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Temporal Dynamics in Acquisition Behavior: The Effects of Activity Load on Strategic Momentum

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ABSTRACT Momentum theory suggests that acquisition experience leads to acquisition momentum in the form of a higher likelihood of subsequent acquisitions of the same type. However, this argument has been challenged theoretically and empirically. We reconcile conflicting predictions and findings of prior research and extend momentum theory by incorporating activity load as a novel causal mechanism to both replicate the base finding and explain deviations from it. We find that a high activity load due to increased acquisition activity acts as a counterforce to momentum, decreasing the likelihood of subsequent acquisitions of the same type. Moreover, we also find that the interplay of routines, cognitive frames, and activity load causes companies to alternate between different types of acquisitions – from small to large and from large to small – as management engages in attention modulation to preserve momentum. Taken together, our arguments and findings contribute to an improved understanding of temporal patterns of acquisition behaviour.

Keywords: activity load, Mergers and acquisitions (M&A), momentum theory, positional momentum, repetitive momentum, temporal dynamics

INTRODUCTION

The temporal patterns with which organizations engage in acquisitions are a central topic in research on acquisition behaviour (e.g., Hayward, 2002; Laamanen and Keil, 2008; McNamara et al., 2008; Shi et al., 2012; Shi and Prescott, 2011). One of the most researched arguments in this stream of research, derived from momentum theory (Amburgey and Miner, 1992), is that past acquisition behaviour increases the likelihood of future acquisitions (Amburgey and Miner, 1992; Baum et al., 2000; Collins et al., 2009) as experience with acquisitions leads to the development of *routines* and *cognitive*

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frames that increase the likelihood of subsequent acquisitions in the future (Amburgey and Miner, 1992). Some of the more recent research (Beck et al., 2008), however, has challenged this baseline prediction on methodological and theoretical grounds, suggesting that past activity should rather lead to a decreased level of subsequent activity. In line with this alternative prediction, researchers have found a decreasing probability of acquisitions following market entering acquisitions (Vermeulen and Barkema, 2001) and observed highly volatile temporal patterns that cannot be explained with momentum theory (e.g., Laamanen and Keil, 2008).

To reconcile these two contradicting views of the relationship between a firm's past acquisition behaviour and its subsequent acquisition activity, we extend momentum theory both in terms of theoretical mechanisms and empirical methodology. We argue that deviations from stable acquisition patterns are caused by the *activity load* that acquisition behaviour creates. Activity load refers to the managerial time and attention, financial resources, and other organizational resources consumed by an activity (Castellaneta and Zollo, 2015; Shaver, 2006). An increase in acquisition activity requires additional managerial resources that may create capacity constraints for future acquisitions (Shaver, 2006), reducing subsequent activity rather than maintaining or increasing it, as would have been predicted by traditional momentum theory.

In addition to providing an improved understanding of the role of activity load that has been overlooked in prior momentum research, we argue that when organizations simultaneously face the activity-enhancing effect of routines and cognitive frames and the activity-reducing effect of activity load, top management engages in attention modulation (Castellaneta and Zollo, 2015; Laureiro-Martínez et al., 2010; Laureiro-Martínez et al., 2015). Attention modulation refers to management's ability to selectively shift attention between simultaneous activities and modify the magnitude, timing, and form of attention to conserve attentional capacity. Accordingly, management switches attention between different types of activities representing different types of activity load. In the context of acquisitions, we find such attention modulation to occur between small and large acquisitions because the different types of acquisitions differ in terms of the types of managerial attention and organizational resources required (Ellis et al., 2011; Moeller et al., 2005).

We contribute to reconciling contradictory arguments and findings (Beck et al., 2008) regarding the core predictions of momentum theory (Amburgey and Miner, 1992; Beck et al., 2008) by identifying activity load as a boundary condition to the momentum-enhancing effects of routines and cognitive frames that have so far dominated momentum theorizing. We extend momentum theory from an explanation of stable or accelerated patterns of acquisition behaviour by providing an explanation of decelerating patterns and switching behaviour among different types of acquisitions. While activity load (Castellaneta and Zollo, 2015; Shaver, 2006) creates a counterforce to the momentum-enhancing effects of routines and cognitive frames, attention modulation (Castellaneta and Zollo, 2015; Laureiro-Martínez et al., 2010) allows us to understand how firms and their managers can deal with the opposing pressures for increased acquisitions arising from routines and cognitive frames and for decreasing acquisitions from activity load. Collectively, our findings contribute to an enhanced explanation of more complex behavioural patterns in acquisition activity.

