

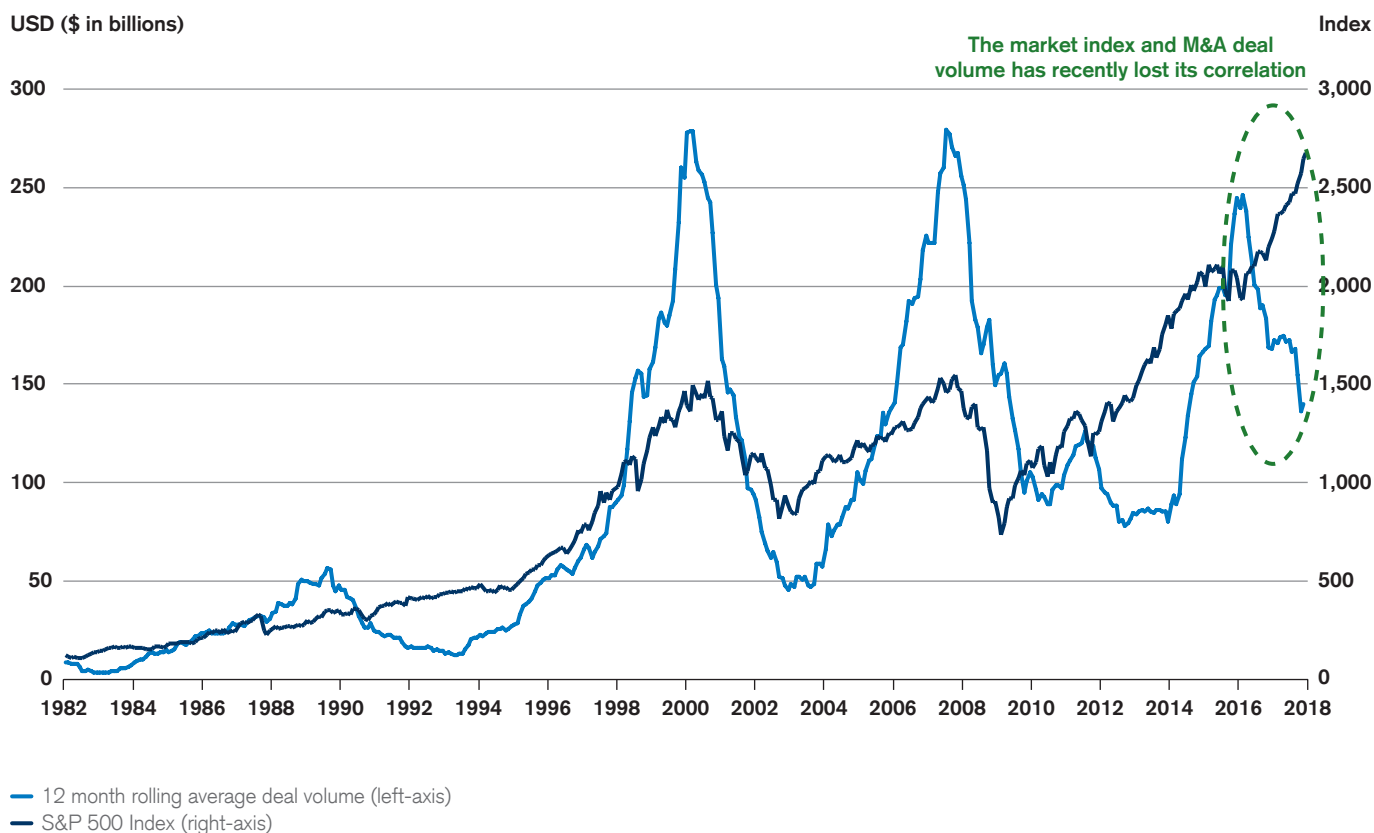
2018 First Quarter
Corporate Insights
**Behind the numbers:
Mastering M&A**



Introduction

We are nearly a decade into an economic recovery in the wake of the 2008 financial crisis and its aftermath. In typical economic recoveries, a rising stock market and equity values are accompanied by increasing strategic activity among corporates, as rising equity values boost executive confidence in deal-making and enhanced profitability and rising stock prices provide ample firepower to pay for those deals. However, we have recently seen that deal activity in the U.S. does not seem to be rising in tandem with equity markets, as it has previously. The graph below¹ shows us the breaking of that trend, causing one market observer to dub this “M&A MIA”²

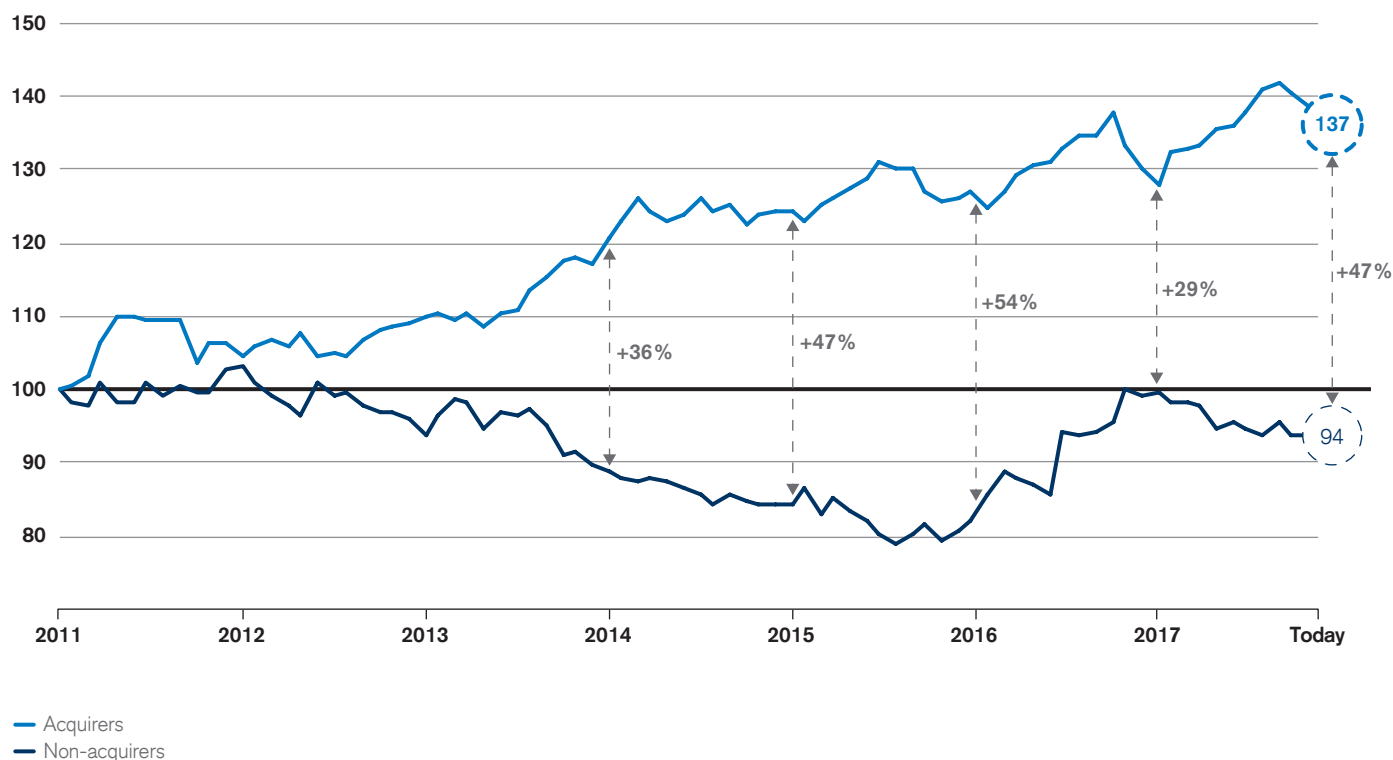
Exhibit 1: M&A deal volume vs. S&P500



We find this decline in M&A activity puzzling, since growth strategies driven by M&A have consistently outperformed the broader market during the latest recovery. Exhibit 2 revisits an analysis we did at the end of 2016, and shows that those

companies that have turbocharged their growth strategies via M&A, in particular since 2012, have consistently outperformed the market and their peers on a TSR basis ... and continue to do so.³

Exhibit 2: Total shareholder return for aggregates: Acquirers vs. non-acquirers



So what is going on?

