In this paper we draw on work in behavioral learning theory and risk taking to examine whether firms desperate for growth overpay for acquisitions, and we develop a theory of desperation in the context of growth. We suggest two key drivers of such desperation: (1) when a firm’s organic growth is low, paying handsomely for acquisitions may be one of the few options for growth, and (2) when a firm becomes dependent on acquisitions for continuing growth, it is vulnerable to overpaying for acquisitions. Although pressures to grow via acquisition can be intense, we also test whether the benefits of acquisition experience—from both acquirers and their advisors—help to prevent overpayment caused by desperation. We test these ideas in a sample of firms in the banking industry between 1994 and 2005. Consistent with this theory of desperation, our results showed that firms desperate for growth are more likely to pay high acquisition premiums. Our findings on the moderating role of acquisition experience showed that advisors’ acquisition experience is more helpful than acquirers’ own acquisition experience in preventing desperate acquirers from overpaying for a target.

Growth remains one of the most important performance metrics by which a firm is evaluated (Penrose, 1959; Greve, 2008). Because financial markets and investors tend to reward the stock prices of fast-growing firms, managers experience significant pressure from shareholders and financial analysts to pursue firm growth. Managers also have strong incentives to grow their firms because their compensation is often tied to firm size (e.g., Tosi et al., 2000). Hence when firms are not achieving the level of growth they desire, they are subject to particularly intense growth pressures. Managers of these firms may become desperate to grow and become willing to take on high-risk strategies to stimulate growth (Greve, 2008).

Firm growth plays a key role in explaining acquisition behavior, including the magnitude of acquisition premiums that acquirers are willing to pay. Although qualitative research has identified long-term growth as an important acquisition motive (Schweizer, 2005), the influence of firm growth on acquisition behavior has not received much scholarly attention. Penrose (1959) posited that limits to growth can significantly affect firm behavior. While firms may prefer to grow organically through an increase in demand for their existing products and services, if organic growth is not forthcoming, firms often turn to other growth strategies like acquisitions as they search for alternative means for achieving the level of growth that their stakeholders demand (Varaiya, Kerin, and Weeks, 1987). Higgins and Rodriguez (2006) showed that pharmaceutical firms experiencing decline in their research pipelines are more likely to engage in acquisitions to boost growth. Relatedly, the practitioner press has frequently reported that low organic growth triggers acquisition activity (Harding and Rovit, 2004; Laurie, Doz, and Sheer, 2006). The spate of acquisitions announced in the pharmaceutical industry in 2008 was largely driven by the desire to seek new opportunities for growth to make up for a declining outlook in established positions.
Acquisition Premiums

(e.g., Roche and Genentech; Eli Lilly and ImClone) (Saul and Pollack, 2008).

As acquiring firms pay higher acquisition premiums, however, it becomes increasingly more difficult to create sufficient value (Hunter and Jagtiani, 2003). Hence paying a high premium increases the risk of an acquisition. Because acquirers naturally want to pay as small a premium as possible (Haunschild, 1994; Beckman and Haunschild, 2002), the magnitude of the premium an acquirer is willing to pay for an acquisition reflects the strength of its desire to acquire that target. In prior work, it has generally been argued that firms pay more than the market value for a target because of potential synergies (e.g., Sirower, 1997) or the hubris of chief executive officers (CEOs) (Hayward and Hambrick, 1997). If we consider the strength of an acquirer’s desire to acquire a target, however, its desperation for growth—which can be triggered by low organic growth or high acquisition dependence—can also affect the price that it may be willing to pay for an acquisition.

Firms generally grow through two standard methods—organically by developing growth from internal activities or through acquisition by buying growth from outside the firm—and desperation for growth may arise from either of these approaches. Hence a lack of organic growth and a dependence on acquisitions for growth are the two major drivers of desperation. There are two conditions under which firms may become desperate to grow and become willing to take on greater risk—such as paying high acquisition premiums—if they are presented with an opportunity to grow. The first condition occurs when a firm’s organic growth is significantly lower than either (a) its peer firms or (b) its own historical organic growth. The second condition occurs when a firm’s dependence on acquisitions for growth is significantly higher than either (a) its peer firms or (b) its own historical acquisition dependence. These firms are subject to stronger growth pressures and consequently will be likely to pay high acquisition premiums in an attempt to stimulate growth.

Managers of firms that are desperate to grow are vulnerable to overpaying for acquisitions, but they are not without resources that might moderate the risks that come from such weakness. One resource is the potentially mitigating influence of acquisition experience. Such experience may take two forms: that of a focal firm that has been through past acquisitions and can draw on that experience and that which comes via guidance from experienced acquisition advisors. Building on past research that has highlighted the role of acquisition experience (e.g., Halebian and Finkelstein, 1999; Hayward, 2002), we propose that acquisition experience might constrain acquisition premiums even in the face of conditions that propel a firm toward acquisition activity. To the extent that such experience helps firms better manage the acquisition process to avoid overpaying for target companies, both firms’ own experience and their acquisition advisors’ experience may reduce the impact on acquisition premiums of desperation caused by growth-based constraints.
We developed and tested our hypotheses on growth-related desperation and the mitigating influence of acquisition experience in the context of the U.S. banking industry from 1994 to 2005. This time period directly follows a series of deregulatory actions that significantly relaxed restrictions on the geographic and business expansion of banks. As banks rushed to capitalize on new growth opportunities opened up by deregulation, the banking industry experienced substantial consolidation (Neuman, Davis, and Mizruchi, 2008; Davis, 2009; Palmer and Maher, 2010). Acquisition was an important vehicle for growth for many banks during this period, but there was also substantial variation in the level of reliance on acquisitions for growth among banks. Hence the banking industry during this time period presents a particularly fertile ground to assess desperation to grow through acquisition.

DESPERATION TO GROWTH THROUGH ACQUISITIONS

Effect of Low Relative Organic Growth

An acquisition is often the most expeditious way a firm can capitalize on growth opportunities by expanding into new geographic or product markets (Vermeulen and Barkema, 2001); thus low organic growth can stimulate the acquisition activity of firms that are in search of quick growth. If a firm can successfully redeploy its assets to enter new markets, or recombine existing assets with the complementary assets of an acquired firm, it may be able to reinvigorate firm growth (Anand and Singh, 1997; Capron, Dussauge, and Mitchell, 1998). But although acquisitions can be an effective growth vehicle, they are inherently risky, as they are associated with significant uncertainty and a high potential for financial loss (Ravenscraft and Scherer, 1987). Consistent with this notion, prior studies indicate that acquisitions frequently fail to create value for shareholders (King et al., 2004). Further, paying a high premium makes an acquisition even riskier because the acquiring firm must extract value sufficient to offset the high price paid for the acquisition (Haunschild, 1994), and high acquisition premiums are frequently cited as one of the leading causes of acquisition failure (Hitt, Harrison, and Ireland, 2001).

When firms experience healthy organic growth, managers typically are satisfied with their current growth levels and hence are likely to avoid risky strategic actions (March and Shapira, 1987), such as paying an excessive premium for an acquisition target. Conversely, when a firm experiences poor growth, managers of the firm are subject to strong growth pressure. Low firm growth negatively affects the market value of a firm, often provoking shareholders to pressure managers to adopt aggressive growth-oriented strategies. Further, managers who are failing to meet growth expectations will run the risk of compromising their compensation and may even put their career in jeopardy (Warner, Watts, and Wruck, 1988). Hence managers of firms faced with poor organic growth may become desperate to grow via acquisition and become more willing to undertake high-risk strategies to boost their growth (Greve, 2008). Consistent
with this argument, prior research has provided ample evidence that managers take on higher risk when their current course of action does not provide the desired performance outcomes (e.g., Kahneman and Tversky, 1979; Bromiley, 1991; Wiseman and Bromiley, 1996). Thus firms plagued by low organic growth may be predisposed toward paying higher prices for their targets than would other potential acquirers not suffering from limited growth prospects.

Managers become desperate for growth when they are dissatisfied with their current levels of growth; hence desperation emerges based on how firms evaluate their growth. In line with prior work on firm performance, relative performance has often been shown to be strongly motivational for firm behavior (Greve, 1998). For instance, firms often compare their performance to similar others, which is referred to as social comparison (Festinger, 1954). Such social comparisons allow firms to interpret the adequacy of their own performance and to set their own standard for an appropriate level of performance based on the performance of referent firms (Greve, 2008). In terms of their growth, firms will set their own growth goals relative to the growth levels of others in their referent groups (Elsbach and Kramer, 1996; Denrell, 2003). Because firms cannot collect and evaluate all available external information, they tend to select similar firms, such as their peers in the same industry, as a comparison group (Lant and Baum, 1995). Through a process of mutual enactment, these firms reinforce shared beliefs, look toward their similar others for sensemaking, and rely on information from within the referent group when making decisions (Porac, Wade, and Pollock, 1999).

