain can be measured by the change in the market value of the firms involved at the acquisition announcement (net of the expected value change, or market-wide effects). Bradley, Desai and Kim (1988) and Servaes (1991) define synergy gains as the cumulative abnormal return (CAR) of the combined firm, which is a weighted-average CAR of the bidding and target firms' stock surrounding the announcement of the deal. The weights are

⁷ Operating synergies were found to constitute the bulk of overall value gains in same industry deals, while financial (tax) synergies were more important in diversifying mergers.

the market capitalizations of the respective firms measured several days prior to the announcement.⁸

Alternatively, one can look at accounting measures of efficiency improvements, such as the change in abnormal operating performance of the combined firm from the pre-merger abnormal operating performance of the bidder and the target (see, e.g. Wang and Xie, 2009). Typically, operating performance is defined as return on (total) assets (ROA) or return on sales (ROS), where operating income before depreciation is divided by the book value of total assets or by sales.⁹ Abnormal performance is usually measured against industry median or against a control firm chosen on the basis of industry, size, and level of pre-event operating performance.¹⁰ The average of three-year post-acquisition abnormal operating performance is typically used and compared to abnormal operating performance in the pre-acquisition (or the average of three pre-acquisition) year(s).¹¹

3.2. Agency motivations

Under the agency motive, managers may undertake acquisitions against the interests of shareholders. For instance, Amihud and Lev (1981) argue that managers engage in conglomerate mergers in order to diversify activities of the firm and smooth out earnings thereby securing their jobs; however, this is against shareholder interests as they can diversify on their own at a very low cost. Further, Jensen (1986) in his theory of free cash flow posits that managers with access to surplus cash favor engaging in pet projects and unprofitable acquisitions instead of returning cash to shareholders. This is a manifestation of the agency

⁸ Effectively, this is a variant of event study methodology. See Section 4.1.1 for more details.

⁹ On the one hand, a return measure based on operating profit before depreciation (and interest charges) is preferred as it allows for comparisons across firms with different depreciation policies and borrowing levels/costs. On the other hand, given that certain synergies are of financial nature, such as tax efficiency due to increased depreciation or interest tax savings, a return measure based on operating profit would miss their effect.

¹⁰ The latter is done to account for mean-reversion. Barber and Lyon (1996) highlight the need for performance-matching, particularly in samples that are likely to exhibit pre-event abnormal performance.

¹¹ See also Section 4.1.4.

conflicts between owners and managers. First, executive compensation is often linked to firm size, so that managers have a preference for growing the firm ever larger. As paying out cash to shareholders reduces firm size and managerial discretion, managers tend to engage in negative-NPV investments (such as value destroying acquisitions). Second, it is simply more prestigious to head a large organization. Empire-building CEOs, in contrast to overconfident managers (see below) who truly believe in their abilities to create value, are seeking more power against shareholder interests. Thus, prospects of higher remuneration and the prestige of running a larger firm push managers into making acquisitions even if the deal is detrimental to firm value. In line with the hubris hypothesis, and in contrast to the synergy motive, the empirical evidence reviewed below suggests that agency costs destroy shareholder value.

3.2.1. Measuring agency costs

Measuring agency costs requires quantification of the degree of incentives misalignment and the readiness of managers to take advantage of it – quite an unfeasible task. However, we know that agency costs can be mitigated by proper alignment of managerial interests with those of the shareholders by means of compensation contracts or stock ownership, as well as by directly monitoring managers. Therefore, researchers can proxy for the severity of agency costs using various corporate governance structures.

On the incentives alignment front, several studies suggest that acquiring firm managers whose personal wealth is more closely linked to firm value make better acquisition decisions. For instance, Tehranian, Travlos and Waegelien (1987) show that acquirers with long-term compensation plans in place perform better than acquirers without such plans. Further, Datta, Iskandar-Datta and Raman (2001) show that managers with more equity-based compensation

(e.g., in the form of stock options) make better acquisitions.¹² In addition, Lewellen, Loderer and Rosenfeld (1985) show that acquirer returns are higher for firms with high managerial stock ownership. However, Hubbard and Palia (1995) show that this relationship between managerial stock ownership and acquirer returns is non-monotonic, as at the high levels of managerial ownership acquirer returns start to decline (due to entrenchment, as argued by the authors). Finally, Lin, Officer and Zou (2011) show that acquirers whose officers and directors are insured against personal liability for the actions taken on behalf of the firm make worse acquisitions as they pay higher premiums and enter deals with smaller synergies; in fact, they demonstrate that bidder gains are decreasing in the amount of such insurance coverage.

Turning to monitoring, the evidence shows that more intensive supervision of managerial actions leads to better acquisition decisions. The board of directors is a typical monitoring device present in any listed firm. Here, increased board independence, coming from the presence of outside directors and from the separation of the roles of CEO and Chairman of the Board, is assumed to lead to more effective monitoring and less agency costs as a result. A number of studies investigate the link between board structures and acquirer returns. Byrd and Hickman (1992) examine tender offers for public firms and show that acquirer returns increase with the proportion of outsiders on the board. However, Masulis, Wang and Xie (2007) do not find such a relationship, while Bauguess and Stegemoller (2008) report a negative link for a sample of S&P 500 (large) acquirers.

Finally, the market for corporate control acts as a governance mechanism of last resort whereby agency-infected firms become targets of disciplining takeovers, and self-serving managers are replaced with more effective leaders.¹³ However, firms can become insulated

¹² Minnick, Unal and Yang (2011) also show that in bank mergers managers with higher pay-for-performance sensitivity make fewer but better deals.

¹³ See Martin and McConnell (1991) for evidence of target firm top management turnover following takeovers, particularly in underperforming targets.

from this market force by adopting anti-takeover provisions (ATPs) in their charters and by-laws. Consistent with the effectiveness of takeover threats as a disciplining mechanism, Masulis, Wang and Xie (2007) document that acquirers with fewer ATPs make better acquisitions.