A recent survey of more than 500 C-level executives reveals that a surprising confidence gap may be responsible for the absence of a strong recovery in M&A activity.⁴ What lies behind this confidence gap? Executives cited a number of things, including the increasing attraction of joint ventures, as well as continuing uncertainty around key economic and geopolitical issues, such as U.S. tax and trade policy and the consequences of Brexit.

It may also be that this confidence gap is further exacerbated by a pervasive – but, we believe, mistaken – belief that “most M&A deals destroy value”.⁵

In this paper, the ninth in our ongoing series of **Credit Suisse Corporate Insights**, we revisit M&A and – in particular – the usefulness of some simplistic M&A mathematical shortcuts. First, is there any truth to the notion that “most M&A deals destroy value”? Second, does conventional M&A math provide the right signals about the viability of doing a deal and taking advantage of M&A’s demonstrated ability to drive and sustain shareholder value? To answer this second question, we will look at several accounting-centric ways in which M&A is typically assessed – the math around EPS accretion/dilution, the size of any premium paid, and whether goodwill and intangibles adversely impact the market’s view of operating performance. We believe that each of these ideas needs fresh thinking and – upon revisiting each in turn – we will show that M&A remains a vital and value-creating means of growing businesses, providing platforms for new products, markets and ideas.

Value creation in M&A

The inherent purpose of M&A is to create efficiencies that have a positive impact on the overall economy. The combination of two entities is meant to create a more competitively-advantaged firm with increased market power to which investors may justifiably ascribe a premium valuation multiple. Synergies and efficiencies create a “value pool” which is allocated between both the acquirer and the target. Thus, net of how M&A impacts the buyer and seller separately, M&A is a value-creating event when taken as whole.

Short-term performance of buyers and sellers around the announcement

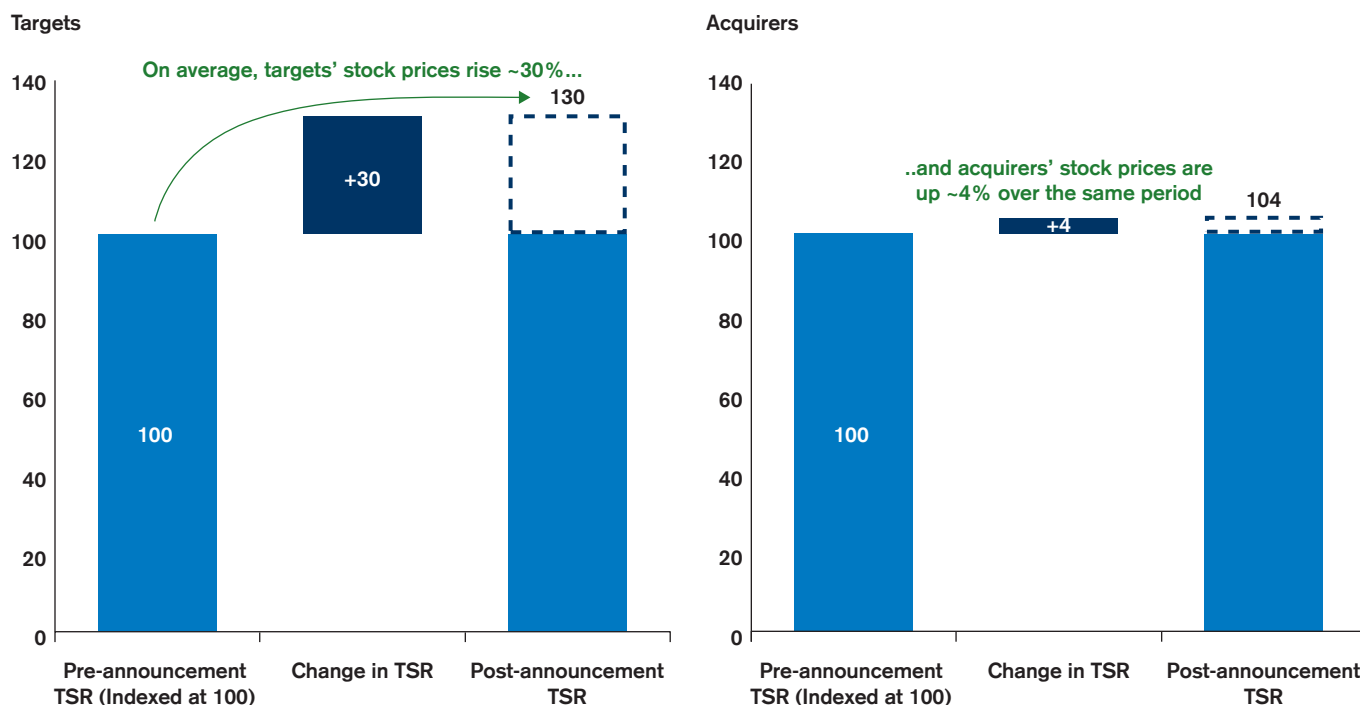
Sellers almost always demonstrably create value in the course of the sale. From the perspective of the seller, it is a singular,

one-time event, and the price paid is easily compared to the market price (at least for publicly-traded companies). In most circumstances, if the owners were not getting a premium or other value out of the deal, they would not sell.

M&A from the point of view of a **buyer** is more nuanced and is thus where most of the debate arises. The acquirer not only pays a premium, but also carries execution risk. The short-term value created for the acquirer (and its shareholders) is best measured by the market's collective reaction around the announcement of a deal. In Exhibit 3 we examined an 80-day TSR, comparing all public-to-public transactions⁶ of the acquiring and selling companies to the performance of the MSCI World Index, from 40 days pre-announcement to 40 days after announcement.

Exhibit 3: 80 day total shareholder return performance around deal announcement since 1981

TSR: 40 days before announcement to 40 days after announcement, relative to MSCI World Index



While M&A is a value-creating event in the short-term, the objective for an acquirer in a transaction is to improve its long-term share price performance. The pitfalls of how to communicate the strategic logic of an acquisition, how to think about EPS, what do premia and goodwill do to the market's sense of the deal ... these are all the challenges faced by acquirers. And it is from that particular perspective – the point of view of an acquirer – that we address the bulk of this paper.

Long-term value creation from the perspective of the acquirer

The simplicity of an M&A analysis from the seller's point of view is mirrored by the more complex analysis of a buyer's point of view. From the buyer's point of view, each deal can be quite challenging to measure value creation or destruction.