Desperation is triggered when managers perceive their firm’s current level of organic growth to be much slower than the other firms in the referent group, which in turn influences managers’ risk preferences and behaviors. Managers who are desperate for growth, because of their firms’ very low organic growth compared with their peer firms, will become particularly motivated to seize growth opportunities. Such firms are more likely to take on high-risk strategies—such as paying a much higher price than the market value for a target or what other firms paid for a similar target—in an attempt to boost their growth. Consequently, they will be more willing to pay significantly higher acquisition premiums than firms that are not desperate, even if paying a high acquisition premium exposes their firms to higher risk and uncertainty. In contrast, firms with strong organic growth relative to their peer firms are under less severe growth pressure and hence are less likely to overpay for a target. Thus the magnitude of the acquisition premium will increase as a firm’s organic growth relative to its peer firms decreases, but the relationship between a firm’s relative organic growth and acquisition premiums is not likely to follow a simple negative linear pattern.

As the negative gap between a firm’s organic growth and the organic growth of its peer firms significantly widens, managers become increasingly desperate to achieve the level of growth they desire. They will become extremely mindful of their dire situation and dramatically increase their focus on the
growth problem they are facing (Ocasio, 1997; Adner and Levinthal, 2001). Because managers tend to take on more risk when faced with potential losses, the rate at which risky actions are taken to avoid or reduce losses increases as performance decreases (Kahneman and Tversky, 1979). Thus once managers become desperate, they may act aggressively to remedy their problem quickly, often taking on extraordinarily high-risk strategies and actions. Hence we expect that the acquisition premiums that acquirers are willing to pay in an acquisition will increase at an increasing rate to the extent enabled by a firm’s financial resources as the negative gap between their organic growth and the organic growth of their peer firms increases. Taken together, these arguments lead to our first hypothesis:

**Hypothesis 1a:** An acquirer will pay higher acquisition premiums as its organic growth relative to its peer firms decreases. As the acquirer’s organic growth relative to its peer firms decreases, the acquisition premium will increase at an increasing rate.

Firms have also been shown to use historical comparisons in evaluating their current performance. A firm’s past performance record shows how well it has performed in the past and, given the uncertainty of what a firm may achieve, could be used as the standard for how it should perform in the future; thus a firm’s historical performance level acts as an anchor by which its current performance level is evaluated (Greve, 2003).

Firms frequently rely on historical comparisons because data obtained internally within the organization are easily accessible, and managers more readily understand internal than external information (Menon and Pfeffer, 2003). Hence historical aspirations are particularly useful when external information is difficult to access or is perceived to be unreliable, and firms will compare their current level of organic growth with their historical organic growth. As the gap between a firm’s current and past organic growth levels becomes more negative, its managers will be subject to increasing growth pressure from the stakeholders of the firm, who demand a return to the previous level of growth. As growth pressures increase, these managers will become increasingly desperate for growth and will become more willing to pay high premiums for acquisitions. Thus the amount of acquisition premiums that a firm is willing to pay will increase as a firm’s organic growth relative to its past organic growth decreases.

As with social comparisons, we expect that historical comparisons will lead firms to take increasingly higher risks as organic growth decreases (Greve, 2008). Hence we predict that the acquisition premium will increase at an increasing rate as the negative gap between a firm’s current organic growth relative to its past level of organic growth increases, which leads to the following hypothesis:

**Hypothesis 1b:** An acquirer will pay higher acquisition premiums as its organic growth relative to its past organic growth decreases. As the acquirer’s organic growth relative to its past organic growth decreases, the acquisition premium will increase at an increasing rate.
Effect of Relative Dependence on Acquisitions for Growth

A firm’s dependence on acquisitions as a growth strategy is the second major source of desperation that may influence the price managers are willing to pay for an acquisition. It is well established that managers tend to rely on the strategies they used in the recent past, as their strategic options are limited by the firm’s resources and skills (Wernerfelt, 1984). Although a firm may expand its skills over time, in the short run, it is restricted by its current skill set, which will shape the future strategic options that its management is capable of rendering (Penrose, 1959). Further, changing a firm’s existing strategic approach is often perceived as costly because a new set of activities must be learned and coordinated (Greve, 2003). Managers have also been shown to depend heavily on recent strategies to reduce their cognitive burdens and simplify information processing (Steiner and Rain, 1989; Amburgey and Miner, 1992; Hogarth and Einhorn, 1992). The dependence on recent strategic actions is further reinforced if the previous strategic actions resulted in positive outcomes (Haleblian, Kim, and Rajagopalan, 2006). Hence strategic dependence tips a firm toward recently used approaches over other possible alternatives, thereby locking it into the current set of strategic actions. By logical extension, firms that have grown extensively through acquisition in the recent past may develop skills and capabilities to grow via acquisition, which can lead them to become increasingly dependent on acquisitions as their primary means to grow.

The tendency to persist with acquisitions may affect a firm’s growth pattern. Because growth is an important strategic imperative for virtually all firms, managers are likely to be motivated to continue to use the strategies that helped them grow in the recent past. Managers of the firms that have achieved significant recent growth through acquisition relative to internal development will gain confidence that acquisition is the right growth strategy (Greve, 2008). Thus firms that have grown by heavily relying on acquisitions will come to rely on additional acquisitions for continued growth. While such dependence on acquisitions may provide the level of growth that managers desire, it may limit their future growth options and make them desperate to grow through acquisition as growth pressures increase.

As firms become dependent on acquisitions, they might lose capabilities and confidence in other growth strategies (Levitt and March, 1988; Levinthal and March, 1993). Acquisitions require significant managerial attention, particularly during the post-acquisition integration process (Jemison and Sitkin, 1986). Hence firms that have grown substantially through acquisition tend to allocate considerable managerial attention and resources to acquisition processes, including post-acquisition integration. These firms often have to change core organizational features and structures to accommodate the target (Barkema and Schijven, 2008b). Thus it is possible that firms that have grown substantially through acquisitions may lose or undermine their ability to grow through other means and consequently may need to continue to depend on acquisitions for their future growth. Firms heavily dependent...
on acquisitions will be more likely than those less dependent on acquisitions to pay a high acquisition premium when they come across a viable target offering them potential growth opportunities.

Like the impetus toward organic growth, managers will become increasingly desperate to grow through acquisition as the gap between their firm’s current level of acquisition dependence becomes significantly greater than (a) those of their industry peers or (b) their prior levels of acquisition dependence. Managers of firms with high relative acquisition dependence will become desperate to capitalize on the growth opportunities afforded by acquisitions and more willing to accept the risk of paying a significantly higher acquisition premium to achieve that growth than firms with low relative acquisition dependence. In this way, a firm’s current relative reliance on acquisitions for growth results in strategic inflexibility that steers the firm to continue to rely on acquisitions for growth and to pay significantly higher acquisition premiums than firms with more growth options. Hence we propose that when firms depend on acquisitions for growth more than their peers, or their current acquisition dependence is greater than their past levels of acquisition dependence, their managers will become desperate to grow through acquisition and be more willing to pay significantly higher acquisition premiums for their targets.

We have developed theory on how both organic growth and acquisition dependence can independently trigger desperation for growth, but they might sometimes influence each other. Importantly, though it is plausible that firms with robust organic growth may be less inclined toward acquisitions, this is not necessarily the case. In fact, firms that are very highly focused on growth—and attempt to grow both organically and through acquisitions—may continue to engage aggressively in acquisitions even when they are experiencing healthy organic growth. Although an analysis of the reasons why such firms are extremely focused on growth is beyond the scope of this paper, it may be that they are driven by hubristic, empire-building CEOs or find themselves in time periods when growth becomes the normative strategic design within an industry (e.g., merger waves). These firms might not achieve their aggressive growth goals without making acquisitions. Hence these firms may still desperately seek acquisition opportunities even if they are experiencing relatively high levels of organic growth. For example, if a firm has recently achieved high growth through both organic growth and acquisitions, investors will expect a similar level of growth in the future. Because it is often impossible to achieve the same level of growth without acquisitions—even if the firm is experiencing healthy organic growth—managers of the firm may become desperate for growth via acquisitions. For such a firm, acquisition is an integral part of its standard strategy repertoire, and acquisition dependence could influence its behavior independent of organic growth. The growth strategy of Disney during the 1990s presents a concrete example of a firm growing organically while also dependent on acquisitions for growth. During this period, Disney was experiencing relatively strong organic growth in its traditional
business segments, including theme parks and movies, but it also made a series of large acquisitions—including Capital Cities/ABC, the Anaheim Angels, Miramax films, and InfoSeek—partly because it could not achieve the aggressive annual growth target that it promised to its shareholders. Thus organic growth and acquisition dependence can drive growth through acquisitions independently from each other.

Further, similar to the case of organic growth, we predict that acquisition premiums will increase at an increasing rate as acquirers become more desperate. These arguments lead to the following set of hypotheses:

**Hypothesis 2a:** An acquirer will pay higher acquisition premiums as its acquisition dependence relative to its peer firms increases. As the acquirer’s acquisition dependence relative to its peer firms increases, the acquisition premium will increase at an increasing rate.