Our paper also makes an important methodological contribution to momentum theory. We used a novel econometric approach that made it possible to disentangle longitudinal (within-firm) effects from cross-sectional (between-firm) effects (Certo et al., 2017; Ketokivi et al., 2021), which prior work on momentum theory has commonly not separated. Distinguishing between the between-firm and within-firm effects enabled us to disentangle the effects of activity load and momentum, thereby reconciling prior contradicting arguments on strategic momentum and contributing to an improved understanding of temporal patterns of acquisition behaviour.

THEORY AND HYPOTHESES

Momentum Theory and Patterns of Acquisitions

Momentum theory represents the longest standing and the most researched firm-level explanation of observable firm-level temporal acquisition patterns (Amburgey and Miner, 1992; Baum et al., 2000; Collins et al., 2009). According to momentum theory, experience with an activity contributes to the persistence of the activity over time. Two theoretical mechanisms underlie this effect. First, the experience that a firm accumulates over time leads to the formation of routines that become 'engines for further actions' (Amburgey and Miner, 1992, p. 336). Second, experience also leads to cognitive frames that position the activity as a solution to an ever-increasing class of problems in the minds of organizational decision makers (Kelly and Amburgey, 1991; Miller and Friesen, 1982), which further increases the likelihood that a firm will also engage in the activity in the future.

Momentum theory has been applied to explain recurring acquisition behaviour, and it has received substantive empirical support, albeit often in tandem with other organizational learning processes (e.g., Baum et al., 2000; Haleblian et al., 2006). We build on Amburgey and Miner's (1992) core argument that, on average, prior acquisitions lead to a higher likelihood of subsequent acquisitions. In our baseline hypothesis, we further refine this argument and propose that it is experience in a specific acquisition size category that increases the likelihood of additional transactions made *in the same size category*. We argue that the development of cognitive frameworks and routines is specific to an acquisition category. Small and large acquisitions pose different challenges to the acquiring firm (e.g., Duhaime and Baird, 1987; Duhaime and Schwenk, 1985; Ellis et al., 2011; Heimeriks et al., 2012).

Large acquisitions represent transactions that pose substantial strategic and operational risks to the managers and organizations involved (e.g., Moeller et al., 2005). These acquisitions frequently require both the acquirer and the target to undergo substantial changes in their structures and processes and tend to occupy the attention of top management for a substantial period of time (Yu et al., 2005). In contrast, small acquisitions occupy the top management's attention primarily during the deal-making stage and often require only limited adjustments to the structures and processes of the acquiring firm during integration (Singh and Zollo, 1998), which is typically delegated to business units. Due to their small size and lower complexity, they generally require significantly less top management time and attention than large acquisitions.

We argue that companies that have become accustomed to buying small companies on a continuous basis have developed optimized processes and manuals for guiding organizations to effectively perform these acquisitions over time. In a similar vein, familiarity with large acquisitions and the existence of specialized integration practices and structures increase the likelihood of further large acquisitions in the future. For instance, Dow Chemicals acquired Union Carbide in 1999, thereby creating the basis for the mental models, routines, and structures that later led Dow Chemicals to engage in other large mergers and acquisitions (M&As), such as the Rohm & Haas and DuPont mergers (e.g., Bingham et al., 2015).

Compared to other firms that either have not developed familiarity with and optimized processes for small acquisitions or that have never conducted a large acquisition, firms with mental models and routines for specific types of acquisitions have a higher likelihood of engaging in similar kinds of acquisitions in the future. For instance, a firm that has consistently performed multiple small acquisitions each year has most likely developed optimized processes and cognitive frames to evaluate, negotiate and integrate small acquisitions, whereas a firm that has never (or only rarely) done any acquisitions has not needed to develop them. Hence, having experience with small acquisitions from the past makes the first firm more likely to engage in additional small acquisitions in the future than the second firm.

In summary, drawing on momentum theory, we predict as our baseline hypothesis that an acquirer's comparative experience of a specific acquisition type, relative to other firms, is positively related to further acquisitions of the same type.