As suggested by Jensen (1986), free cash flow (cash flow in excess of what can be profitably invested by the firm) exacerbates agency problems by increasing managerial discretion. Coupled with few profitable investment opportunities, free cash flow can lead to value-destroying acquisitions. Lang, Stulz and Walkling (1991) show that this is indeed the case, as high free cash flow is associated with lower acquirer returns, particularly for firms with poor investment opportunities (proxied by Tobin's Q). In addition, Harford (1999) shows that cash-rich acquirers (those holding above normal cash reserves) are more likely to attempt acquisitions, particularly diversifying deals, and on average tend to destroy shareholder value and suffer abnormal declines in operating performance.

3.3. Managerial overconfidence (hubris hypothesis)

Managerial overconfidence (also known as the hubris hypothesis), first introduced by Roll (1986), assumes market efficiency and suggests that CEOs engage in M&A deals due to excessive optimism regarding their ability to create value and the resultant overestimation of synergies. The empirical evidence suggests that managers affected by hubris are more likely to destroy shareholder value (Malmendier and Tate, 2008). Doukas and Petmezas (2007) and Billett and Qian (2008) posit that managers with overconfidence, sourced by self-attribution bias, tend to attribute their initial success from previous corporate decisions to their own ability and, as a consequence, conduct worse deals later on which significantly underperform acquisitions initiated by non-overconfident acquirers.

3.3.1. Measurement of managerial overconfidence

Overconfidence is a very ethereal concept and is difficult to operationalize. Researchers have to rely on imperfect proxies. One of the measures of managerial overconfidence is the takeover premium (takeover premium being defined as the difference between the offer price and the pre-offer value of the target firm divided by the latter). Managers that pay high premiums are likely to be overconfident (Hayward and Hambrick, 1997). However, takeover premiums are influenced by many factors and thus are a noisy proxy.

Malmendier and Tate (2008) propose an alternative measure of managerial overconfidence. They define as overconfident those managers who hold in-the-money stock options until the year before the expiration date. Arguably, the main reason for not exercising the options is the CEO's belief in his/her superior leadership and continually rising stock price.

Another measure, also suggested by Malmendier and Tate (2008), is media portrayal and is based on the way the press characterizes CEOs of the bidding firms. The process to construct the business press proxy, which involves construction of two indices, is as follows. First, articles characterizing the CEO with the words: 'confident', 'confidence', 'optimistic', 'optimism', 'certain' and 'positive' are counted. Second, an index counting the number of articles referring to the manager by using the terms: 'reliable, cautious, prudent, conservative, practical, sensible, frugal, careful or steady' is created. This procedure is repeated for each manager by year and for all years. For each manager, the group of articles (i.e. overconfident versus non-overconfident) that outnumbers its counterpart is determined. Finally, the number of years when the overconfident articles index for a CEO is greater than the one characterizing him/her as non-overconfident and *vice versa* is also estimated.

As suggested by Doukas and Petmezas (2007) the decision of managers to engage in multiple acquisitions, i.e., high acquisitiveness, is another proxy for overconfidence. Doukas

and Petmezas (2007) classify as overconfident the managers of firms which make five or more acquisitions within a short period of time (3 years). The intuition behind this measure is that managers making many acquisitions within a short period of time cannot carefully evaluate the potential synergies and negotiate efficiently, leading to shareholder value destruction.¹⁴

Finally, Kolasinski and Li (2013) suggest an insider-trading-based measure of CEO overconfidence. They classify a firm-year as having an overconfident CEO if the latter, on average, loses money on his/her own company's open-market stock purchases in the next two years. A CEO purchasing the stock in the firm under his/her control and losing money on the trade reveals that he/she has overestimated the value of the firm, which is precisely the notion of managerial overconfidence. A virtue of this measure is that it is easily constructed from machine-readable data and is available for almost any listed firm.

3.4. *Other M&A motives*

As stated earlier, industry shocks and market valuations drive takeover activity, forming merger waves. Industry shocks trigger merger activity as a prospect to capture synergies by increasing market share or eliminating of excess capacity, improving operational efficiency and saving on costs (Gort, 1969; Jensen, 1993). Examples of industry shocks include changes in input prices and supply, innovations in technology, and currency movements (Mullherin and Boone, 2000; Andrade and Stafford, 2004).

Booming market is another motivation for mergers. Stock market misvaluation creates opportunities for firms to buy relatively undervalued assets. Moreover, firms may use their overvalued stock to finance the deal, thereby locking in real assets. However, in contrast to hubris theory, the overvaluation hypothesis assumes that acquirers are rational and undertake

¹⁴ However, one has to be careful in dubbing managers engaging in multiple acquisitions as overconfident given that the dynamics of certain industries (such as technology) may necessitate this strategy.

the opportunities offered by inefficient financial markets. Savor and Lu (2009) provide empirical evidence that overvalued acquirers can create value by using their overvalued stock as cheap currency to buy relatively less overvalued targets.

Finally, influence from investment banks, that earn high fees from advising on M&A deals and therefore have an incentive to keep deals flowing, is also seen as a motive behind takeover transactions.

4. Value creation in M&A

From the finance perspective, one of the most important questions regarding M&As is whether they benefit the shareholders of the firms involved. Generally, the empirical literature, mainly based on the US and UK takeover markets, documents that target firm shareholders enjoy significantly positive abnormal returns (on the order of 20-40% on average) at acquisition announcements – quite an intuitive finding given the hefty premiums offered by acquirers (see., e.g., Song and Walkling, 1993; Bauguess, Moeller, Schlingemann and Zutter, 2009).