**Hypothesis 2b:** An acquirer will pay higher acquisition premiums as its acquisition dependence relative to its past acquisition dependence increases. As the acquirer’s acquisition dependence relative to its past acquisition dependence increases, the acquisition premium will increase at an increasing rate.

**Role of Acquisition Experience for Firms Desperate to Grow**

Prior work has shown that acquisition experience is an important source of organizational learning that can help firms become more effective acquirers (Barkema and Schijven, 2008a). One of the most crucial roles of acquisition experience in determining acquisition premiums is helping managers of firms that are desperate to grow through acquisitions avoid making poor decisions. As we discussed earlier, managers of firms experiencing low relative organic growth become desperate to grow and aggressively search for growth opportunities. Similarly, managers of firms with high relative acquisition dependence may become desperate to grow via acquisition, as they have become dependent on making acquisitions for growth and are locked into an acquisition strategy. Such desperation may blind managers and lead them to overpay for a target. At the same time, acquisition experience—and the knowledge and competencies acquired from that experience—can help managers better evaluate the risk and value associated with a target and avoid making a poor decision that results in overpaying for the target. In this way, the negative effects of the desperation for growth will be mitigated when an acquirer can rely on prior acquisition experience.

There are several ways in which acquisition experience can mitigate the influence of desperation for growth on acquisition premiums. First, when firms are pressured for growth, they may fail to create value from an acquisition because their desperation prevents them from accurately evaluating the potential synergy of a possible target, leading them to overpay for it. Acquisition experience can allow acquirers to assess more accurately the worth of targets and the potential value creation that can be achieved by combining two firms.
Through acquisition experience, acquirers can develop skills in performing a careful and deliberate analysis of target firms, which will reduce the risk of overpaying for targets even when the acquirers are desperately seeking growth opportunities (Hitt, Harrison, and Ireland, 2001). For example, acquisition templates developed by experienced acquirers provide comprehensive checklists of key factors that help ensure that managers are not misguided by their urgency to grow and take on excessive risk (Zollo and Singh, 2004).

Second, misguided by strong pressure to grow, inexperienced acquirers may overextend their search boundary for targets beyond their comfort zone and acquire a target that is misaligned with a firm’s strategic objectives and organizational capabilities. Because acquisition experience enables acquirers to learn how to set an optimal search boundary for selecting potential targets that can provide the best value for the price (Haspeslagh and Jemison, 1991), experienced acquirers may be able to stay within the boundary even when they are desperately searching for acquisition opportunities. Third, a large percentage of acquisitions fail not only because of flawed acquisition strategies but also because of a lack of organizational integration that limits potential synergy (Larsson and Finkelstein, 1999). Inexperienced acquirers tend to underestimate the difficulties of post-acquisition integration (Zollo and Singh, 2004). This tendency is more likely to manifest itself when inexperienced acquirers are desperately seeking growth opportunities. By contrast, experienced acquirers may be able to better anticipate post-acquisition integration problems and more accurately factor these sometimes unexpected costs into the price of a target even as they encounter strong growth pressure (Hunter and Jagtiani, 2003).

Acquisition experience, however, does not necessarily produce positive synergies or adaptive learning for acquiring firms. In fact, research on acquisition experience has identified how important the context of the acquisition is in enabling firms to take advantage of these potential benefits. In particular, acquirers are more likely to capitalize on prior acquisition experience in the same industry as the focal acquisition (Haleblian and Finkelstein, 1999; Hayward, 2002; Kim and Finkelstein, 2009). Such intraindustry experience reduces the odds of inappropriate generalization that can lead to poor learning outcomes (Levinthal and March, 1993). Instead, industry-specific knowledge is more likely to enable better judgment and decision making throughout the acquisition process (Sitkin and Pablo, 1992; Finkelstein and Haleblian, 2002; Zollo and Singh, 2004), including determining how much to pay for a target firm (Kesner, Shapiro, and Sharma, 1994). Hence, in this study, we focus on the moderating effect of acquirers’ intraindustry acquisition experience on the relationship between an acquirer’s growth patterns and acquisition premiums.

Taken together, the arguments above lead us to expect that acquirers’ acquisition experience will limit the effects of desperation for growth characterized by low relative organic growth or by high relative acquisition dependence and temper
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the size of a firm’s acquisition bids, which leads to the following set of hypotheses:

Hypothesis 3a: The greater an acquirer’s acquisition experience, the weaker the relationship between its organic growth relative to its peers and acquisition premiums.

Hypothesis 3b: The greater an acquirer’s acquisition experience, the weaker the relationship between its organic growth relative to its past organic growth and acquisition premiums.

Hypothesis 3c: The greater an acquirer’s acquisition experience, the weaker the relationship between its acquisition dependence relative to its peers and acquisition premiums.

Hypothesis 3d: The greater an acquirer’s acquisition experience, the weaker the relationship between its acquisition dependence relative to its past acquisition dependence and acquisition premiums.

Role of Advisors’ Acquisition Experience for Firms Desperate to Grow

Drawing on associations with other firms may allow a firm to make better decisions, as it seeks out specialized skills it may not possess (Gulati, 1995). In the acquisition context, the most important source of external knowledge is financial advisors (Allen et al., 2004). Because acquisitions are complex events in which data are difficult to process and interpret (Haspeslagh and Jemison, 1991), an outside perspective derived from advisors with significant acquisition experience may enhance the quality of acquisition decisions and reduce the risk associated with acquisitions (Baum, Li, and Usher, 2000). The primary role of acquisition advisors is frequently to assess the value of a target and price the deal (Bowers and Miller, 1990). Although it has generally been established that advisors affect the premium price, however, the specific influence of the acquisition experience of advisors on acquisition premiums remains unexplored.

The literature has shown that outside perspectives allow for differing viewpoints and more information, which yield superior decision quality (e.g., Menon and Pfeffer, 2003; Blinder and Morgan, 2005). Because acquisition advisors tend to be involved in many more acquisitions than any single firm, their extensive experience with acquisitions allows financial advisors to discern meaningful patterns in acquisition strategies (Rentsch, Heffner, and Duffy, 1994) and to develop a more comprehensive understanding of prior problems that enables them to apply previous strategies to solve current problems (McDonald, Westphal, and Graebner, 2008).

Bowers and Miller (1990) provided evidence that acquirers using advisors with more experience at identifying acquisition targets created greater value than those with less experience. Such forms of knowledge may help an acquirer pay lower acquisition premiums.

Advisors’ experience may be particularly helpful when acquirers are desperately seeking growth opportunities due to their low organic growth or high acquisition dependence. Acquirers that are under substantial growth pressure may make poor decisions and are more prone to take unnecessarily high risk because such pressure inhibits their information processing
capabilities and may cause errors in judgment (Staw, Sandelands, and Dutton, 1981; March and Shapira, 1987). These acquirers may pay more for an acquisition target than the target is worth because they cannot accurately assess the fair price of a target, and their desperation makes them less objective (Sitkin and Pablo, 1992). Further, managers of such firms may make decisions that are incongruent with their prior acquisition experience in order to relieve the immediate growth pressure or even to save their careers (Wright et al., 2007). The experience of acquisition advisors is an important source of external knowledge that can mitigate the negative effects of desperation for growth and help managers restore their objectivity, because advisors are not subject to the same growth pressures their client managers face when considering an acquisition (Powell, Koput, and Smith-Doerr, 1996; Kroll, Walters, and Wright, 2008; Gulati, Lavie, and Singh, 2009).

None of this is to say that financial advisors are necessarily free of biases. For instance, the promise of merger and acquisition fees may coax advisors to compromise their objectivity as they issue positively biased recommendations based on overly optimistic growth projections (Kolasinski and Kothari, 2008). The acquisition literature has also suggested that because acquisition advisors are hired and paid by the managers of their client firms, they sometimes tell managers what they want to hear rather than what most helps the client (e.g., Jemison and Sitkin, 1986). In addition, advisors charge a fee in part on the basis of the deal value in an acquisition, which may set up a conflict of interest between advisors and acquirers (Kesner, Shapiro, and Sharma, 1994). Further, acquirers do not always use rational criteria to choose an advisor. Haunschild and Miner (1997) found evidence that acquirers choose acquisition advisors whose past clients have paid high acquisition premiums.

At the same time, however, advisors are less prone to the particular cognitive biases faced by firms subject to growth pressures precisely because they are advisors to those firms and not principals and hence have so much less at stake than do their client managers. Financial advisors may be able to provide more objective judgments that help temper suboptimal decision making by managers in desperate firms, consequently allowing acquirers to pay more appropriate prices for targets. Relatedly, internal politics and organizational processes can lead to resistance to using knowledge that originates inside the firm (von Hippel, 1994; Szulanski, 1996), but external knowledge is subject to less scrutiny and may face less resistance.