Baseline Hypothesis 1a. The level of the acquiring firm's large acquisition activity relative to other firms is positively related to maintaining or increasing subsequent large acquisition activity.

Baseline Hypothesis 1b. The level of the acquiring firm's small acquisition activity relative to other firms is positively related to maintaining or increasing subsequent small acquisition activity.

Hence, with our baseline hypotheses, H1a and H1b, we examine the effects of a focal firm's relative past experience with different types of acquisitions in relation to the acquisition experience of other firms when predicting the likelihood of subsequent acquisitions (between-firm effect). In our second set of hypotheses, H2a and H2b, we add the element of activity load and examine the effects of a focal firm's own past acquisition activity on the likelihood of its subsequent acquisition activity (within-firm effect). Since our empirical estimation method enables us to test both effects simultaneously (both within- and between-firm effects), the between-firm effect (H1a and H1b) enables us to capture the familiarity (relative to other firms) of different types of activity, and the within-firm effect (H2a and H2b) enables us to capture the activity load caused by past activity as we will outline below.

Activity Load

While momentum theory focuses on the activity-sustaining effects of the cognitive frames and routines developed based on previous experience, without a counterforce, it may be understood to imply an ever-increasing number of acquisitions. Critics of momentum theory (Beck et al., 2008) have challenged this core argument and suggested that past activity may even lead to a decreased level of subsequent activity. We argue that these conflicting views may be reconciled by better accounting for the temporal patterns through which this experience accumulates over time.

Activity load. We argue that a high level of acquisition activity creates activity load (Castellaneta and Zollo, 2015) that will decrease the likelihood of subsequent acquisition activity, thereby leading to a counterforce to the momentum effect predicted by momentum theory. Castellaneta and Zollo (2015) introduced the concept of 'activity load' to describe situations where the number of activities that a firm manages saturates its limited attention capacity and weakens its ability to manage them. Building on the attention-based view (Ocasio, 1997; Ocasio, 2011), the authors argued and found that a high activity load has a negative effect on performance in the context of private equity investments. When elaborating on the generalizability of their findings, the authors noted that serial acquirers often also engage in high levels of simultaneous activity, requiring them to manage '*a heavier activity load*' (Castellaneta and Zollo, 2015, p. 142).

Activity load causes information overload (e.g., Eppler and Mengis, 2004; O'Reilly, 1980), which limits the amount of attention available for individual activities and lowers the performance of a focal activity. Castellaneta and Zollo (2015) also noted that the development of routines might help reduce activity load by helping management automate certain tasks, suggesting that the routines could partially counter the negative effects of activity load. We position the development of routines and the growth of the activity load against each other. We argue that a high level of activity load acts as a counterforce to the effect of routines favouring the continuation of acquisition activity.

Acquisition activity and activity load. Acquisitions consume a significant amount of managerial time and attention and financial and other organizational resources (Castellaneta and Zollo, 2015; Shaver, 2006). Given that organizations have a situationally limited supply of attention capacity (Ocasio, 1997) and other organizational resources (Penrose, 1959), increases in acquisition activity can cause bottlenecks (Castellaneta and Zollo, 2015; Shaver, 2006). As noted by Ocasio and Joseph (2005, p. 42), '*Decision makers are also limited by their activity load or how much they can attend to at a given point in time*'. Due to increasing activity load, information processing requirements may exceed the management's information processing capacity (Castellaneta and Zollo, 2015). When confronted with activity (over)load, managers are likely to reduce the level of future activity to create a lower information load (Hambrick et al., 2005).

In addition to managerial time and attention, activity load can also strain other organizational resources. Hence, intense acquisition activity can create situational bottlenecks that may limit further increases in acquisition activity until the activity load is reduced or additional capacity is created (Penrose, 1959; Shaver, 2006). Consistent with this line of reasoning, 65 per cent of the acquisition directors interviewed for a Deloitte (2015) study noted that they would drop a deal if sufficient management attention were not available.

One of the interviewees explained that '*Right now we don't do any deals, we really need to get done with IT integration before we can do any further acquisitions*'. Similarly, another interviewee noted, '*To be honest; we had to postpone several internal initiatives, because we were just too busy integrating the businesses we had bought*'.