Unfortunately, things are less clear cut for acquirers. Most studies agree that in acquisitions of listed targets acquiring firms realize negative to zero abnormal returns at the acquisition announcement (Andrade, Mitchell and Stafford, 2001). However, recent evidence from M&As around the world shows that acquiring firms do gain in acquisitions of public firms beyond the most competitive takeover markets (the US, UK, and Canada) as they pay lower premiums, while share-for share offers are at least non-value destroying for their shareholders (Alexandridis, Petmezas and Travlos, 2010).¹⁵ While the conclusions regarding acquisitions of public targets are not as unanimous as one would like them be, the evidence

¹⁵ See below (Section 5) for how the method of payment shapes the M&A-related shareholder wealth effects.

from private acquisitions is far clearer: acquiring firms gain, particularly when stock is used as a method of payment (Chang, 1998; Fuller, Netter and Stegemoller, 2002).

The combined entity (target and acquirer) generally enjoys a positive abnormal return around the announcement date (Bradley, Desai and Kim, 1988; Mulherin and Boone, 2000; Bhagat, Dong, Hirshleifer and Noah, 2005). As noted above, the combined firm returns are used as a proxy for the overall synergy gains brought about by the deal.

Turning to studies of long-term performance, Malatesta (1983) and Asquith (1983), among others, report significant negative abnormal returns in the year following the outcome announcement. Further, Agrawal, Jaffe and Mandelker (1992) observe that acquiring firm shareholders suffer a statistically significant loss of about 10% over the five-year period after the merger. Loderer and Martin (1992) find evidence of underperformance over three, but not over five, years following an acquisition. Contrary to the above findings, Franks, Harris and Titman (1991) do not find significant underperformance over three years after the acquisition. They conclude that previous findings of poor performance after takeovers are likely due to benchmark portfolio errors rather than mispricing at the time of the deal. In addition, Loughran and Vijh (1997) show that acquirers paying with cash outperform the relevant benchmark over 5 years following the deal, while the converse is true for acquirers paying with stock. Rau and Vermaelen (1998) show that the negative abnormal stock performance over the 3-year following the deal is mostly concentrated among high valuation (low book-to-market) acquirers, so-called “glamour” firms. Most recently, Bouwman, Fuller and Nain (2009) show that 2-year post-acquisition returns for deals initiated during high stock market valuation periods underperform those initiated during low stock market valuation period.

4.1. Measuring value creation

To measure value creation from M&As one can examine the effect of these transactions on acquirer shareholder wealth, target shareholder wealth, the valuation of the combined entity, and the operating performance improvements. From the perspective of finance theory, managerial decisions should enhance shareholder wealth. Is the value of acquiring and target firms' shares increasing enough to compensate investors for the risk they bear around or following an acquisition? Is the return they earn higher than the cost of capital (assuming that the required rate of return equals the opportunity cost of investing elsewhere)? The most common approach to examine value creation is the use of event study methods.¹⁶

4.1.1. Short-run event studies

If stock markets operate efficiently, they should assess all the future benefits and costs associated with a deal and incorporate them into stock prices at the time of the announcement. In this case, a short event window surrounding the announcement captures the valuation effects from mergers. Hence, assuming efficient markets, acquisition announcements will be accompanied by abnormal increases in stock prices for value-creative deals, while value-destroying acquisitions will trigger an abnormal decline in stock prices. The most widely used event windows include 2 days (-1, 0), 3 days (-1, +1), 5 days (-2, +2), and 11 days (-5, +5), where 0 indicates the announcement day itself. Including the days just before the announcement allows capturing potential information leakages, while a few extra trading days following the announcement account for any delays in the stock price reaction. Abnormal returns are computed using the expression below:

$$AR_{it} = R_{it} - E(R_{it})$$

¹⁶ The reader can refer to Kothari and Warner (2007) for a chapter-length treatment of event study methods.

where AR_{it} is the abnormal return for security i on day t ; R_{it} is the actual, observed return for security i on day t , and $E(R_{it})$ is the expected return for security i on day t . The expected return is typically estimated using two related approaches. The first is the market model, which involves estimation of the market model parameters by regressing security returns on a benchmark index (Brown and Warner, 1985). This approach is followed by, among others, Moeller, Schlingemann and Stulz (2005) and Masulis, Wang and Xie (2007). The market model parameters obtained in the estimation procedure are further applied to the return on a benchmark index for a day of interest to yield the expected return on a stock:

$$E(R_{i,t}) = \alpha_i + \beta_i R_{mt}$$

where α is the regression intercept for security i , and β is the slope coefficient for security i , and R_{mt} is either an equally-weighted or a value-weighted market index return. The parameters for the market model are most often estimated over a given number of trading days period prior to the deal, such as $(-205, -6)$ or $(-210, -11)$ day interval.

The second approach, used by Fuller, Netter and Stegemoller (2002), Dong, Hirshleifer, Richardson and Teoh (2006), and Faccio, McConnell and Stolin (2006) among others, is a market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

This is a modified market model with $\alpha=0$ and $\beta=1$ as the market model parameters. This way of specifying the expected return may be particularly useful in samples containing frequent acquirers, which might render market model parameters to an extent biased given that the estimation period includes earlier deal announcements. Nevertheless, according to Brown and Warner (1980), the difference between the two approaches is minimal.

The abnormal returns for a given day and a given firm are then cumulated over the event window so as to arrive at a cumulative abnormal return (CARs):

$$CAR_i = \sum AR_{it}$$

The statistical significance of the resultant CARs is then tested using formal statistical test procedures exploiting the time-series and cross-sectional variation in the returns. In addition, one can appreciate the economic significance of these estimates by translating the percentage value changes into dollar gains (losses) by multiplying the CARs by the market value of the firm measured immediately prior to the beginning of the event window.