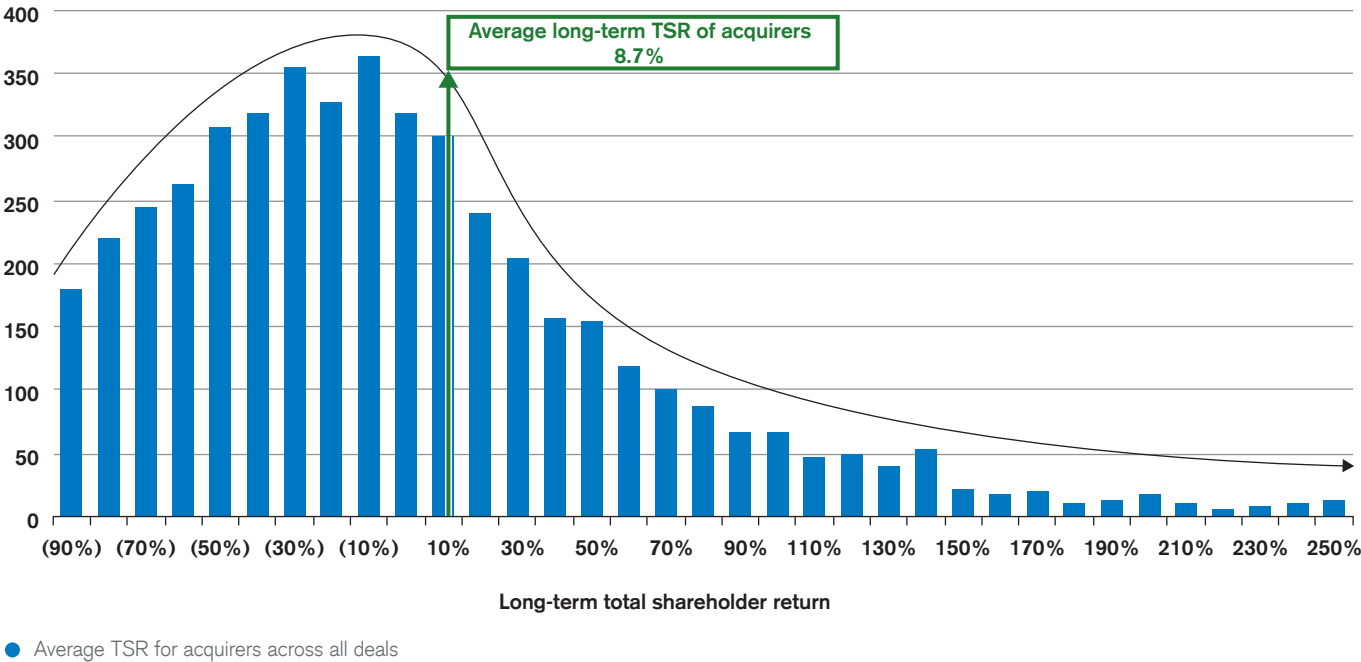
The ideal analysis would compare the total shareholder return (TSR) of the acquirer post any acquisition to the TSR of the acquirer *had the deal not occurred*. Unfortunately, the latter is not observable, so we are left with comparing the TSR of the acquirer to a large basket of other companies ... our assumption being that if the market favors a deal, the TSR is better than market performance overall.

In this study, we evaluated approximately 110,000 public M&A transactions since 1981 (publicly-traded acquirers). From that universe, we then filtered for acquirers from the U.S., Canada, and Western Europe with an enterprise value of at least \$200mm. Of the approximately 6,000 deals remaining, we measured the long-term TSR of the acquirers relative to the MSCI World Index which is illustrated in Exhibit 4.⁷

Exhibit 4: Long-term total shareholder return after deal vs. frequency since 1981

TSR: 4 months before announcement to 3 years after closing, relative to MSCI World Index

Instances



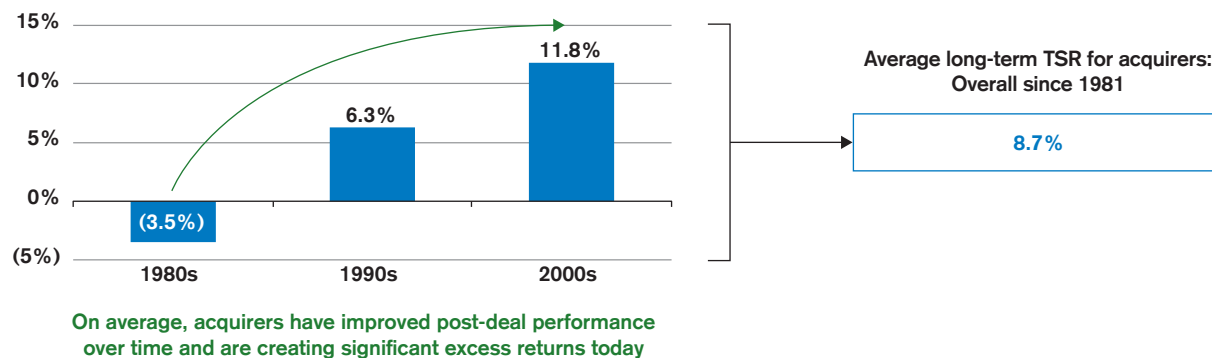
This graph shows us that the *average* TSR performance for acquirers since 1981 is actually quite positive, with acquirers earning an average TSR in *excess of the market* of 8.7%. So, over a nearly four-decade time frame, on average, the *expected value* of M&A for an acquirer is positive. Another key takeaway from Exhibit 4 is that the right side of the curve reveals a large number of successful acquirers that are able to *double* or even *triple* returns to shareholders in excess of the market within the first three years of a deal closing. Thus, successful acquisitions can yield outsized returns and, as the risk-taker in a transaction, the acquirer reaps these benefits.

But it is worth repeating that the data in this graph includes all deals over the entirety of the past three and a half decades. Quite a lot has changed in that time: computing power has vastly increased, a great deal more information transparency, corporate finance and thinking about corporate operating performance has evolved. So is it possible that, since 1981, the expected outcome for acquirers has improved? The data responds with a resounding “yes.” From the same data, we isolated acquirer performance by decades to observe how the payoffs from M&A have evolved over time (Exhibit 5).

Exhibit 5: Long-term total shareholder return of acquirer by time period

TSR: 4 months before announcement to 3 years after closing, relative to MSCI World Index

Average long-term TSR for acquirers: Based on time period since 1981



Acquirers are indeed getting better and better at M&A over time, leading to continually higher expected value creation. This improvement is likely a result of several things. Buyers today have more and better information at their disposal to analyze targets, their products and their markets than ever before. There are now widely accessible financial databases, deep and dynamic company websites, and the ability to gather, synthesize and analyze large amounts of data quickly throughout the due diligence process. And companies that have done well through M&A over the past decades have learned how to do it well – and have institutionalized this thinking, to ensure that their next deal is even better.

To that very point, studies by the City University of London's M&A Research Center have found that the most successful acquirers were those that had developed a standardized approach to target identification and a focused methodology

to reducing post-merger integration costs throughout the due diligence process. This skill, honed through repetition, ensures that serial acquirers outperform less acquisitive firms, and that these serial acquirers become more efficient at discovering and valuing M&A targets.⁸ Practice makes perfect.

Acquirers now have the opportunity to identify, execute, and integrate deals with a higher expected value of success than at any point since 1981. But since the bar is rising, there is also more responsibility on the acquirer to do appropriate and exhaustive operational and strategic due diligence. Acquirers must filter and interpret the right value drivers and metrics in order to benefit from these opportunities to create value through M&A.