Although the acquisition experience of advisors may well be applicable in all sorts of contexts, its greatest relevance is almost certainly when it is customized to a particular industry setting. Hence, as was the case for the acquisition experience of acquirers, we expect the strongest effects of advisors’ acquisition experience to manifest itself when derived from the same industry as that of their clients. Through their experience of advising acquirers in a given industry, acquisition advisors may develop skills and capabilities in identifying
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target opportunities in that industry, determining acquisition trends within the industry, and structuring the deal based on industry norms. Thus the greater the intraindustry experience of the advisor, the better it may be able to offer advice to the acquirer on suitable targets and appropriate target prices. Such advice may be important for desperate firms because it can neutralize their tendency to overpay for a target by encouraging them to limit premiums to more reasonable levels. We thus predict that the advisors’ acquisition experience will dampen the influence of organic growth and acquisition dependence on acquisition premiums such that:

Hypothesis 4a: The greater the advisors’ acquisition experience, the weaker the relationship between a firm’s organic growth relative to its peers and acquisition premiums.

Hypothesis 4b: The greater the advisors’ acquisition experience, the weaker the relationship between a firm’s organic growth relative to its past organic growth and acquisition premiums.

Hypothesis 4c: The greater the advisors’ acquisition experience, the weaker the relationship between a firm’s acquisition dependence relative to its peers and acquisition premiums.

Hypothesis 4d: The greater the advisors’ acquisition experience, the weaker the relationship between a firm’s acquisition dependence relative to its past acquisition dependence and acquisition premiums.

METHOD

Research Setting and Sample

We tested our hypotheses using a sample drawn from the U.S. commercial banking sector during a 12-year period from 1994 to 2005. We collected data on all 2,949 acquisitions announced (and subsequently completed) by all publicly traded commercial banking institutions (i.e., banks and thrifts) during the study period. Because acquisition premiums can be obtained only for publicly traded targets, our final sample tracked 878 acquisitions in which both acquirers and targets were publicly traded. Data on acquisitions were obtained from the SNL Financial database, and security prices used in estimating acquisition premiums were obtained from the Center for Research in Securities Pricing. Additional demographic and financial data were collected from regulatory databases maintained by the U.S. Securities and Exchange Commission and the Federal Deposit Insurance Corporation. We also used the mergers and acquisitions data from the Security Data Corporation to supplement our analysis.

The U.S. commercial banking industry offered an appropriate setting to test our research questions. Many prior acquisition studies have used data from multiple industries. Although this approach may enhance generalizability, it also introduces a high level of noise and inconsistency to the data, which poses a threat to the internal validity of the empirical models tested due to contextual differences across industries (e.g., acquisition strategies, industry norms for acceptable acquisition premiums). Hence, with data drawn from a single industry, we control for industry-specific idiosyncrasies in acquisitions. Additionally, commercial banking is a well-defined industry
with relatively homogeneous firms; this high level of homogeneity among firms within the industry reduces the potential estimation bias that may arise from population heterogeneity, and it is helpful in developing measures that can be consistently applied to most firms in the industry.

Acquisitions were not common in the banking industry until deregulation in the late 1980s because regulators did not allow aggressive bank expansion, and interstate bank operations were strictly prohibited by most states. In 1987, however, two regulatory acts—the Competitive Equality Banking Act of 1987 (CEBA) and the Douglas Amendment to the Bank Holding Company Act in 1987—greatly relaxed restrictions on bank acquisitions by eliminating barriers to interstate bank expansion, triggering an unprecedented wave of acquisition activity in the banking industry. Many banks actively engaged in acquisition activities to capitalize on new growth opportunities afforded by these deregulations (Davis, 2009), but because there was also substantial variation in the level of reliance on acquisitions for growth among banks, the banking industry during this time period provides an excellent opportunity to study how firms’ desire for growth affected their behavior.

Dependent Variable

The dependent variable is the premium paid for an acquisition. Research suggests that acquisition premiums are negatively associated with post-acquisition return to the acquiring firm’s shareholders (Varaiya and Ferris, 1987; Haunschild, 1994; Krishnan, Hitt, and Park, 2007). Hence when a large premium is paid to acquire a target, it becomes challenging for the acquirer to cover the costs of making the acquisition. Failure to extract the value from the acquisition that is greater than the premium paid for the acquisition results in poor post-acquisition performance (Sirower, 1997; Hitt, Harrison, and Ireland, 2001) and could even lead to bankruptcy (Haunschild, 1994).

*Acquisition premium* was measured by the purchase price per target share paid by the acquiring firm less the target’s pre-acquisition stock price, divided by the pre-acquisition stock price. The target’s stock price increases as the likelihood of acquisition increases and more information about the acquisition becomes available to the market; thus calculating the acquisition premium based on a pre-acquisition stock price that is too temporally close to the announcement date may result in underestimation of the acquisition premium (Laamanen, 2007). This pattern occurs in our sample as well; premiums calculated based on short-term windows are smaller than those calculated based on longer-term windows. In our sample, the three-day average premiums were 32 percent, while 90-day average premiums were 44 percent. To avoid the bias caused by the run-up in a target’s stock due to the anticipation of an acquisition, we used 30 days prior to the acquisition announcement date as the basis for the target’s pre-acquisition stock price, a commonly used time window in prior studies (Haunschild, 1994; Hayward and Hambrick, 1997). Although the use of a longer-term window reduces the effect of the market’s pre-acquisition anticipation,
it could also introduce noise due to compounding events that may occur during the period. Thus we tested the robustness of our results by using a shorter window (i.e., three-day premiums) and a longer window (i.e., 90-day premiums) as our dependent variable and found generally consistent results.

Independent and Moderating Variables

Organic growth. This variable represents the rate at which a focal acquirer grew organically by internal activities, and not by acquisitions. We used total assets to measure bank growth. Total assets are a more appropriate metric for growth in a bank than alternative measures, such as loans or revenues (i.e., interest income), because total assets capture all aspects of a bank’s growth. Though some banks have a traditional business model and grow mainly by selling loans to their customers, other banks have a more diversified business portfolio and grow not only by loans but also through investment or securitization (Davis, 2009). Thus, while loan volume or interest income cannot capture the growth a bank achieved through alternative growth strategies, total assets encompass a bank’s total growth through different types of growth strategies.

Testing our theories required measuring each bank’s organic growth (1) relative to the organic growth of its peer banks (Relative social organic growth) and (2) relative to its own past level of organic growth (Relative historical organic growth). Because acquirers can compare their levels of organic growth with all other comparable banks, we calculated organic growth of not only the banks in the sample but also all the banks that existed during the study period. To calculate Relative social organic growth, we first measured the organic growth of all of the 29,146 banks in existence during the study period, which was operationalized by the annual compound growth rate of a bank’s total assets during the three-year period prior to the focal year minus any growth in total assets resulting from mergers and acquisitions during the period. Thus the three-year organic growth of a bank i at the time of the focal acquisition made at year t can be represented as:

$$3\text{- year organic growth}_{i,t} = \sqrt[3]{\frac{\text{Total assets}_{i,t-1} - \sum_{t-4}^{t-1} \text{Total assets of targets}_{i,t}}{\text{Total assets}_{i,t-1}}} - 1.$$ 

where Total assets$_{i,t}$ is the total assets of bank i in year t, and Total assets of targets$_{i,t}$ is the total assets of all the targets that bank i acquired during year t.

Then we calculated relative social organic growth by taking the three-year organic growth of the focal bank in the sample and subtracting the average three-year organic growth of its peer banks. We defined peer firms as all the banks in existence that operated in all the states in which the focal bank operated in a given year. We used the states as the boundary for defining peer groups because commercial banks are likely to compare their performance with other banks in the same geographic market, as they mainly compete with other banks...
in the same geographic market. For example, if a bank operated in three states—e.g., Illinois, Ohio, and Michigan—during the three-year period between 2000 and 2002, the relative social organic growth of the bank for this period was its organic growth minus the average organic growth of all the banks that also operated in the same three states during the same period. Finally, we transformed this variable using log-transformation to model the non-linear relationship between relative social organic growth and acquisition premium. The log-transformation has been frequently used in the management literature to model a non-linear relationship (e.g., Burt, 2004, 2007).

Relative historical organic growth represents an acquirer’s current level of organic growth relative to its past level of organic growth. An acquirer’s past level of organic growth was measured by an exponentially weighted moving average of the acquirer’s organic growth in the past. This approach is analogous to the way in which historical aspiration levels have been measured in behavioral learning research (Greve, 1998; Audia and Greve, 2006). Specifically, the historical organic growth of a bank \( i \) at the time of the focal acquisition made at year \( t \) can be represented as:

\[
\text{Historical organic growth}_{i,t} = \alpha \cdot \text{Organic growth}_{i,t-1} + (1 - \alpha) \cdot \text{Historical organic growth}_{i,t-1},
\]

where \( \text{Organic growth}_{i,t} \) is the organic growth of bank \( i \) at year \( t \) (i.e., total growth minus growth through acquisitions between \( t - 1 \) and \( t \)) and \( \alpha \) is the weight assigned to the most recent organic growth.