4.1.2. A note of caution on interpreting announcement effects

An important caveat regarding the interpretation of M&A announcement wealth effects is in order. The existing literature tends to make conclusions regarding M&A value creation based on announcement period abnormal stock returns as described in the previous subsection. However, for the announcement effects to accurately reflect the value creation from the deal two important assumptions have to be maintained (apart from market efficiency of course): i) the bid is not anticipated, and ii) the bid announcement is uncontaminated with other information regarding the stand-alone value of the firms involved. There is growing evidence that neither of these assumptions is uncontested.

Regarding the anticipation effect, Cai, Song and Walkling (2011) show that takeover bids are anticipated at the time of the first bid after a dormant period (at the industry level). As a result, the announcement period returns for deals following the initial bid are underestimated. When one takes into account the market reaction of future bidders to an industry's initial bid, the returns to bidding are considerably higher.

Turning to the contamination issue, Bhagat, Dong, Hirshleifer and Noah (2005) show that conventional announcement period CARs are subject to revelation bias, i.e., they reflect information about bidder stand-alone value in addition to the information regarding the bid itself. Using intervening events, such as competing bids, they are able to disentangle the two effects and show that conventional CARs are biased downward. In addition, certain takeover

bids, such as stock-financed public firm acquisitions, are essentially joint announcements (a takeover and an equity issue). Issues of public equity are known to be associated with negative abnormal stock returns; thus, one cannot attribute the announcement period return purely to the takeover-related value changes. Golubov, Petmezas and Travlos (2012a) address this issue and develop a method that allows for the estimation of returns attributable to the implied equity issuance using a sample of seasoned equity offerings (SEOs). Net of this effect, stock-financed acquisitions of public firms are found to be non-value destructive, and the method of payment does not explain the part of the announcement return attributable to the acquisition decision.

In general, one has to be aware of potential confounding and anticipation effects in event studies and be careful in drawing firm conclusions regarding the value implications of corporate events based on event study results.

4.1.3. Long-run event studies

While the stock market reacts to new information and does so fairly quickly, there is some evidence of “stickiness” in stock prices (i.e. the stock market reaction to corporate events may be delayed). Capital market participants may need the time to revise their judgment based on new information about the acquisition integration and the response of rivals. This implies that the wealth effects from acquisitions may need to be assessed over long-run event windows. Most common windows used are 1, 2, 3, and 5 years after the deal, and the most widely used methodologies employed to calculate long-run abnormal returns are Calendar Time Portfolio Regressions (CTPRs), Calendar Time Abnormal Returns (CTARs), Buy and Hold Abnormal Returns (BHARs) and Cumulative Abnormal Returns (CARs).¹⁷ However, there are two main problems associated with long-run event studies: i) difficulties with

¹⁷ See Barber and Lyon (1997), Lyon, Barber and Tsai (1999), and Mitchell and Stafford (2000) for a discussion of these methodologies and issues arising in their implementation.

statistical test procedures, which result in reduced reliability of results (Barber and Lyon, 1997; Kothari and Warner, 1997; Lyon, Barber and Tsai, 1999), and ii) other events or policy changes occurring within the event window or expected beyond this window may impact the value of the firm. As a matter of fact, it is not feasible to isolate the effect of a takeover on long-term abnormal returns from other events affecting the firm during the event window.

In general, given the “bad model” problem (i.e., no model in finance can accurately predict stock returns, and this problem is compounded with longer horizons), the results of long-run studies may be biased and should therefore be interpreted with caution.

4.1.4 Post-acquisition operating performance

If acquisitions create real economic efficiency improvements, they have to eventually show up in reported accounting numbers. Thus, an alternative approach to estimating merger gains utilizes changes in (abnormal) operating performance of the merged firm.

The most common measure of abnormal operating performance of the acquiring firm is the operating ROA or ROS (EBITDA over total assets or sales, respectively) adjusted for industry median or operating performance of a control firm based on industry classification, size, and pre-merger operating performance. If a control firm is used, the process can be described as follows.

In the year immediately prior to the acquisition announcement the acquirer is matched to a control firm from the same industry based on SIC codes or Fama-French classifications. The control firm is chosen such that its book value of total assets is within 90% and 110% of acquirer total assets and its ROA is closest to that of the acquirer. If there is no firm within the 90%-110% limit, it is expanded to 70%-130% and again the firm with the ROA closest to that of the acquirer is chosen. Finally, if the 70%-130% filter fails, the range is expanded to the entire industry and the firm with the ROA measure closest to that of the acquirer is

picked. Each acquisition is typically followed for 3 years after its completion. If a matching firm does not have 3 years of data, the process is repeated to select another matching company to complete the 3-year series. For each year, the ROA of the control firm is subtracted from the ROA of the merged firm, and the average for the three years is taken. This number can then be compared to the pre-acquisition abnormal operating performance. See Barber and Lyon (1996) for more details and an evaluation of different variations of abnormal operating performance methodology.

A number of studies examine the operating performance of the acquiring firms reporting mixed results. Healy, Palepu and Ruback (1992) observe increases in the post-merger cash flow operating performance of merged firms for a sample of 50 largest US mergers. Heron and Lie (2002) report evidence of operating performance improvements using a more comprehensive sample of US deals, while Powell and Stark (2005) show evidence of (modest) operating performance improvements following UK M&A deals. In contrast, however, no significant operating performance improvements are found by Ghosh (2001) for US acquirers and Sharma and Ho (2002) for Australian acquirers.

4.2. *Bondholder wealth effects*

Shareholder wealth effects are only a part of the overall change in the value of the firm. The value of the firms' debt may also change, for, instance, due to a co-insurance effect. The investigation of this phenomenon is complicated most notably by the two following issues: i) few firms have publicly traded debt, and findings based on firms that do have bonds outstanding may not be generalizable to all acquirers; and ii) methodological issues, such appropriate benchmarks, multiple bond issues, and thin trading; the latter is especially serious as it may require researchers to use monthly bond returns, which lowers the power of the tests (Bessembinder, Kahle, Maxwell and Xu, 2009).