Getting the strategic logic of a deal right is vital ... but let's not allow bad M&A math to derail the opportunity.

Making M&A math work for your deals

The recent outperformance of acquisitive companies in the market isn't just a contemporary idea, but rather part of a longer-term trend of M&A being more and more successful in the collective mind of the market. But – returning to a question we posed at the beginning of this paper – why are we not seeing as big of an upswing in M&A activity in the current market as we should expect?

There is clearly a lot of positive momentum behind M&A-driven growth strategies in the past decade or more. Furthermore, the average value accruing to acquirers continues to increase. But

not every deal is inherently value-creating. Each company must still find the right acquisitive fit for its strategy, articulate that and navigate the “price vs. value equation” of a transaction.⁹

This cardinal rule aside, conventional accounting-centric M&A math may undermine an otherwise good strategic idea. We have looked at three key areas that management teams are traditionally focused on in the context of an acquisition: (i) the impact of EPS accretion/dilution, (ii) the accumulation of goodwill and intangibles to the acquirer's balance sheet and (iii) the premium the acquirer will be required to pay.

I. EPS

EPS analysis has conventionally been used as a shortcut to evaluate deals. The extent to which earnings per share (EPS) are enhanced (accretion) or diluted by virtue of an M&A deal serves as one of the first signals investors and management tend to focus on. Although EPS analysis acts as a proxy for comparative cash flows, it cannot be relied on *in isolation of other considerations*.

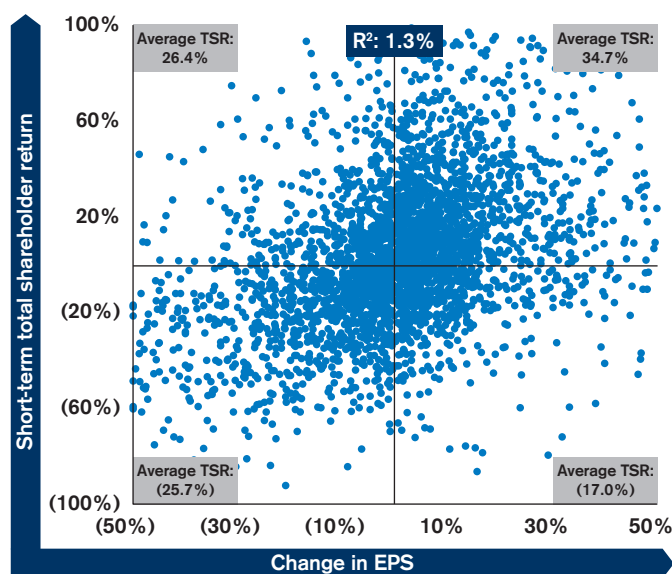
One limitation of EPS analysis is that it does not always fully capture the initial cash expenditure of the acquisition that shows up on the cash flow statement. In addition, an acquirer's EPS will

almost always increase when purchasing a profitable company in an all-cash deal, but that result does not tell us anything about whether the acquirer paid the right price for that asset nor – for that matter – how the market will respond to news of the deal.

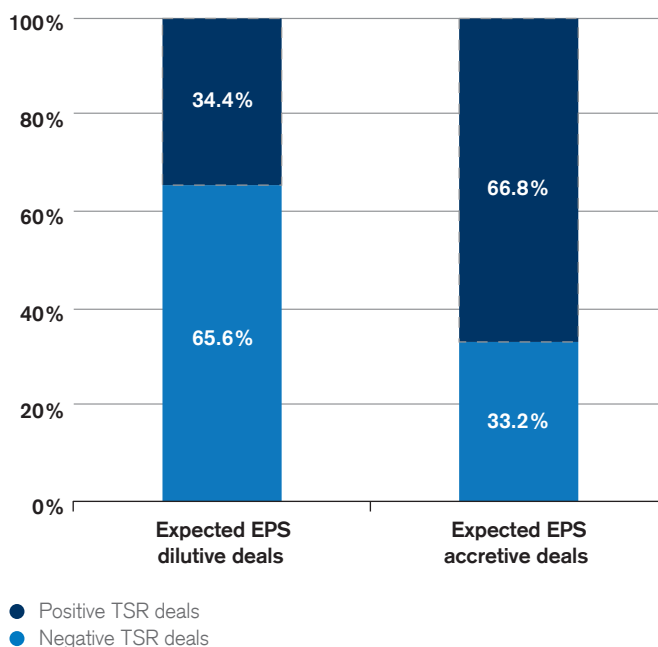
Exhibit 6 evaluates different levels of EPS accretion and dilution versus the observed short-term market reaction to those deals.¹⁰ The graph shows us that EPS accretion/dilution may be relevant to the market reaction around a deal announcement, but not a conclusive tool for management teams to rely on in order to predict how the market is going to move.

Exhibit 6: EPS accretion / dilution vs. short-term total shareholder return (90 days before announcement to 90 days after closing, relative to MSCI World Index)

In the short-term, investors tend to slightly favor EPS accretive deals as shown by higher density in the top right quadrant



What % of accretive and dilutive deals have positive and negative TSR in the short-term?



There is very little correlation between whether a deal is EPS accretive or dilutive and the short-term market reaction to news of it on the data set as a whole. There are a substantial number of EPS dilutive deals that see acquirers' stock prices outperform and conversely there are a substantial number of EPS accretive deals that see acquirers' stock prices underperform.

However, we do see a general theme that EPS accretive deals outperform the market twice as often as they underperform, and the opposite is true of dilutive deals. Also, EPS accretive deals earn about a 9% higher TSR than their EPS dilutive counterparts. On balance, EPS accretive deals appear to be somewhat more preferred by the market but – as noted above – it is not a definitive metric.

How does EPS impact longer-term market performance of M&A? If it really were true that EPS accretion/dilution were the primary driver of long-term TSR then we would expect an overwhelming aggregation of points in the bottom left and top right quadrants when we switch the focus from short-term TSR to long-term TSR in Exhibit 7. But looking at this data for

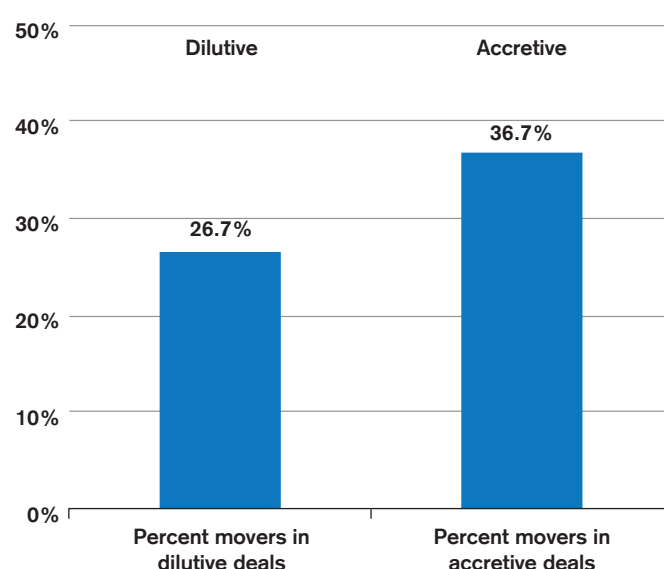
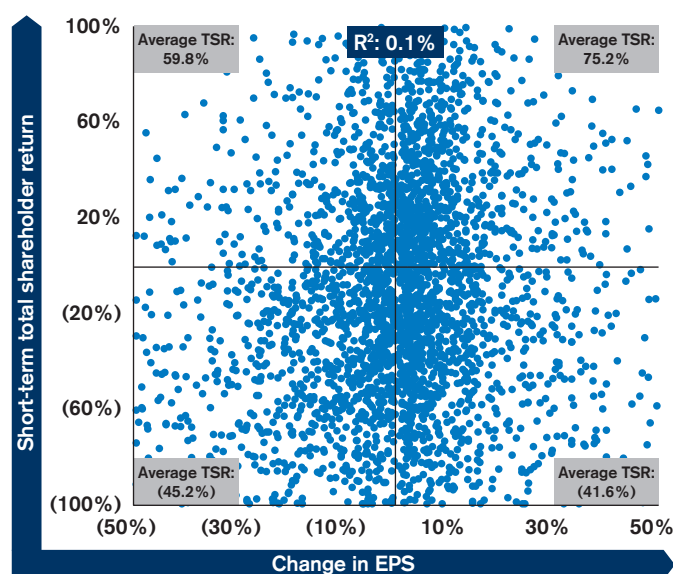
longer-term¹¹ share price performance against the same EPS accretion/dilution universe, we see a visibly greater vertical dispersion. Nearly 27% of dilutive deals, and nearly 37% of accretive deals, moved from negative TSR in the short-term to positive TSR in the long-term. Similar movements occurred from positive in the short-term to negative in the long-term.