This method depicts a process in which a bank’s most recent year’s organic growth updates last year’s historical organic growth (Greve, 1998). The weighting factor, \( \alpha \), is set to 0.3, which provides the best model fit among alternative weighting factors. Thus relative historical organic growth was operationalized by subtracting an acquirer’s historical organic growth from its current year’s organic growth. This variable was then log-transformed to model the non-linear relationship between relative historical organic growth and acquisition premium.

Acquisition dependence. This variable measures the portion of growth that an acquirer consummated through acquisition. To measure Relative social acquisition dependence, we first calculated the three-year acquisition dependence of all the banks in existence during the study period, which was operationalized as the total amount of growth in total assets that a bank realized via acquisitions (i.e., the sum of the total assets of all the targets) during the three-year period prior to the focal year as a percentage of the total amount of growth in total assets during the same period:

\[
3 - \text{year acquisition dependence}_{i,t} = \frac{\sum_{t-4}^{t-1} \text{Total assets of targets}_{i,t}}{\text{Total assets}_{i,t-1} - \text{Total assets}_{i,t-4}}
\]
We then calculated relative social acquisition dependence as the three-year acquisition dependence of a focal bank in the sample minus the average three-year acquisition dependence of all the banks that also operated in the states in which the focal bank operated.

Relative historical acquisition dependence was operationalized as the difference between an acquirer’s current year’s acquisition dependence and its historical level of acquisition dependence, which was measured in the same way that historical organic growth was created. Banks with higher scores on acquisition dependence variables were more dependent on acquisitions for their growth (i.e., more desperate for growth) than those with lower scores (i.e., less desperate for growth). Because this is inconsistent with the organic growth variables in which banks with higher scores are less desperate for growth and those with lower scores are more desperate for growth, however, we reverse-coded relative social acquisition dependence and relative historical acquisition dependence so that these variables are graphically consistent with organic growth variables and are easier to interpret. Both acquisition dependence variables were log-transformed to model non-linear relationships with acquisition premium.

Acquisition experience. As we discussed earlier, the important deregulatory movements in the late 1980s and the early 1990s (e.g., CEBA) changed the acquisition landscape in such a fundamental way that acquirers’ acquisition experience before this period became mostly irrelevant. Thus we measured 

\[ \text{Acquirer acquisition experience}_{it} = \sum_{t=1}^{T} \frac{\text{Total number of intraindustry acquisitions}_{it}}{\text{Age of experience}_{it}}, \]

where \( \text{Total number of intraindustry acquisitions}_{it} \) is the total number of intraindustry acquisitions that the focal bank \( i \) made in year \( t \), \( t \) is either 1990 (for banks founded before the study period) or the founding year (for banks founded after the study period), and \( \text{Age of experience}_{it} \) is the discount factor.

Advisor acquisition experience was measured by the total number of acquisitions for which the focal acquisition advisor served as advisor in the commercial banking sector between 1988 and the focal acquisition. Acquiring financial service institutions is substantially different from acquiring other types of firms. It requires knowledge and experience that are specific to the industry, such as addressing regulatory concerns and assessing localized competition, and many acquisition advisors that advised firms making acquisitions in our sample focused exclusively on banking deals. Large
investment bankers also tended to have a special division that handled acquisitions of financial institutions. Hence, this measure only counted advisor experience when it was specific to the commercial banking industry. We also discounted this variable using the age of each experience to account for the depreciation of the value of experience over time. Thus Advisor acquisition experience was measured by the discounted sum of the number of bank acquisitions that the advisor of a focal acquisition advised between 1988 and the focal acquisition. To check the robustness of our results, we estimated models using non-discounted Acquirer acquisition experience and Advisor acquisition experience and obtained generally consistent results.

Control Variables

Based on a comprehensive review of prior studies on corporate acquisition and acquisition premiums, we included control variables on the characteristics of the acquirer, the target, and the acquisitions themselves to rule out potentially confounding factors that could affect acquisition premiums. First, we controlled for acquirer characteristics that could influence the premium paid for a target. Large acquirers or those with strong firm performance may have significant financial resources and thus may be able to pay a higher acquisition premium. Acquirer size, measured by the total assets of an acquirer, was included in the model to control for the potential impact of firm size. Hayward and Hambrick (1997) found that managers of high-performance firms are likely to pay a large acquisition premium because they are more confident in making successful acquisitions. Acquirer performance, measured by the acquirer’s return on assets, was added to control for the effects of acquirers’ overall financial performance on the acquisition premium. Similarly, firms with a strong acquisition performance history are more likely to pay a high acquisition premium because they may believe that they can repeat prior successes and extract greater value from the current acquisition than the premium paid (Haleblian, Kim, and Rajagopalan, 2006). Thus we controlled for Past acquisition performance, the average cumulative abnormal returns of all the prior acquisitions the acquirer made since 1988. Acquirers with significant financial slack may be able to afford a higher acquisition premium; thus Acquirer slack resources, which was measured as the ratio of core deposits to the total assets of acquirers, was added to the models.1 The ownership structure of the acquiring firm may affect the acquisition premium because large institutional block holders can limit managers’ decision-making flexibility. Those block holders are often involved in important strategic decisions, and their oversight may limit managers’ ability to pay a high acquisition premium. Hence we controlled for Institutional ownership, measured by the percentage of a firm’s stock owned by institutional block holders.

The business strategy of a bank may also influence the premium that it is willing to pay for a target. For example, since the mid-1990s, some banks have begun to aggressively diversify their business portfolios and significantly increased their investment assets. In particular, the securitization of loans (i.e., originating, securitizing, and selling loans)—a form of derivatives—has emerged as a popular business tactic.

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1 Core deposits are the portion of a bank’s total deposit that are likely to stay on the balance sheet of the bank and are an important source of funding for bank operations. We also estimated models using a more traditional measure of slack resources, the liquidity ratio (the ratio of total liquid assets to total liabilities), and found consistent results.
Acquisition Premiums

(Davis, 2009, 2010). The banks relying heavily on securitization may have a greater incentive to make acquisitions, as they can quickly cash in the acquired assets through securitization. Thus a bank’s business strategy could potentially influence its incentive to acquire, which in turn could affect acquisition premiums. We included two variables to control for the effects of the business strategies of banks in the sample. We added Asset diversification, which captures the degree to which a bank’s assets are diversified. We created an entropy measure of the six most important components of a bank’s assets (Jacquemin and Berry, 1979): (1) loans and leases, (2) loans and leases held for sale, (3) securities, (4) cash balances due from depository institutions, (5) federal funds sold and securities purchased under agreements to resell, and (6) trading accounts assets. We also added Security ratio, measured as the ratio of the total securities to the total assets of a bank.

Second, we controlled for the targets’ characteristics, which may create valuable resource combinations (Haspeslagh and Jemison, 1991; Cannella and Hambrick, 1993). For example, acquirers are more willing to pay a high premium for strongly performing targets because they are more attractive than poorly performing ones. Hence we included four target attributes—size, performance, growth, and slack resources—that may influence the attractiveness of a target. Target size was measured as the total assets of the target at the time of the acquisition announcement. Target performance was measured by the return on assets of the target. Acquirers who want to boost their growth through acquisition will prefer targets with healthy growth and will be more willing to pay higher acquisition premiums. We included Target growth, which was measured by the compounded growth rate of a target over the three-year period before the announcement of the acquisition. Target slack resources was measured as the ratio of core deposits to the total assets of the target.

Third, we controlled for six key characteristics of the focal acquisition that could influence the acquisition premium. Acquirers often keep information pertaining to their upcoming acquisition confidential until the public announcement of the deal, partly because such information could increase competition from competing bidders. To control for the potential effect of rumors on acquisition, we added Related rumors, coded 1 if there was any related rumor about the focal acquisition before it was publicly announced, or 0 otherwise. Because the presence of competing bidders can increase the acquisition premium (Slusky and Caves, 1991), we also controlled for Competing bidders, measured as the number of competing bidders for each deal. A lock-up agreement refers to a legally binding contract that prohibits insiders of firms involved in an acquisition from selling any shares of stock for a specified period of time after the acquisition. The lock-up agreement could influence acquisition premiums by affecting the motivation of the insiders of the firm. Thus we included Lock-up agreement in the models, which was coded 1 if a lock-up agreement was present in an acquisition, or 0 otherwise.

The relative size of an acquisition has also been shown to influence acquisition performance (Fowler and Schmidt, 1989; King et al., 2004), which in turn might affect the level of

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premium an acquirer is willing to pay. Accordingly, we controlled for Relative acquisition size, measured as the ratio of the target’s assets to the acquirer’s assets. How acquirers fund an acquisition can also influence the acquisition premium. Because acquiring a target with stock may dilute the value of the firm, consequently influencing the acquirer’s ability to pay an acquisition premium, we controlled for Stock consideration, which we coded 1 if the focal acquisition was financed by issuing stocks, or 0 if it was financed by issuing debt or using cash. In addition, our sample includes two types of commercial banking firms—commercial banks and thrifts (i.e., savings and loans and savings banks), which differ on multiple dimensions, including regulatory agencies, market segments, and primary customers. These differences may affect the merged firm’s ability to capture synergy from the acquisition and ultimately an acquirer’s willingness to pay. Thus we included Firm type relatedness, which was coded 1 if both the acquirer and the target were the same type of banking institution, and 0 otherwise.