Nevertheless, several studies examine bondholder wealth effects in M&As. Kim and McConnell (1977) and Asquith and Kim (1982) do not find any bondholder wealth changes surrounding M&A deals, while Dennis and McConnell (1986) find negative acquirer bondholder returns. Eger (1983) and Maquieira, Megginson and Nail (1998) focus on stock-for-stock mergers and find evidence of positive abnormal returns to acquiring firm bondholders; however Travlos (1987) reports the opposite, consistent with the release of negative information hypothesis. Billett, King and Mauer (2004) show that below investment grade target firm bonds earn significantly positive abnormal returns, while acquirer bondholders tend to experience negative abnormal returns, consistent with the existence of a co-insurance effect.

Bessembinder, Kahle, Maxwell and Xu (2009) address various methodological issues in measuring abnormal bond performance. They also show that when using daily data from TRACE database, the power of the tests is significantly improved. They confirm that on average acquiring firm bondholders realize negative abnormal returns at acquisition announcements; however, this result is not detected when using monthly data. As the finer daily data has only recently become available to researchers, we expect more evidence on bondholder wealth effects in M&As to emerge; in fact, we see this as a fruitful area for further research.

5. Determinants of acquisition returns

Apart from synergy, overconfidence and agency cost proxies described earlier, several firm and deal characteristics shape acquisition returns. Since the literature on M&A value creation is dominated by short-run event studies, we focus on the findings of this type of studies.¹⁸

Below, we present some of the most important characteristics noted in the literature, their

¹⁸ In fact, only a few variables are consistently found to be significant in explaining long-run acquirer returns, most notably the method of payment, stock market and acquirer valuation, and the type of the deal (tender offer versus merger). See section on long-run event studies above.

association with bidder returns (and target returns where evidence exists), and the explanations put forward for these relationships.

5.1. Target firm listing status

The organizational form of the target firm (whether the target is a public, private or subsidiary firm) is a very important determinant of takeover gains. Chang (1998), Fuller, Netter and Stegemoller (2002) for the US, Faccio, McConnell and Stolin (2006) for several Western European countries, and Draper and Paudyal (2006) for the UK show that bids for listed (public) targets lead to zero-to-negative bidder returns, while acquisitions of non-listed (private or subsidiary) firms lead to positive returns for bidding firms. These findings are consistent with bidders acquiring privately held firms capturing an illiquidity discount.¹⁹ In fact, Officer (2007a) shows that acquisitions of unlisted firms occur at 15% to 30% lower multiples than otherwise comparable acquisitions of listed firms.

In addition, stock-financed acquisitions of private targets are associated with even larger positive bidder returns. This could be due to the following two effects. First, acceptance of a stock offer by the shareholders of a private target, who are likely to have received private information from the bidder, conveys to the market that the bidder's shares are not overvalued (the information hypothesis). Second, given that the ownership in private targets is typically concentrated, a stock offer creates block holders. Since block holders have a significant stake in the combined firm, they have the incentives (and the ability) to monitor managers; thus, the market may be pricing the benefits of this expected monitoring at the time of the announcement (the monitoring hypothesis).

¹⁹ A related argument is as follows. If the market for corporate control is competitive, such as that for publicly traded firms, then any acquisition should represent a zero NPV investment. In the case of a privately held target however competition is likely limited, so that the likelihood of underpayment is high.

5.2. *Method of payment*

The method of payment is also among the most significant determinants of acquisition returns.

First, Travlos (1987) documents that bidders offering their own stock as medium of exchange in public firm acquisitions experience lower (negative) returns than those offering cash payment (normal returns). This is consistent with the Myers and Majluf (1984) adverse selection framework whereby value-maximizing managers in possession of superior information regarding the value of the firm under their control decide to issue equity only when it is overvalued. Investors are aware of this behaviour and adjust the stock price of equity issuers down accordingly.²⁰ Supporting this view, Chemmanur, Paeglis and Simonyan (2009) show that acquirers whose stock prices are significantly higher than intrinsic values estimated by accounting earnings based models are more likely to use stock as means of payment, and that the degree of this overvaluation negatively affects bidder returns.

Second, Mitchell, Pulvino and Stafford (2004) show that almost half of the negative acquirer return at announcements of stock-financed public firm acquisitions can be attributed to price pressure effects rather than informed trading. Public firm takeover situations provide opportunities for merger arbitrage, whereby arbitrageurs assume the risk of deal completion by buying target firm stock at the post-announcement price hoping to receive the offer price at deal execution. However, when the offer consideration is stock, particularly in fixed exchange ratio stock offers, the value of the arbitrage position is uncertain and depends on the value of acquiring firm stock at deal completion. The arbitrageurs therefore short sell acquirer shares to lock in the arbitrage spread existing at the announcement of stock-financed deals, thereby exerting negative price pressure on the acquirer stock. In this case, the negative

²⁰ In fact, Houston and Ryngaert (1997) for a sample of bank mergers, and Officer (2004) for a larger sample of M&A deals, show that acquirer announcement returns are more negative when the value of consideration is more sensitive to acquirer stock price (as is the case in fixed exchange ratio deals where the offer is fixed in the number of shares offered to the target but the value of the payment depends on the acquirer stock price at closing).

announcement effect is not caused by trading on fundamentals as in the Myers and Majluf (1984) adverse selection framework.²¹

Target firms also gain less when the offer consideration is stock (Wansley, Lane and Yang (1983); Huang and Walkling, 1987). Higher premiums in cash offers can be explained by the fact that cash offers are usually taxable transactions, i.e., selling shareholders become liable for tax on any capital gains on the shares sold; in contrast, there is no immediate tax liability in a stock swap deal (Brown and Ryngaert, 1991). Accordingly, stock offers can entail lower premiums other things being equal.²²

Further, as noted above, the effects of the method of payment on bidder returns and target listing status are interrelated, as bidders paying with equity in acquisitions of non-listed firms (private and subsidiary) enjoy higher returns than those paying with cash (Chang 1998, Fuller, Netter and Stegemoller 2002), which is opposite to what is observed in listed firm acquisitions.