Exhibit 7: EPS accretion / dilution vs. long-term total shareholder return

TSR: 4 months before announcement to 3 years after closing, relative to MSCI World Index

As time progresses, EPS accretion or dilution does not solely dictate the long-term success of a deal

% of companies with negative TSR in the short-term that moved to positive in the long-term



This analysis suggests that, even if an announcement of EPS accretion is well-received by the market in the short-term, that is no guarantee for the market's assessment of the longer-term success of that deal. EPS accretion/dilution analysis may be a helpful shorthand approach up front; it does not guarantee deal

success or failure in the long run. Management should consider the EPS implications of a deal – but a company's ability to articulate a strategy and to execute on a long-term vision plays a vital role in a deal's success. EPS analysis is thus useful – but not determinative.

II. Goodwill and intangibles

Our second piece of conventional M&A math that we think needs revisiting is the notion of goodwill and other intangibles and how to think about that as an acquirer. As more and more companies think about themselves and their peers in terms of returns on capital,¹² the introduction of large amounts of goodwill on the balance sheet may serve as a deterrent to doing deals. Mathematically, won't the simple act of making an acquisition and adding goodwill lower any company's operational returns on capital? We think the simple answer to this question is "no".

Goodwill is often associated with the premium that an acquirer had to pay for the target's assets, and can represent a fairly large amount of a firm's assets. On average, goodwill accounts for ~32% of the invested capital for all U.S. and European firms combined.¹³ As a non-operating asset, goodwill typically carries a negative connotation. When a firm is forced by accounting standards to place large amounts of goodwill onto its balance sheet, that act may be accompanied by negative press or sell-side commentary, and can thus be associated with adverse market sentiment.

But is goodwill actually *bad*? Not necessarily.

If total goodwill created from an acquisition is defined as the purchase price minus the book equity (including asset write-

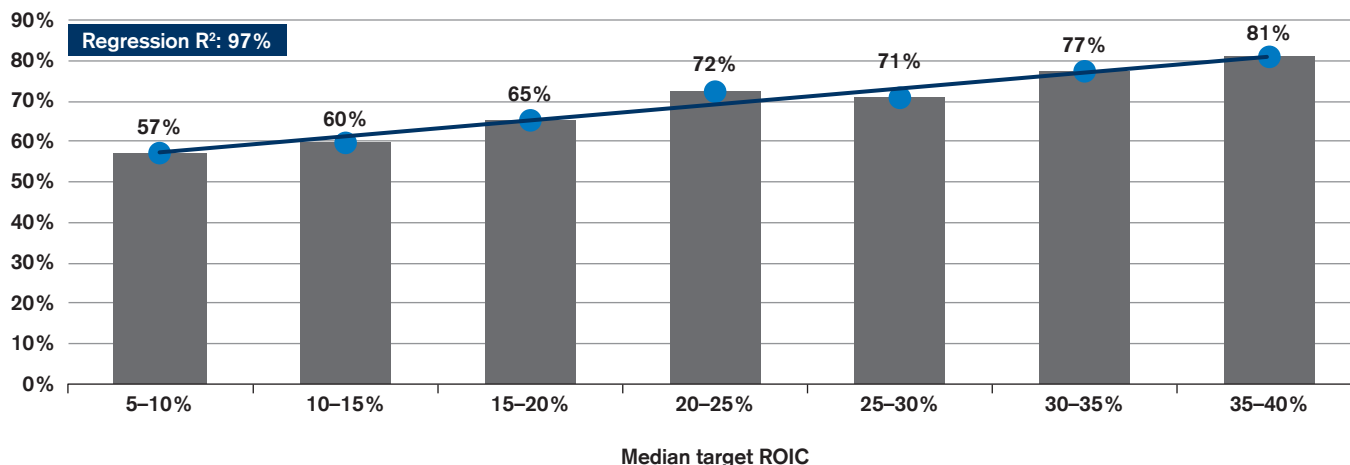
ups), we can break that down into two components and evaluate them separately. The first component represents the premium an acquirer pays in excess of the target's trading value at the time of the offer. The second portion represents the difference between a target's trading value and its book equity before the offer. In fact, we have found that this second component of the total goodwill constitutes about ~60% of the total created through an acquisition.

Assuming efficient markets, a target's market value should be an accurate representation of what it is worth. Therefore, any goodwill created from buying a company at market value should be ignored by both management teams who are considering a purchase, and investors who are evaluating a deal. In fact, this part of goodwill that is added to a balance sheet after an acquisition is really just a reflection of how profitable the target is.

Exhibit 8 illustrates how this manifests itself in real markets and with real data on real companies – there is almost a *perfect* correlation between the profitability (ROIC) of target firms and the amount of goodwill and intangibles created in a transaction at fair value.¹⁴ Goodwill and intangibles are actually a leading indicator of buying high quality businesses ... those that have managed to grow and earn excess returns well above their cost of capital.

Exhibit 8: Goodwill and intangibles created from purchasing a firm at fair value vs. target ROIC

Median goodwill and intangibles% of target enterprise value



Because this goodwill reflects the operating prowess of the business, we believe that it should produce little to no reaction by the market. Exhibit 9 verifies this idea that markets largely ignore the amount of this type of goodwill created, as we see *no TSR*

correlation: larger levels of goodwill have no positive or negative impact on either the average or median TSR of an acquirer's post-deal announcement. It is simply ignored by the market.