We argue that both large and small acquisitions increase activity load. It is well established that large acquisitions represent a major activity load not only for the top management team (TMT) but also for the entire organization due to the extensive integration activities involved. Although acquiring firms that have previously performed large acquisitions tend to develop dedicated resources and capabilities (e.g., a project management office (PMO)) for overseeing such major integration processes (e.g., Bingham et al., 2015; Lajoux, 2006) and often also use external consultants (Golubov et al., 2012; Sleptsov et al., 2013), the multiple integration tasks require the attention of managers at all levels of the organization in addition to their everyday work (Yu et al., 2005) and can put a strain on even the most experienced acquirers. Thus, it is not surprising that the workload can at times become quite overwhelming, as demonstrated by the following quote by a chief financial officer (CFO) who we interviewed regarding a large merger that his firm was in the process of integrating:

> And, so what we're asking ourselves to do, I mean it's sort of like – you know – here's a huge cake, please eat this cake. And, you get two-thirds of the way through it, and somebody says: 'Well here's a second cake, would you eat this one at the same time'. – So, as you're working on that first one, you start taking bites out of the second one. And, all of a sudden, somebody brings a third one along, and you say: 'Wait a minute, you know. I can only eat so much cake at a time here'. (CFO on the integration of two organizations with 20,000 and 40,000 employees)

Given such extended strains on management's capacity, we argue that top managers respond by deferring further large acquisitions (Hambrick et al., 2005; Wright, 1974) to 'take a breath' from the intensified activity load caused by this type of acquisition. Large acquisitions are also likely to cause financial resource constraints, which further reduces the likelihood of subsequent large acquisitions (Shaver, 2006). Hence, although large acquisition experience is generally positively related to subsequent large acquisitions due to established routines and cognitive frames, as hypothesized previously, we argue that *recent* large acquisitions cause a high activity load that is negatively related to subsequent large acquisitions.

While a high activity load is easy to understand in connection with large acquisitions, we argue that conducting a large number of small acquisitions can also lead to a high activity load, especially when there is an increase in the acquisition activity relative to what the organization has previously managed. While for large acquisitions, every acquisition creates a substantial activity load, in the case of small acquisitions, it is typically the number of deals that leads to a high activity load. In the pre-deal stage, a large number of small deals causes a high activity load both for dedicated acquisition personnel and the TMT in finding suitable acquisition candidates and conducting due diligence and negotiation processes. Moreover, it is not only the completed deals that are time-consuming but also the negotiations with other acquisition candidates for transactions that are considered for acquisition. For instance, a chief executive officer (CEO) who we interviewed suggested that his firm screened and negotiated with, on average, 8–10 firms per completed transaction. Thus, if this proportion is similar across firms, this means 80–100 pre-deal screening, negotiation, and due diligence processes for every ten firms acquired.

The screening of acquisition targets requires time, and it is commonly necessary for the TMT members to have several meetings with the seller and the target firm's CEO and TMT during the negotiation stage. While one could argue that in smaller acquisitions, the CEO of the acquiring company does not necessarily even need to meet the sellers or the TMTs of the target firm before closing the deal, prior research suggests that CEOs are typically also involved in the negotiation and decision stages of smaller acquisitions (Graham et al., 2015). For example, one of the heuristics that Cisco Systems used in acquisitions was that it would not buy a firm if CEO John Chambers would fail to convince the target company ('the Cisco sell') about the idea of becoming part of Cisco (Paulson, 2001). Hence, if a company acquires multiple small firms each year, the total number of acquisition targets in its pipeline is a multiple of that and can lead to a high activity load for the management of the acquiring company.

The following comment provided by an interviewee from an actively acquiring firm illustrates this logic: '*We stopped doing those really small, opportunistic deals. They are just too much work*' (Deloitte, 2015). Similarly, as put by the CEO of Sun Pharma after being asked about the possibility of making more small acquisitions: '*We are very cognizant of one issue, [which is] that every acquisition requires lot of time for consolidation, so we don't want to do too many small acquisitions*'. In addition, a strategy director of an actively acquiring large pharmaceutical company we interviewed noted that after the company had made a large number of small acquisitions, the in-house M&A experts became so tied up in them that they no longer had time to participate in conferences and other events to identify potential new targets for further small acquisitions. Taken together, we hypothesize that the activity load associated with high levels of recent either small or large acquisition activity reduces subsequent acquisition activity in the same size category (i.e., negative repetitive momentum effect as captured by the within-firm effect).