Finally, recent evidence by Alexandridis, Petmezas and Travlos (2010) shows that acquirers do not experience negative returns even when using stock as a method of payment in acquisitions taking place in relatively less competitive takeover markets (outside the US, UK and Canada). The authors attribute this finding to the fact that the negative signaling effect of stock financing is subsided by the lower premium offered to target firms in less competitive takeover markets.

²¹ Note that the focus of this discussion is the method of payment (i.e., the medium of exchange). Several studies also examine the *source of financing*. Holding the method of payment fixed (i.e., cash deals) Schlingemann (2004) shows that acquisitions paid for with cash that is likely to have come from prior equity issues are associated with higher bidder returns (he argues that this is due to the resolution of uncertainty regarding the use of funds), while the amount of ex-ante debt financing does not affect the returns. On the other hand, Bharadwaj and Shivdasani (2003) show that bank-debt-financed *tender offers* are associated with higher bidder returns due to the certification and monitoring effect of bank debt; Martynova and Renneboog (2007) report similar findings for European M&A deals.

²² Malmendier, Opp and Saidi (2011) provide an alternative explanation for why cash offers exhibit higher announcement returns for target firm shareholders. They argue that cash offers reveal positive information about target firm's stand alone value (while stock offers do not), so that part of the target firm stock price increase at the announcement reflects this revaluation.

5.3. *Industry relatedness*

Industry relatedness of the target firm also affects acquisition returns. Both Matsusaka (1993) and Hubbard and Palia (1999) show that during the conglomerate merger wave of the 1960s and early 1970s in the US diversifying acquisitions were welcomed by the market with positive bidder returns. However, the former study reports that these gains are higher than those for related acquisitions, while the latter reports the opposite.

Focusing on a broader sample of M&A deals, Morck, Shleifer and Vishny (1990) provide evidence that diversifying acquisitions, defined as those where the acquirer and the target do not share the same primary 4-digit SIC code, perform worse than focused deals.²³ Fan and Goyal (2006) find that mergers achieving vertical integration also generate higher acquirer returns than pure diversifying deals. Further, Hoberg and Phillips (2010) report that firms using similar product description language (proxy for asset similarities and complementarities) generate higher acquisition gains. In bank mergers, DeLong (2001) documents that the most value creative deals are those that are focused in terms of both activity and geography.

Finally, Moeller and Schlingemann (2005) show that deals diversifying the acquiring firm internationally exhibit lower returns than those decreasing international diversification (see also the subsection on cross-border acquisitions below).

5.4. *Firm size*

The size of the bidding and target firms affects acquisitions returns. Bidder (target) size is typically defined as the bidding (target) firm market capitalization some time prior to the acquisition announcement, usually four weeks (see, e.g., Fuller, Netter and Stegemoller,

²³ Another measure of industry relatedness proposed by the authors is the correlation between monthly stock returns of the bidder and the target. Other studies have also used 3-digit or 2-digit SIC codes or Fama-French industry classifications.

2002).²⁴ Moeller, Schlingemann and Stulz (2004) provide evidence that bidder announcement returns are negatively related to bidder size. Bidder size may proxy for the severity of agency costs, as incentives of managers in small firms are better aligned with those of the shareholders. Managers in smaller firms should also be subject to closer monitoring due to higher ownership concentration as shown by Demsetz and Lehn (1985). In addition, managers of larger firms may be more prone to hubris given that these managers feel more important socially, have succeeded in growing the firm and face fewer obstacles in finding resources to finance the deal (Moeller, Schlingemann and Stulz, 2004). Schwert (2000) shows that larger targets also generate lower acquisition returns for target firm shareholders given that larger targets receive lower percentage takeover premiums.

5.5. Firm valuation/investment opportunities

The valuations of the merging firms (which also proxy for growth opportunities) shape acquisition returns. Early studies adopt Tobin's Q as a measure of firm valuation. Tobin's Q is a ratio of the firm's market value of assets to their replacement cost. It is typically approximated as the book value of assets plus market value of common equity less the book value of common equity (and sometimes also less deferred taxes) divided by the book value of assets. Lang, Stulz and Walkling (1989) and Servaes (1991) show that high Q bidders enjoy higher returns. Other studies employ a close counterpart of Tobin's Q, the book-to-market ratio (B/M) as alternative proxy for firm valuation. B/M is usually defined as the book value of equity divided by the market value of equity. Dong, Hirshleifer, Richardson and Teoh (2006) document that bidder and target short-run returns are positively associated with the book-to-market ratios of the respective firms, which comes in contrast to earlier evidence.

²⁴ Others also use market or book value of assets.

5.6. *Pre-announcement stock price run-up*

The pre-announcement stock price behavior affects acquisition returns. Bidder (target) stock price run-up is most commonly calculated as the market-adjusted buy-and-hold stock return over a certain pre-announcement trading period, such as 200 trading days ending 6 days prior to the announcement date (Moeller, Schlingemann and Stulz, 2007). Rosen (2006) establishes a negative association between bidder returns and bidder stock price run-up, but Schwert (1996) does not find such a relationship between target returns and target stock price run-up.