Exhibit 9: Goodwill created from purchasing a firm at fair value vs. total shareholder returns

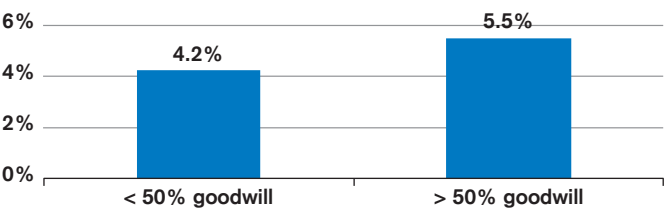
TSR: 4 months before announcement to 3 years after closing, relative to MSCI World Index

Long-term total shareholder returns

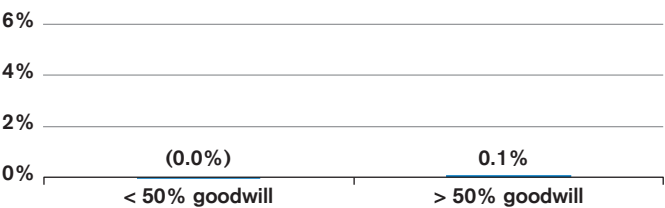


Now that we have identified the larger portion of goodwill, we shift gears to the remaining goodwill that is generated in an

Average short-term TSR



Median short-term TSR



acquisition: the amount attributed to the premium.

III. Premia paid

The third and final piece of conventional M&A math that we wrestle with is the premium paid for an acquired public company. In most M&A transactions, the acquirer has to pay a premium – a value on top of the market price of the stock – in order to convince the board to recommend a sale to its shareholders. The premium paid can be small or substantial, change over time,¹⁵ and vary with leverage and payment consideration.

Although premia have been trending down since the economic upswing of 2010,¹⁶ the amount of required premia on top of robust trading multiples today does give many companies pause ... can I justifiably pay a control premium on top of a fully-valued company? Won't the market punish me for doing so? We think the answer to this question may be surprising. Conventional thinking could lead you to believe that paying lower premia, and setting upper limits on the premia paid to market valuations is the prudent approach in evaluating M&A. As an extension

of this logic, companies that overpay for acquisitions should underperform, right?

In reality, the market seems quite relaxed about premia. From a short-term perspective, we have seen that the old M&A arbitrage trade has disappeared in the past few years as the average short-term share price reaction for acquirers around the announcement of a deal has meaningfully increased.¹⁷

What about share price performance over a longer period, and the reactions to long-term value creation after a deal? The graphs in Exhibit 10 show the relationship between the premium acquirers pay and long-term value creation. The scatter plot on the left side of Exhibit 10 establishes that there is virtually no correlation between premia and long-term TSR.

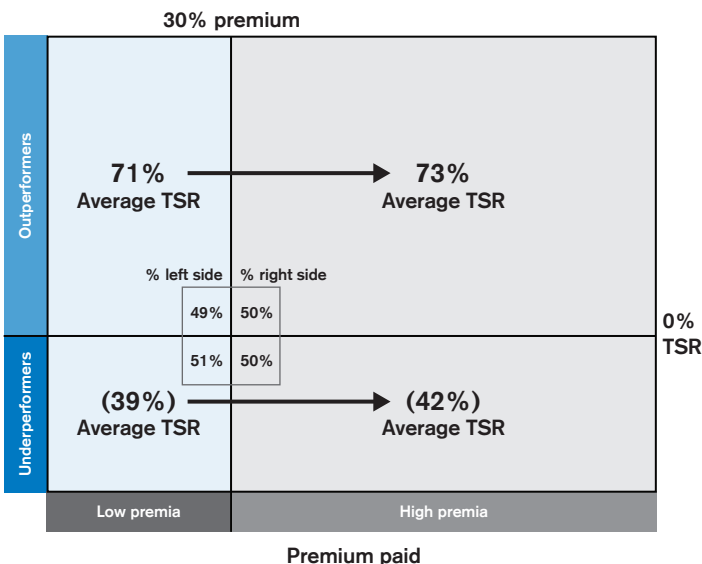
Exhibit 10: Long-term total shareholder return vs. premium paid

TSR: 4 months before announcement to 3 years after closing, relative to MSCI World Index

Long-term total shareholder return



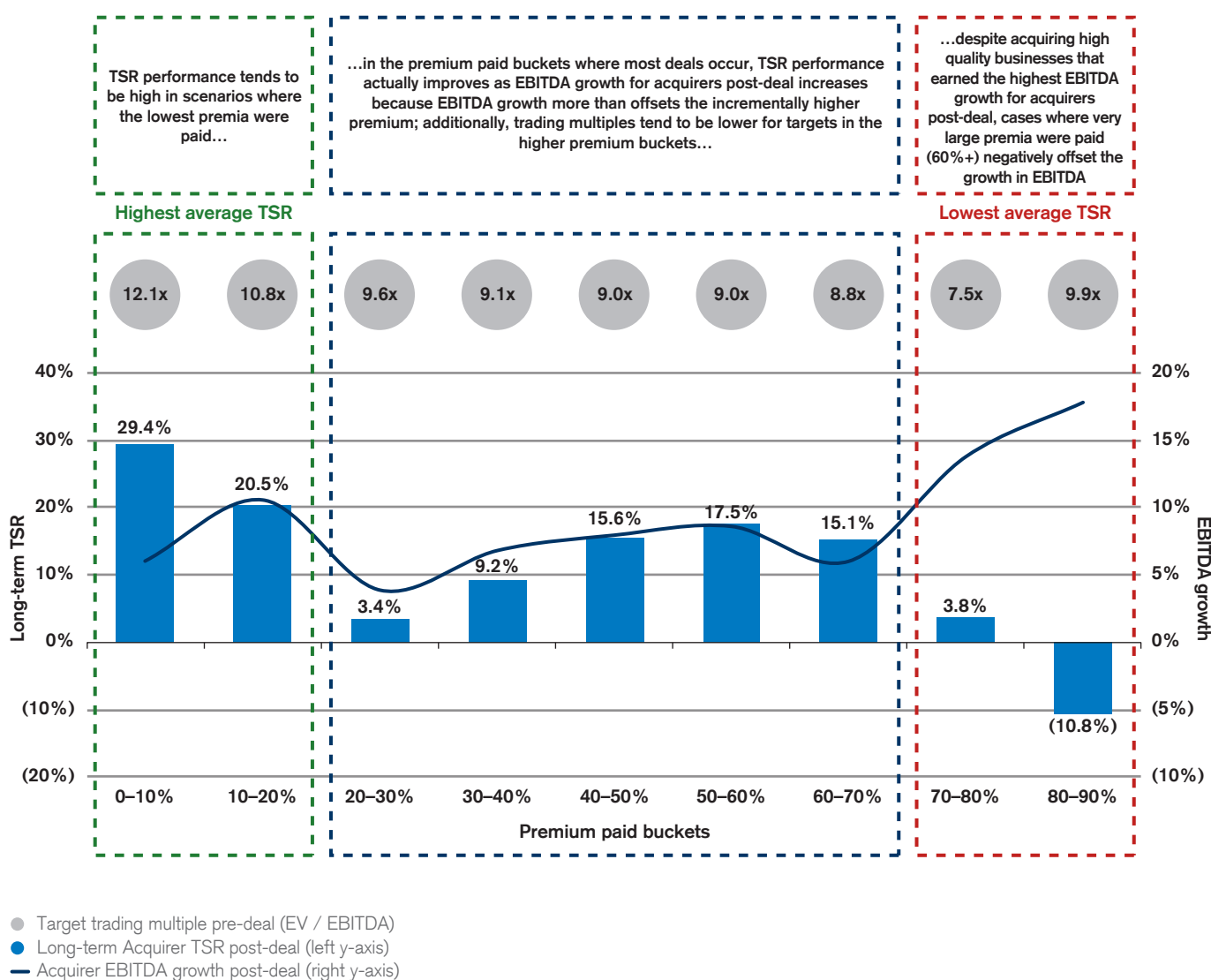
Long-term total shareholder return



Even though there is no correlation between premia and long-term TSR, make no mistake, premia do matter; they do impact long-term TSR performance. However, the premium alone does not determine the success of a deal, as other factors such as operational performance and target selection also play important roles. Let's look at the market response to deals at a variety of

premia paid in more detail. In Exhibit 11, we bucket each public-to-public deal since 2000 in our dataset by the premium paid in increments of 10%, and show the trading multiple of the targets, post-deal EBITDA growth for acquirers, as well as the average TSR across each bucket of premium paid.