After the deregulation of interstate banking acquisitions, a few bank holding companies began to aggressively make acquisitions to become national banks (Davis and Mizruchi, 1999; Davis, 2009). Such banks may have been more willing to pay a high acquisition premium for a target located outside their existing territory to fulfill their aspirations. Thus we included Geographic expansion, which was coded 1 if the target in the focal acquisition was located outside the acquirer’s existing geographic market, and 0 otherwise. Additionally, if a bank has been aggressively acquiring out-of-market targets, it may indicate its strong desire to expand beyond its existing market. Such a bank may be also willing to pay high premiums to achieve its expansion goals. We controlled for the acquirers’ propensity to expand beyond their existing markets by including Geographic expansion deal value ratio, which was measured by the total deal value of all out-of-market acquisitions that an acquirer made in the past divided by the total deal value of all acquisitions of any type completed by the bank. Finally, we controlled for the effects of socioeconomic conditions on acquisition activity by including dummy variables for all but one of the 12 years in the sample.

Analysis

Our sample consists of 878 acquisitions that were made by 401 firms. We estimated the models using a cross-sectional time series technique by pooling the longitudinal panel data. Because many firms in the sample made more than one acquisition, pooling multiple acquisitions made by the same firm violates the assumption of independent observations required for OLS regression, resulting in serial correlation of the model’s residuals. Thus we used within-group fixed-effects GLS models (Greene, 2003). The fixed-effects models not only control for the serial correlation but also allow us to more effectively test our theories by controlling for the unobserved but relatively constant proclivity to pay high acquisition premiums that our theories do not predict.2

Our sample consists of publicly traded banks that made at least one acquisition of a publicly traded target. Obviously,
banks that did not make any acquisitions are not included in the sample. This does not raise a sampling issue because we do not intend to generalize our findings to firms that did not make an acquisition. Nonetheless, we performed a supplementary analysis to probe whether our sample selection significantly affected our findings. Specifically, following the procedure proposed by Heckman (1979), we calculated the inverse Mills’ ratio by estimating a model of acquisition likelihood using a sample of all publicly traded banks that existed during our study period, and we found that its inclusion did not affect our findings.3

RESULTS

Table 1 shows the descriptive statistics and bivariate correlations for the variables used in the study. Correlations are in the low to moderate range, which generally does not raise multicollinearity concerns (Cohen and Cohen, 1983), but we calculated variance inflation factors (VIF) to detect the

3 We did not report the model with the inverse Mills’ ratio because, among econometricians, there are debates about the appropriateness of using the Heckman two-stage model in statistical procedures other than OLS (particularly in the case of the maximum-likelihood estimation techniques used in this paper) (Greene, 2003). Nevertheless, we note that our sample selection did not affect our findings. The results are available from the first author.

Table 1

Descriptive Statistics and Zero-Order Correlations of Key Variables (N = 878)*

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(continued)
Table 1 (continued)

Descriptive Statistics and Zero-Order Correlations of Key Variables (N = 878)*

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<td>-.01</td>
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<td>25. Relative historical organic growth</td>
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<td>26. Relative historical acquisition dependence</td>
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</table>

* Correlations larger than |.066| are significant at \( p < .05 \), and those larger than |.088| are significant at \( p < .01 \).

The presence of any multicollinearity. The average VIF for model 3 (the model with main effects) is 1.82, and the VIFs for individual variables range from 1.06 to 3.44, and the tolerance values range from 0.29 to 0.95. The average VIF for models 4 and 5 (interaction models) are both 1.79. The individual VIFs range from 1.06 to 3.47, and the tolerance values range from 0.29 to 0.94. VIFs smaller than 10 and tolerances larger than 0.1 do not raise significant multicollinearity concerns, so we did not find evidence of multicollinearity in our sample. Further, we could not detect any coefficient instability among the research variables when variables were added individually and hierarchically (Greenberg and Parks, 1997; Kennedy, 2003).

Table 2 reports the fixed-effects GLS estimates that predict acquisition premium. Model 1 reports only control variables and moderating variables. Models 2 and 3 hierarchically add four organic growth and acquisition dependence variables. Model 4 adds the interactions between acquirer acquisition experience and the four organic growth and acquisition dependence variables, and model 5 adds the interactions between advisor acquisition experience and the four organic growth and acquisition dependence variables. Each of the predictor variables were mean-centered to maximize interpretability and to minimize any potential multicollinearity (Aiken and West, 1991). The addition of each variable significantly improved the model fit. The results for the year dummy variables were omitted from the table to save space.
### Table 2

**Fixed Effects Estimation on Acquisition Premium (N = 878)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.4197 (.295)</td>
<td>2.1363** (.349)</td>
<td>3.6688** (.504)</td>
<td>.3032 (.259)</td>
<td>.4160 (.253)</td>
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<td><strong>Acquirer characteristics</strong></td>
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<tr>
<td>Acquirer size</td>
<td>.00005 (.000)</td>
<td>-.00005 (.000)</td>
<td>-.00005 (.000)</td>
<td>.00002 (.000)</td>
<td>.0001 (0.000)</td>
</tr>
<tr>
<td>Acquirer performance</td>
<td>-.0102 (.003)</td>
<td>.0399 (.037)</td>
<td>.0565 (.035)</td>
<td>.0662 (.035)</td>
<td>.0427 (.034)</td>
</tr>
<tr>
<td>Acquirer slack resources</td>
<td>-.0634 (.317)</td>
<td>-.1881 (.293)</td>
<td>-.4099 (.284)</td>
<td>-.2955 (.285)</td>
<td>-.3434 (.278)</td>
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<tr>
<td>Institutional ownership</td>
<td>.2291 (.421)</td>
<td>.1429 (.389)</td>
<td>.2441 (.373)</td>
<td>.1897 (.375)</td>
<td>.0973 (.371)</td>
</tr>
<tr>
<td>Past acquisition performance</td>
<td>2.3222* (1.165)</td>
<td>2.4030* (1.077)</td>
<td>2.3177* (1.027)</td>
<td>2.2466* (1.025)</td>
<td>2.6146** (1.005)</td>
</tr>
<tr>
<td>Asset diversification</td>
<td>-.3244* (.166)</td>
<td>-.2883 (.154)</td>
<td>-.2112 (.147)</td>
<td>-.2189 (.146)</td>
<td>-.2256 (.143)</td>
</tr>
<tr>
<td>Security ratio</td>
<td>.2191 (.320)</td>
<td>.2910 (.297)</td>
<td>.3554 (.283)</td>
<td>.4221 (.283)</td>
<td>.3567 (.276)</td>
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<tr>
<td><strong>Target characteristics</strong></td>
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</tr>
<tr>
<td>Target size</td>
<td>.0004 (.001)</td>
<td>-.00002 (.001)</td>
<td>-.0003 (.001)</td>
<td>-.0001 (.001)</td>
<td>-.0004 (.001)</td>
</tr>
<tr>
<td>Target performance</td>
<td>.0288* (.014)</td>
<td>.0211 (.013)</td>
<td>.0183 (.012)</td>
<td>.0169 (.012)</td>
<td>.0168 (.012)</td>
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<tr>
<td>Target slack resources</td>
<td>.2743 (.146)</td>
<td>.2811* (.135)</td>
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<td>.3194* (.128)</td>
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<tr>
<td>Target growth</td>
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<td>-.1163 (.091)</td>
<td>-.1444 (.086)</td>
<td>-.1459 (.086)</td>
<td>-.1464 (.084)</td>
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<td><strong>Deal characteristics</strong></td>
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<tr>
<td>Related rumors</td>
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<td>Competing bidders</td>
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<td>Lock-up agreement</td>
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<td>Relative size</td>
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<td>-.1455* (.069)</td>
<td>-.1425* (.067)</td>
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<tr>
<td>Stock consideration</td>
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<td>-.0115 (.035)</td>
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<td>-.0214 (.034)</td>
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<td>Firm type relatedness</td>
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<td>-.0028 (.032)</td>
<td>.0011 (.031)</td>
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<tr>
<td>Geographic expansion</td>
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<td>-.0209 (.044)</td>
<td>-.0314 (.044)</td>
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<td>Geographic expansion deal value ratio</td>
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<td>.0656 (.108)</td>
<td>.0242 (.103)</td>
<td>-.0420 (.104)</td>
<td>.1532 (.104)</td>
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<td><strong>Acquisition experience</strong></td>
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<tr>
<td>Acquirer acquisition experience</td>
<td>-.0101 (.007)</td>
<td>-.0149* (.006)</td>
<td>-.0183** (.006)</td>
<td>-.0175** (.006)</td>
<td>-.0215** (.006)</td>
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<td>Advisor acquisition experience</td>
<td>-.0006 (.001)</td>
<td>-.00003 (.001)</td>
<td>-.0004 (.001)</td>
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<td>Relative social organic growth</td>
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<td>-.4341** (.085)</td>
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(continued)
Hypothesis 1a predicted that an acquirer’s organic growth relative to peers and acquisition premium would be negatively related, as firms that experienced low organic growth are more likely to pay a high acquisition premium. In line with this prediction, the coefficient for relative social organic growth was negative and significant in all models. We also predicted that acquisition premiums would increase at an increasing rate as an acquirer’s organic growth compared with its industry peers diminishes. As we described in the method section, we transformed organic growth and acquisition dependence variables using a natural logarithm to test for the presence of non-linear relationships. We then compared the goodness of fit of the models based on the log-transformed growth variables and the goodness of fit of the models based on the linear growth variables. A better goodness of fit of the model based on the log-transformed growth variables would infer the presence of a non-linear relationship in our data (Kennedy, 2003).