5.7. *Information asymmetry*

Information asymmetry regarding the value of the merging firms affects acquisition returns. While information asymmetry is impossible to measure with precision, the most commonly used proxy is idiosyncratic stock return volatility introduced by Dierkens (1991). It is measured as the standard deviation of the daily market-adjusted stock returns (or market model residuals) over a certain time period, such as 200 trading days ending 6 days prior to the announcement of the deal. Moeller, Schlingemann and Stulz (2007) provide evidence that high information asymmetry (high sigma) bidders generate lower announcement period returns in stock-financed acquisitions. In addition, Officer, Poulsen and Stegemoller (2009) show that bidders gain more when stock is used for acquisitions of high sigma targets. Alternative proxies for information asymmetry include the number of analysts following the firm, the dispersion of analyst forecasts, mean analyst forecast error, firm age, bid-ask spread, the ratio of intangibles to total assets or the ratio of R&D expenses to sales.

5.8. *Cross-border acquisitions*

The returns to merging firms also seem to be affected by the cross-border status of the deal. Holding the acquiring firm nation fixed (US) Doukas and Travlos (1988) show that

multinational corporations expanding into new markets for the first time enjoy significantly positive returns. More recently, however, Moeller and Schlingemann (2005) show that cross-border acquisitions generate lower returns than domestic acquisitions for US acquirers; the same is true for UK acquirers (Conn, Cosh, Guest and Hughes, 2005). Holding the target firm country fixed (Canada), Eckbo and Thorburn (2000) show that domestic acquirers perform better than foreign (US) acquirers.

Within cross-border deals, John et al. (2010) show that acquirer returns in cross-border public firm acquisition are positive when the target firm country has low shareholder protection and negative when the target firm country has high shareholder protection (but no such effect in private firm acquisitions). They also show that acquirer returns are increasing with the quality of accounting standards but decreasing with creditor protection in the target firm nation.

On the target side, target firm shareholders gain more when they are acquired by foreign firms (Harris and Ravenscraft, 1991, Shaked, Michel and McClain, 1991). However, Cebenoyan, Papaiaonnou and Travlos (1992) argue that this is not always the case, and holds only when the foreign competition is high. Servaes and Zenner (1994) show that returns to foreign acquisitions in the US vary with the tax regimes and reforms of the 1980s, suggesting that tax considerations are important in cross-border deals.

Bris and Cabolis (2008) document that cross-border acquisitions by firms located in high investor protection regimes acquiring firms from weaker investor protection regimes leads to higher target firm returns. A similar relationship is observed for the differences in accounting standards of the merging firms. The authors argue that target gains (and thus premiums) in cross-border acquisitions represent the value of shifts in investor protection.

5.9. Acquisition technique

Acquisition technique has also been found to affect acquisition returns. Jensen and Ruback (1983) document that *tender offers* are associated with higher bidder and target announcement period returns. Tender offers are, to a large extent, cash-financed deals, while mergers are more typically stock offers. As already described above, stock-financed deals are received by the market as signals of bidder overvaluation, leading to declines in bidder stock price. Thus, returns to bidders and targets in tender offers are, on average, higher than in mergers. In addition, Boone and Mulherin (2007, 2008) study whether the use of auctions vs. negotiated deals affects the returns to the merging firms, but do not find such effects (this point is also related to takeover competition, see below).

5.10. Relative size of the deal

Relative size of the deal also affects merger gains. Relative size is usually defined as the deal value divided by bidder market value four weeks prior to the acquisition announcement. Target market values can be used instead of deal value in public firm acquisitions. Bidder returns have been shown to decrease with the relative size of the target in public firm acquisitions; however, bidders experience higher returns as the relative deal size increases in acquisitions of privately held firms (Fuller, Netter and Stegemoller, 2002). Target firm returns exhibit a negative relationship with the relative size of the deal (Officer, 2003).

5.11. Takeover Competition

Competition for the target is also important in explaining merger gains. Intuitively, competition for the target should decrease bidder returns and increase target returns as it raises the price that the successful acquirer must pay. Empirically, it is difficult to capture such competition. While the number of bidders in a given takeover contest is an obvious

candidate, it does not capture competition that the acquirer may pre-empt by offering a sufficiently high premium. Michel and Shaked (1988) show that target returns in multiple bidder contests appear to be higher but this is only detectable after the arrival of the second bid, not at the announcement of the first bid.

In addition, while multiple bidder contests are rare, suggesting that most bidders are uncontested in their pursuit of a given target, there is significant *pre-announcement* competition for the target. However, it does not appear to affect the returns to target (Boone and Mulherin, 2007) or bidding firms (Boone and Mulherin, 2008). James and Wier (1987) show that in bank mergers, where identification of potential competing bidders is relatively easy due to the nature of regulation, the returns to acquiring banks are negatively affected by potential takeover competition, while they are positively related to the availability of alternative target banks. Finally, Alexandridis, Petmezas and Travlos (2010) provide evidence that acquirers enjoy larger gains at the expense of target firms in countries with less competitive takeover markets as proxied by the percentage of public firms taken over in a given country in a given year.

5.12. Hostility

The resistance of target firm managers also affects acquisition returns. Hostile deals are acquisitions pursued without the acceptance of the target firm management. Servaes (1991) documents that hostile bids are associated with relatively lower bidder returns, while Schwert (2000) finds no significant effect for the bidder, but a positive effect for the target. Takeover premiums tend to be higher in hostile deals in order to induce the selling shareholders to surrender to the predator.

5.13. Financial advisor reputation

Given that most acquisitions involve financial advisors responsible for carrying out the deal, several studies examine the effect of financial advisor (investment bank) reputation on acquisition returns. McLaughlin (1992) finds acquirers using lower-tier bankers as financial advisors enjoy higher returns. On the other hand, Servaes and Zenner (1996) find no such relationship. Rau (2000) finds that top-tier advisors do not deliver better returns apart from in tender offers, and that post-acquisition returns are more negative when a large part of advisory fees is contingent on deal completion. Kale, Kini and Ryan (2003) examine tender offers and show that only the relative reputation of the merging parties' advisors has a positive effect on bidder returns. Most recently, Golubov, Petmezas and Travlos (2012b) show that top-tier advisors are associated with higher bidder returns but only in public firm acquisitions, arguing that the publicity of listed firm takeover situations creates the exposure required for the reputation forces to come in effect.