Exhibit 11: Premium analysis – Does the level of premium paid drive performance post-deal?



Apart from the extreme (premium above 80%), across all premium categories since 2000, the average long-term TSR is positive. The results of the acquirer's TSR at the lowest premium make intuitive sense; the market clearly favors deals where an asset is acquired for little to no control premium. At the book ends of the exhibit – the highest and lowest premium – we see that there is also an intuitive relationship since the TSR performance declines as premium rise.

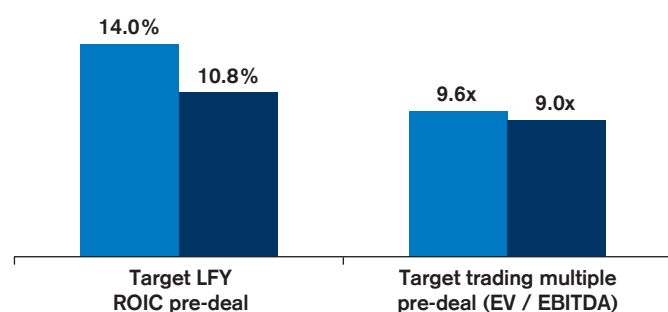
The most intriguing results, however, are in the 20–60% premium range where most of the transactions occur and TSR performance rises alongside with the premium paid. Since 2000, most deals have been done with premium in the 20–30% range and it is in this cohort where TSRs tick downwards to the positive single digits. One explanation for this is that since more deals occur in the 20–30% premium range, competition for assets is greatest and the increased demand nudges prices upward from where they might otherwise be. There may also be a threshold or *hurdle price* that a potential buyer must reach to bring the seller to the negotiating table. This control premium may not be fundamentally supported by expected synergies, and the market appears to acknowledge that.

As premium rise beyond 30%, relative TSR actually *improves*. The explanation for this relates back to one of our core concepts – value creation is driven by the ability to improve operating performance. M&A value for acquirers is often achieved through cost synergies and target firms acquired at higher premium may be assets that have recently underperformed operationally. Acquirers hunting in this space recognize that depressed valuations may not necessarily reflect long-term intrinsic value. Thus, buyers in this space can take advantage of potential turn-around opportunities and purchase a business with considerable upside.

Exhibit 12 proves this second explanation empirically. When comparing the targets in the 20–30% premium range to the targets in the 50–60% premium range, targets demanding a 50–60% premium generally have lower ROIC profiles and lower trading multiples pre-acquisition, indicating that these assets could be either in distress or strategic turn-around candidates. Also in Exhibit 12, the post-acquisition performance of acquirers appears to support that purchasing companies in the 50–60% range do better on both growth and margin expansion¹⁸ compared to those in the 20–30% range.

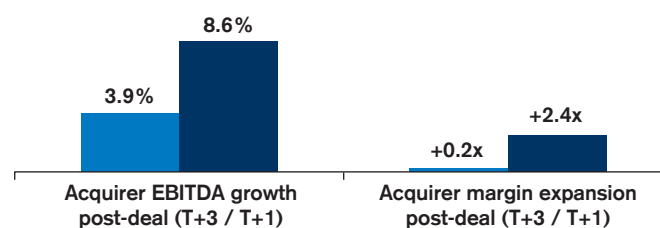
Exhibit 12: Comparing operating metrics between buckets of premium paid

Pre-announcement data



- 20–30% premium
- 50–60% premium

Post-announcement performance



These numbers reaffirm our belief in the importance of the price vs. value equation, where the incentive to purchase should be based on the underlying strategic and operational value of the asset being acquired. The core takeaway here is that, by itself, the premium paid does not necessarily define or predict whether the market will favor a deal or not. Premiums do matter,

but identifying the right target and executing the integration process will drive long-term share price outperformance. The key is finding the right asset, the right strategic fit, and making a compelling case for the acquisition, while not being encumbered by “traditional” thinking around M&A math. The price matters far more than the premium.

Conclusion

M&A remains a strong catalyst to generate and retain a competitive advantage for some of the most successful firms across industries. When two corporates combine forces through M&A, they create a value pool through synergies, improved efficiencies, cross-institutional learning, and increased market power that contributes to the overall economy. Since 1981, the value proposition of M&A has continued to improve; so it is essential that firms seeking to create value recognize the importance of M&A in their strategies.

The ability to succeed in M&A hinges upon numerous factors. As information transparency has improved and companies benefit from experience, acquirers have enhanced their success rate and the opportunities continue to grow. Information transparency also carries with it the need to appropriately filter the information to identify the most relevant value drivers – and to appropriately interpret some of the conventional shorthand approaches to evaluating M&A.

In this paper, we show that current market conditions remain very supportive and rewarding of M&A. The somewhat lower pace of M&A activity in the market led us to wonder why – and to revisit a number of themes that have repeatedly raised their heads in conversations we have with our corporate clients.

We looked at three critical analyses in EPS, goodwill and premia to show how each relates to value creation in M&A:

- **EPS accretion/dilution** is useful in managing investor expectations, but long-term success in M&A may be independent of EPS implications.
- **Goodwill and intangibles** are largely a function of how profitable the target business is, and has no correlation to deal success or failure in the market's mind.
- **Premia** are one important element of value creation in any transaction but do not solely drive the success of a deal, suggesting the importance of astute target selection and the ability to achieve operational improvement post-deal.

There is no magic formula for M&A success. Each deal is unique. However, our work suggests that our corporate clients should not have too narrow a focus on conventional metrics to evaluate deals. Short-hand metrics of EPS accretion/dilution, goodwill and premia paid are helpful, but not determinative of M&A success. Rather, we believe that our corporate clients should evaluate deals with fresh thinking and with firm notions of the strategic context and rationale of a given transaction. That is the path to strategic success.