Because we were comparing non-nested models, we used Akaike’s Information Criteria (AIC) and Bayesian Information Criteria (BIC) to compare the goodness of fit among the models. These statistics are the most commonly used criteria for model selection among non-nested parametric models (Akaike, 1974; Schwarz, 1978) and can be appropriately used

Table 2 (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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<td>Advisor acquisition experience x Relative social organic growth</td>
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<td>Advisor acquisition experience x Relative historical acquisition dependence</td>
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* p < .05; ** p < .01; significance tests are two-tailed.
* The values in parentheses are standard errors. Year dummy variables (1994–2004) are omitted.
for the GLS models we used in this study (Raftery, 1995). These criteria describe the trade-offs between the accuracy and complexity of the model and enable us to evaluate a model by how close its fitted values tend to be to the true values, in terms of expected values. The preferred model is the one with the lowest AIC or BIC values (Burnham and Anderson, 1998). Our results suggested that the models with the log-transformed growth variables consistently outperform the models with the linear growth variables. Specifically, the AIC and BIC for model 3 based on the variables with a linear specification are −329.76 and −177.28, respectively, while the AIC and BIC for the same model based on the variables with a log specification are −364.13 and −192.14, respectively. The interaction models provided similar results. For example, the AIC and BIC for model 4 with the linear variables are −326.38 and −135.39, respectively, but the AIC and BIC for model 4 with the log-transformed variables are −372.37 and −181.27, respectively. These results indicate that the log specification fits the data better than the linear specification and confirm the presence of a non-linear relationship between relative social organic growth and acquisition premium. Figure 1A depicts this relationship and clearly shows that acquisition premium increases at an increasing rate as the acquirer becomes more desperate for growth (i.e., lower relative social organic growth). These results provide strong support for hypothesis 1a.

Hypothesis 1b predicted that acquirers will pay increasingly higher acquisition premiums as their current levels of organic growth relative to their past levels of organic growth decreases. Consistent with this prediction, the coefficient for relative historical organic growth was negatively and significantly related to acquisition premium in all models. In addition, as shown in figure 1B, acquisition premium increases at an increasing rate as the negative gap between an acquirer’s current organic growth and its past organic growth widens, providing support for hypothesis 1b.

Hypothesis 2a predicted that acquirers that have been relying on acquisitions for growth more than their peer firms will be more likely to pay higher acquisition premiums. Relative social acquisition dependence had a negative coefficient and was statistically significant. As a reminder, we reverse-coded the acquisition dependence variables to make them consistent with the organic growth variables—i.e., small values for both the organic growth and the acquisition dependence variables represent a high level of desperation, while large values indicate a low level of desperation. Thus a negative coefficient indicates that the acquisition premium increases as the desperation increases for both organic growth and acquisition dependence. Figure 1C illustrates that the acquisition premium increases at an increasing rate as acquirers’ dependence on acquisition relative to their peers increases (i.e., as the relative social acquisition dependence score becomes smaller), and they become more desperate for growth. Hypothesis 2b similarly predicted that acquirers are more likely to pay higher premiums as their acquisition dependence increases in comparison to their past acquisition...
dependence. Consistent with this prediction, relative historical acquisition dependence was negatively associated with acquisition premium and was statistically significant. Further, as shown in figure 1D, acquirers’ willingness to pay acquisition premiums increases at an increasing rate as their dependence on acquisition increases in comparison to their past acquisition dependence (i.e., as the relative historical acquisition dependence score becomes smaller). Taken together, these results provide supporting evidence for hypotheses 2a and 2b.

In addition to testing hypotheses, we calculated the magnitude of the effects to assess how big the desperation penalty is when organic growth is low or acquisition dependence is high. We computed how much more firms with low organic growth (or high acquisition dependence) pay in acquisition premiums when compared with firms with high organic growth (or low acquisition dependence). When all the other variables are held constant, acquirers with low relative social organic growth (i.e., the banks with a value that is two standard deviations below the mean) pay approximately 31 percent higher acquisition premiums than those with high relative social organic growth (i.e., the banks with a value that
is two standard deviations above the mean). Similarly, acquirers with low relative historical organic growth pay 25 percent higher acquisition premiums than those with high relative historical organic growth. The acquisition premium paid by acquirers with high relative social acquisition dependence is 44 percent higher than firms with low relative social acquisition dependence, while the acquisition premium paid by acquirers with high relative historical acquisition dependence is 15 percent higher than the acquisition premium paid by those with low relative historical acquisition dependence. These results suggest that desperation caused by low relative organic growth or high acquisition dependence plays a substantial role in determining the amount of the acquisition premium that an acquirer pays in an acquisition.

Hypotheses 3a and 3b predicted that an acquirer’s acquisition experience would moderate the relationship between organic growth and acquisition premium. Hypotheses 3c and 3d similarly predicted that acquirers’ acquisition experience would moderate the relationship between acquisition dependence and the acquisition premium. None of the coefficients for the four interaction terms between acquirer acquisition experience and the growth variables were statistically significant in model 4. Thus hypotheses 3a–3d received no support. These results imply that an acquirer’s own experience does not alleviate its desperation for growth.

Hypotheses 4a and 4b predicted that the advisors’ acquisition experience would moderate the relationship between organic growth and the acquisition premium. As shown in model 5, both (1) the interaction between advisor acquisition experience and relative social organic growth and (2) the interaction between advisor acquisition experience and relative historical organic growth were negative and statistically significant. Figure 2A illustrates how advisor acquisition experience moderates the relationship between relative social organic growth and acquisition premium. The graph plots the regression lines of acquisition premium on relative social organic growth at different levels of advisor acquisition experience within the data range corresponding to two standard deviation above and below the mean of each variable (Aiken and West, 1991). The solid regression line represents firms with low advisor acquisition experience, and the dotted regression line represents firms with high advisor acquisition experience. Figure 2B shows the similar relationship for relative historical organic growth. As expected, acquirers paid the highest acquisition premium when their acquisition advisors had low experience and their organic growth relative to their peers or relative to their past organic growth was low, but they paid the lowest premium when their advisors had high experience and they experienced strong relative organic growth, results that support hypotheses 4a and 4b.

Hypotheses 4c and 4d predicted that advisors’ acquisition experience would moderate the relationship between relative acquisition dependence and acquisition premium. Model 5 shows that the two interaction terms between (1) advisor acquisition experience and relative social acquisition dependence and (2) advisor acquisition experience and relative historical acquisition dependence were both negative and
Figures 2C and 2D show that acquirers paid the highest premium when their advisors had a low level of experience and they were highly dependent on acquisitions for growth, but they paid the lowest premium when their advisors had high experience and they were not heavily dependent on acquisitions for growth, supporting H4c and H4d. Taken together, the results of testing hypotheses 3a–3d and 4a–4d imply that the acquisition experience of advisors tends to have a more significant influence on the relationship between growth patterns and acquisition premiums than the acquisition experience of the acquirers themselves.

DISCUSSION

Our results support our theory that managers become desperate to grow via acquisition under two conditions. The first condition is when they face organic growth that is substantially lower than either their industry peers or their own historical organic growth rate. The second condition is when they have relied on acquisitions for growth much more heavily than their industry peers or compared with their historical dependence on acquisitions for growth. We found that firms with low relative organic growth pay greater acquisition premiums than firms growing organically at a faster rate.
Further, we found that as relative organic growth decreases, firms end up paying higher premiums at an increasing rate, which is consistent with the notion that desperation intensifies when a firm’s relative organic growth is substantially low. Similarly, our results indicate that firms with high relative acquisition dependence pay higher acquisition premiums than firms with low relative acquisition dependence. The rate of the increase in acquisition premium accelerates as a firm’s relative acquisition dependence increases. Hence the inability to grow organically or heavy dependence on acquisitions for growth will make managers of a firm desperate to grow through acquisition and compel them to pay high premiums. These findings offer an important insight into why some acquirers tend to pay more for targets by uncovering pressures for growth that drive acquisition behavior.