5.14. Other factors

As noted above, this is necessarily an incomplete list of determinants of takeover-related gains. We have only attempted to summarize the most prominent variables that are found to be important in many studies. Others have also established that factors influencing returns to merger announcements range from leverage (Maloney, McCormick and Mitchell, 1993), accounting conservatism (Francis and Martin, 2010) and target firm investor inertia (Baker, Coval, and Stein, 2007) to stock market valuations (Bouwman, Fuller and Nain, 2009), merger market sentiment (Rosen, 2006) and whether target firm CEOs receive unscheduled stock option grants during merger negotiations (Fich, Cai and Tran, 2011). As the research goes forward, many new determinants of M&A-related gains will be uncovered.

6. *Other M&A-related empirical research*

While the wealth effects of M&As and their determinants are the most popular lines of inquiry within empirical M&A research (hence our focus in this chapter), they are by no means the only ones. Other phenomena associated with M&A deals have also received considerable attention in the literature. Most notably they are (without going into details of the findings): the choice of payment method (e.g. Martin, 1996; Ghosh and Ruland, 1988; Amihud, Lev and Travlos, 1990; Faccio and Masulis, 2005; Chemmanur, Paeglis and Simonyan, 2009), determinants of deal completion (e.g. Hoffmeister and Dyl, 1981; Walkling 1985; Samuelson and Rosenthal, 1986; Officer, 2003), questions pertaining to merger arbitrage (e.g. Brown and Raymond, 1986, Larcker and Lys, 1987; Baker and Savaşoglu, 2002; Mitchell and Pulvino, 2001; Jindra and Walkling, 2004; Hsieh and Walkling, 2005; Officer, 2007b), and prediction of takeover targets (e.g. Palepu, 1986; Mitchell and Lehn, 1990; Ambrose and Megginson, 1992; Brar, Giamouridis and Liodakis, 2009).

There also seem to be fruitful research avenues on the intersection of M&A and asset pricing. For instance, there is evidence that exposure to takeovers affects stock returns (Cremers, Nair and John, 2009), and that stock prices themselves affect takeover likelihoods (Edmans, Goldstein and Jiang, 2011).

7. *Managerial implications*

What can we as a society learn and gain from the wealth of studies on M&A transactions? What should managers keep in mind when carrying out their acquisition plans? What should board members remember when they approve deals? What should shareholders expect when they invest? Here we briefly outline some of the most prominent practical implications.

M&A are complex events, no wonder that many acquisitions fail to create value for acquirers, and some even destroy significant value. If one focuses on this general finding one

may wonder why are managers even allowed to pursue these deals at this scale? The “M&A does not pay” conclusion is somewhat premature as it is based on the overall average. There is wide variation around this average. In fact, Moeller, Schlingemann and Stulz (2005) show that while during the 1998-2001 period in the US acquisitions destroyed value on average, this overall loss is caused by a small number of large-loss deals. When one purges the sample of these unfortunate transactions, the overall bidding activity appears to be value creative.²⁵ The truth is there are firms that succeed in creating substantial wealth through acquisitions. How do they do it?

Perhaps the most important thing is motivation. The right motive for acquisitions should be the pursuit of synergies, not personal gain for managers. The market appears to be able to see through agency-motivated managers and punish them by depressing the firms’ share prices. And even when the managers truly believe they are about to create value from another acquisition, they should bear in mind that they often tend to be overly optimistic and overestimate their abilities.²⁶ Again, the markets appear to sense these situations and respond accordingly. In light of this, it is reassuring that the synergy motive seems to be the driving force behind most deals; however, deals motivated by agency conflicts or hubris are also part of the M&A arena (see Berkovitch and Narayanan, 1993 and Seth, Song and Pettit, 2000).

Another crucial issue is that acquirers often overpay for their targets, so that more than the created synergy is given away to the target firm shareholders, leaving the acquirer worse off even in well-motivated deals (Eccles, Lanes and Wilson, 1999). Other frequently cited reasons for M&A failure include poor business fit between the merging firms, undue influence from unscrupulous investment bankers or other advisors, and difficulties in post-merger integration arising from managerial power struggle and personnel tensions.

²⁵ In fact, Moeller, Schlingemann and Stulz (2005) note that these large loss deals were conducted by rather overvalued bidders, so that the wealth destruction they document could be attributed to revaluation of bidder stand alone values.

²⁶ An example from the day-to-day world illustrates this point well: Almost all people believe that their driving skills are above average, which is simply impossible.

But of course, all of these issues should bear thought once the firm has made a thorough review of its strategic alternatives in light of its industry developments and a conclusion that M&A is the way forward has been reached. While M&A is a powerful tool for rapid growth and value creation (though not always), it is not the only one.

8. Conclusion

Empirical M&A research is vast and growing. We have attempted to summarize some of the most prominent results in this literature, relating them to the pertinent academic theory, and pointing out possible managerial implications of these findings. As the empirical literature on the M&A activity exploded during the last three decades, largely due to the availability of machine-readable transaction databases, academics have made considerable progress in their understanding of this complex activity. However, much is still to be discovered. For instance, the overwhelming majority of existing evidence pertains to the US takeover market, with some advances into Canadian and European (mostly UK) settings. As the M&A activity becomes more global, many interesting tests exploiting the different institutional characteristics of various countries become amenable to researchers. And even for the well-researched markets, our understanding of M&As will improve as new and finer data become available. Meanwhile, M&As continue to be an integral part of the business world, a hotly debated issue for board members and policy makers, and a fruitful area for further research.

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