End notes

- 1 Source: Datastream, Credit Suisse IDC – December 13, 2017.
- 2 Source: Authers, John. "Authers' Note: M&A MIA", Financial Times, December 19, 2017.
- 3 This figure has been adopted and updated from our previous **Credit Suisse Corporate Insights** series "Tying the knot: M&A as a path to value creation". Universe consists of companies in the U.S., Canada, and Developed Europe across all sectors with market capitalization greater than \$200mm (3,462 companies). Acquirers are defined as the companies with cumulative M&A spend as a percentage of cumulative cash flow between 2011 and 2017 in the top 25% of universe, and non-acquirers are defined as companies in the bottom 25% of M&A spend as a percentage of cumulative cash flow. Sourced from Credit Suisse's HOLT framework and global database.
- 4 Sourced from EY's "Global Capital Confidence Barometer: How can M&A deal with today's demands while activating your digital tomorrow?" October 2017, 17th edition. ey.com/ccb.
- 5 Source: Lewis, Alan, and Dan McKone. "So Many M&A Deals Fail Because Companies Overlook This Simple Strategy." Harvard Business Review, Mergers & Acquisitions, May 10th, 2016. This study, along with various others in the finance industry, mention value destruction due to M&A transactions. Many of these studies have wide variations in methodology and lack a consensus view of how to measure value creation in M&A.
- 6 Cumulative average abnormal returns (CAARs) are calculated as the 80 day weighted average return centralized around the announcement date (T – 40 days to T + 40 days), and consists of only the public-to-public whole-company transactions since 1981 within the entire dataset of 5,613 transactions from the U.S., Canada, and Developed Europe. Sourced from Thomson Reuters Datastream® via Cass Business School's M&A Research Center (MARC). MARC has found in previous research that 40 days before & after the announcement of a deal reasonably incorporates near-term investor reaction unbiased of potential rumors related to a transaction.
- 7 The dataset consists of transactions from companies within the U.S., Canada, and Developed Europe. The company must have at least \$200mm in enterprise value and the deal value must account for at least 10% of the acquirer's enterprise value. The data includes all deals with these thresholds with reputable data dating back to 1981 (5,613 transactions among 3,475 companies). Long-term TSR is calculated as the change in shareholder return from 4 months before the announcement of a deal to 3 years after the deal closing. All TSR data in this study is shown relative to the MSCI World Index, indicating returns in excess of the market. Sourced from FactSet and Thomson Reuters Datastream® via Cass Business School's M&A Research Center (MARC).
- 8 Sourced from Cass Business School's M&A Research Center (MARC). The articles referenced, "Successful Dealmaking", and "Deal closure is the starting point not the end point" are derived from MARC's Working Paper Series from January 2014 and February 2016, respectively.
- 9 To avoid value destruction, the price paid for an asset should not exceed the value of that asset to its new owner – or the perception of that value by the market.
- 10 EPS accretion/dilution is defined as the relative change in FY2 EPS forecasts and is calculated as (90 days after the deal close / 90 days before the deal close). Short-term TSR is calculated as the change in shareholder return from 90 days prior to the deal announcement to 90 days after the deal closing. All TSR data in this study is shown relative to the MSCI World Index, indicating returns in excess of the market. Sourced from FactSet consensus estimates.
- 11 Please refer to endnote 7.
- 12 Source: Mauboussin, Michael J and Callahan, Dan. "Calculating Return on Invested Capital: How to determine ROIC and Address Common Issues". Credit Suisse. Global Financial Strategies. June 2014.
- 13 Universe consists of companies in the U.S., Canada, and Developed Europe across all sectors with market cap greater than \$200mm (3,462 companies). Goodwill is defined as goodwill and non-operating intangibles. Invested capital includes working capital, inflation-adjusted gross plant, capitalized R&D, capitalized operating leases, and goodwill and non-operating intangibles. Sourced from Credit Suisse's HOLT framework and global database.
- 14 ROIC is calculated as [(Post-tax EBIT + D&A) / (Total assets + accumulated depreciation – non-interest bearing current liabilities – goodwill and intangibles)]. Goodwill from purchase at fair value is calculated as target enterprise value less the target book equity. Sourced from Thomson Reuters Datastream® via Cass Business School's M&A Research Center (MARC).
- 15 Premia are defined as [offer price / target stock price four weeks prior to deal announcement]. Stock price is taken four weeks prior to the announcement to avoid bias and focus on unaffected market prices. There are alternative methods of assessing premia, including the stock price 1 day, 5 days and 16 days prior to announcement date. Our approach is academically accepted, as derived from Cass Business School studies such as "The Economic Impact of M&A: Implications for UK firms". Premia were observed over time and calculated as the annual rolling average premium for each deal in the given year since year 2000. Sourced from Thomson Reuters Datastream® via Cass Business School's M&A Research Center (MARC).
- 16 Premia were at a peak in 2000 but have been trending down in recent years as the premium paid on equity tends to be countercyclical in relation to market peaks and troughs. There is a strong correlation between the peaks of high premia and recessionary periods in North America and Europe.
- 17 In 2015 and 2016 acquirers have seen their share price appreciate by nearly 4% on average immediately following a deal announcement versus the ~1% price bump they experienced on average during the decade prior. Sourced from Credit Suisse's HOLT framework and global database.
- 18 EBITDA growth and EBITDA margin expansion are defined as (T+3/T+1) performance post-deal for acquirers. Sourced from Thomson Reuters Datastream® via Cass Business School's M&A Research Center (MARC).

Authors and acknowledgements

Authors from Credit Suisse Investment Banking and Capital Markets

Rick Faery, Managing Director
Eli Muis, Director
Andy Canovali, Associate
Austin Rutherford, Analyst
Marc Franco, Analyst

Co-Authors from the Cass Business School, City, University of London

Professor Scott Moeller, Director of M&A Research Center (MARC) and Professor in the Practice of Finance
Dr. Valeriya Vitkova, Research Fellow, M&A Research Center (MARC)
Jiayi Tang, Research Assistant, M&A Research Center (MARC)
Nhu Doan, Research Assistant, M&A Research Center (MARC)

With thanks for their time, contributions and valuable insights

Chris Morck, Vice President, HOLT Equities, Credit Suisse Global Markets
Alex Ciejka, Associate, Credit Suisse Investment Banking and Capital Markets

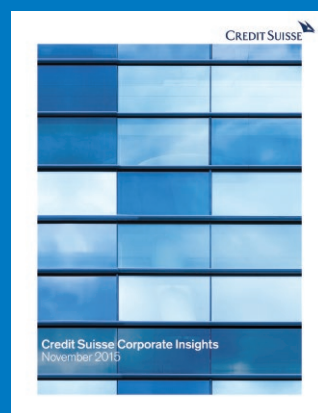
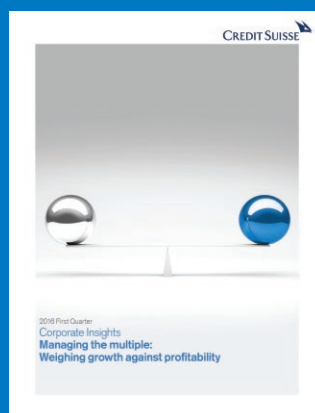
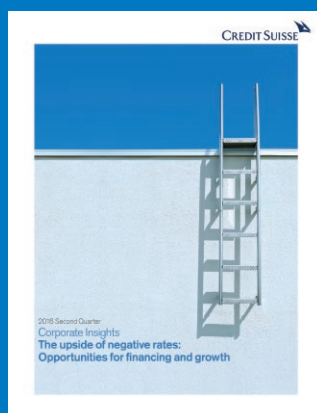
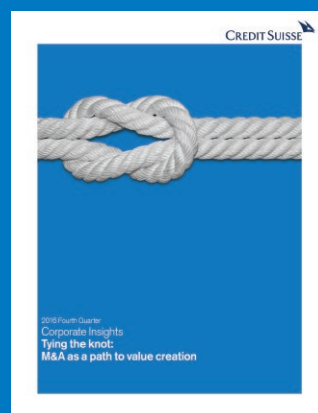
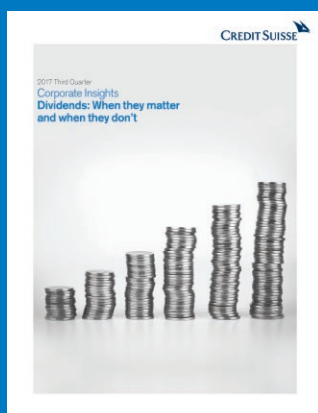
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CREDIT SUISSE SECURITIES (USA) LLC

Eleven Madison Avenue

New York, NY 10010

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