In addition, we found that acquisition advisors’ experience played an important role in putting the brakes on the tendency of desperate acquirers to overpay for acquisition targets. Our results show that advisors’ acquisition experience lessened the negative effects of desperation, indicating that the experience of a sound advisor may allow a firm to overcome an inclination to overpay for acquisitions. But the results provided little support for the idea that acquirers’ own acquisition experience can reduce the propensity of desperate acquirers to pay higher premiums. This study contributes to the existing literature in several important ways. First, drawing on theories of organizational learning and risk taking, we developed a theory of desperation in the context of firm growth. While such firm-level desperation is likely to result from many internal and external factors, we focused our analysis on firm growth. To the best of our knowledge, this is the first study that attempts to empirically test the effects of desperation at the firm level and advances our understanding of the impact of firm-level desperation on decision making. Second, we contribute to the organizational learning literature by exploring how both internal (i.e., acquirer’s) and external (i.e., advisor’s) experience moderate the effects of desperation for growth on acquisition premiums. We uncovered an interesting pattern of results that suggests that external experience is more valuable than internal experience when it comes to curbing the negative consequences of desperation. Our findings add important insights to the existing learning literature by providing evidence that different types of experience or information have different characteristics and produce different learning outcomes (Haunschild and Beckman, 1998; Menon and Pfeffer, 2003). Finally, normative studies and anecdotal evidence have long suggested that firm growth is an important consideration in acquisition decisions (e.g., Laurie, Doz, and Sheer, 2006). But while prior academic work has explored influences on acquisition behavior such as strategy (e.g., Graebner and Eisenhardt, 2004), network ties (e.g., Westphal, Seidel, and Stewart, 2001), and CEO hubris (e.g., Hayward and Hambrick, 1997), the role of firm growth in acquisition behavior—specifically acquisition premiums—has not been explicitly studied. We filled this important gap in the acquisition literature by examining how firm growth patterns affect acquisition behavior.
Toward a Theory of Firm-level Desperation

This study introduces a new and important theoretical perspective to the management literature: the role of firm-level desperation. Emerging anecdotal evidence suggests that desperation is a motive for action in which specific conditions drive managers toward inappropriate and often risky decisions (Finkelstein, 2003). Further, recent theory development suggests that firms facing intense performance pressures tend to exhibit more extreme strategic behaviors (Hambrick, Finkelstein, and Mooney, 2005). In this vein, it is possible that managerial desperation may be related to managerial discretion (Hambrick and Finkelstein, 1987), such that when discretionary options dwindle, managerial desperation may begin to take hold.

Relatedly, Greve (2008) suggested that firms smaller than their desired target size are more likely to take on risk to achieve growth. In another study, he found that radio stations are more likely to change their broadcasting format—a risky strategic move—when their market position is weak (Greve, 1998). Similarly, Wiseman and Bromiley (1996) reported that organizational decline increases risk taking. These studies suggest that desperate managers faced with a difficult situation (e.g., low growth or poor profitability) may become more willing to engage in excessive risk and behave in ways that are not necessarily aligned with shareholder value (e.g., paying too much for an acquisition with an uncertain outlook) (Pablo, Sitkin, and Jemison, 1996).

A broader theory of managerial desperation that might take this idea beyond the context of acquisitions would require considerably more empirical analysis. Nevertheless, we cautiously speculate that such an elaborated theory would be consistent with the notion we have advanced here, namely, that managers of a firm become desperate when their quest for a highly desired outcome like growth is thwarted by past choices (e.g., a heavy reliance on acquisitions for growth) or results from past choices (e.g., an inability to generate sufficient organic growth opportunities). It may be that desperation can be triggered by various forms of declining performance, such as a dramatically shrinking research and development pipeline, or high levels of strategic dependence, for example, overwhelming skills in one area such as innovation or marketing that limit skill development in other areas, either of which may drive a firm with limited options to increase their risk taking to achieve desired ends (e.g., Higgins and Rodriguez, 2006). While the term “desperation” may be provocative, we believe it does characterize a phenomenon that may drive firm behavior under certain conditions. Although our results are consistent with the notion of desperation, further empirical investigation would do much to shed light on the conceptual validity and limits of this idea.

The Role of Experience

The pattern of results from our interaction analyses suggests that advisors’ acquisition experience played a bigger role in mitigating the negative effects of desperation than acquirers’ own acquisition experience. Surprisingly, acquirers’ own acquisition experience did not have any statistically significant
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interaction effect, suggesting that such experience does not weaken the effects of desperation for growth on acquisition premiums, but advisors’ acquisition experience consistently had statistically significant interaction effects with all four growth variables. Thus advice from an experienced advisor is a significant form of acquisition experience that mitigates the impact of growth patterns on acquisition premiums, but an acquirer’s own acquisition experience has no salutary effect.

In understanding why advisors’ experience is more effective than acquirers’ own experience in curbing the effects of desperation for growth, the main effect results add another layer of complexity to the story of the interaction effects of experience that might provide some insight. Acquisition experience generally had significant negative effects on acquisition premiums, and advisors’ experience was not statistically significant though the direction of its effect was negative. Yet the interaction results indicate that only advisors’ experience helped mitigate the negative consequences of low organic growth or high acquisition dependence. This intriguing pattern of results indicates that acquirers’ own experience with acquisitions is actually beneficial in the general case but that it does not help acquirers limit the adverse effects of desperation for growth. It may be that threat rigidity takes over when decision makers are under great pressure (in this case, to grow) such that they do not even rely on their own experience in facing up to major challenges (Staw, Sandelands, and Dutton, 1981; March and Shapira, 1987; Ocasio, 1995). In contrast, their advisors, who are outsiders, can bring more objective counsel to a deal. As a result, the experience of desperate firms may be effective in tempering this poor judgment and allow acquirers to pay more appropriate prices for targets. The complexity of the potential relationships at work here suggests that the interplay between different types of acquisition experience is an important topic for continued investigation.

Limitations and Future Research

There are also several limitations to our study, which call for further investigation. First, we used a single industry design to eliminate confounding factors and to reduce contamination from our measures, but our single-industry study design and the industry conditions of the U.S. commercial banking industry may limit the generalizability of our findings. Hence future work should be done to replicate our results in other industries and demonstrate the robustness of our findings. Second, although we controlled for specific prior acquisition performance, which is likely to affect managers’ hubris about acquisitions, as well as overall firm performance (i.e., return on assets), we did not include other proxy variables for managerial hubris used in prior studies, such as media praise or CEO compensation (e.g., Hayward and Hambrick, 1997). Third, similar to Ingram and Baum (1997), we discounted experience variables to reflect the obsolescence of old experience and found consistent results using non-discounted experience variables. Yet both approaches are inherently ad hoc, and we did not directly estimate the discount rates of experience. Thus an interesting future empirical question is to what extent
recent versus older experiences affect subsequent firm behavior and under what conditions.

Our study also has significant practical implications for managers. Our findings suggest that managers are likely to pay too much for acquisitions when they have a strong desire to grow their firms. As Bruce Nalop (2007), CFO of Pitney-Bowes, put it, “Don’t shop when you’re hungry.” When managers in a firm are desperate and come to believe that they have limited choices in how to grow the firm and absolutely need to make an acquisition, they are more likely to shop poorly, at least with respect to the price they pay. In addition, managers should be aware of the limitations of their acquisition experience. We found that acquirers’ own experience was not as effective as the experience of advisors in mitigating the impact of low growth or high acquisition dependence on acquisition premiums. This implies that even seasoned corporate buyers may not be able to overcome pressures for growth that can lead to suboptimal decisions. To offset this tendency to overpay under conditions of low growth and acquisition dependence, it is wise for acquirers to draw on the advice of experienced advisors who can help keep acquisition premiums in check.

Finally, the results of our study may shed light on one of the most enduring debates in research on mergers and acquisitions: do acquisitions create value for the acquiring firms (see King et al., 2004, for a review)? As an acquirer overpays for an acquisition, the chance of creating value from the acquisition greatly diminishes. Yet many bidders continue to pay acquisition premiums that greatly exceed the market value of the target. The most common explanation in the management literature for paying high premiums has been CEO hubris (Roll, 1986; Hayward and Hambrick, 1997). Our theory of desperation provides an interesting new insight into why firms make acquisitions despite the high level of uncertainty and risk associated with them. Thus although the primary contribution of this study is to set forth a theory of desperation in the context of acquisitions, a secondary contribution is to provide a better explanation for the seemingly illogical strategic action of overpaying for an acquisition. Further research would benefit by exploring the underlying processes that lead firms to become desperate to grow through acquisition, including what these firms are attending to, how they search for solutions, and how they are willing to take on such substantial risk. Better understanding of the dynamics of desperation will enhance our theoretical understanding of what drives acquisition behavior and may help organizations refrain from overpaying for the deals they so desperately want to complete.

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