Hypothesis 2a. Increases in large acquisition activity relative to a firm's own past acquisition activity reduce the subsequent acquisition activity in large acquisitions.

Hypothesis 2b. Increases in small acquisition activity relative to a firm's own past acquisition activity reduce the subsequent acquisition activity in small acquisitions.

Interactive Effects of Routines, Cognitive Frames, and Activity Load

While we expect, on the one hand, routines and cognitive frames to drive the continuation of acquisition activity (Amburgey and Miner, 1992) and, on the other hand, activity load to reduce the likelihood of further acquisitions in the same size category (Castellaneta and Zollo, 2015), the combined effect is likely to be determined by the relative strengths of the two effects. Although one could argue that with a high activity load, subsequent acquisition activity would be reduced or discontinued, both the internal and external pressures for momentum may be so high that management simply cannot do so (Kim et al., 2011; McNamara et al., 2008). For example, ABB's CEO, Fred Kindle, was fired in 2008 for his lack of acquisitions ('ABB Board Was Irked by Kindle's Lack of Deals', The Wall Street Journal, 19 Feb 2008).

To address these simultaneous pressures for continuation and discontinuation of the company's acquisition momentum, top management can resort to attention modulation (Castellaneta and Zollo, 2015; Laureiro-Martínez et al., 2010; Laureiro-Martínez et al., 2015). Castellaneta and Zollo (2015) presented the idea of attention modulation in their study on how private equity firms dealt with the activity load caused by many simultaneous investments. They defined attention modulation as '*the ability of the group of decision makers to selectively shift attention through various simultaneous activities, screening out those with lower priority and modulating the magnitude, timing, and form of attention to channel to each selected activity*' (p. 153). The concept builds on related concepts in psychology (Posner and Presti, 1987) and resembles the concept of executive attention in the attention-based view. Although the concept of executive attention is similarly based on cognitive psychology as an individual's cognitive ability to '*to freely attach, detach, and reattach attention to a stimulus*' (Ocasio, 2011, p. 1289), Ocasio notes that the concept is likely to be particularly applicable for strategic decision-making (Ocasio, 2011). Similarly, attention modulation capability can be seen as an extension of the concept of executive attention from the individual-level to a larger group of decision makers.

Building on the attention modulation logic, we argue that a high activity load in one type of activity causes not simply a reduction or discontinuation of that activity but also a switch to another type of activity that helps management accomplish the same goal. Consistent with this, Hambrick et al. (2005) found that in Bank One, CEO John McCoy reacted to the high pressure arising from the acquisition of several small- and medium-sized banks by switching to fewer larger acquisitions with the purchase of First USA. Although management could also switch attention from acquisitions to alliances or to organic growth, we argue that acquisitive managers are likely to continue to view acquisitions as one of their preferred business development options due to their established cognitive frames and acquisition routines that have been built based on their prior acquisition activity (Amburgey and Miner, 1992). In addition to management's familiarity with acquisitions, external pressures from the financial market may also pressure executives to sustain momentum, and instead of discontinuing acquisition activity, they will shift their focus to different types of acquisitions that will help alleviate activity load. As noted in the case of Bank One, which had been rewarded by the stock market due to its continuous growth, management simply could not stop acquisition activity despite the high activity load caused by the high number of small acquisitions. Instead, the management chose to reduce the number of transactions and focus on fewer larger acquisitions (Hambrick et al., 2005).

Building on the concept of attention modulation (Castellaneta and Zollo, 2015), we expect companies, on the one hand, to switch to larger acquisitions when they experience a high activity load due to a large number of small acquisitions and, on the other hand, to switch to smaller acquisitions when they experience a high activity load due to large acquisitions. Due to the different types of activity loads associated with the different types of acquisitions, we argue that the switch from small to large acquisitions is driven by different capacity constraint considerations than the switch from large to small acquisitions. While every acquisition causes some activity load in the pre-deal and post-deal stages, the relative activity load per acquisition and its distribution over these stages differ across the two types of acquisitions. In smaller acquisitions, the activity load is typically associated *relatively* more with the deal screening and decision-making stages, while in larger acquisitions, the activity load is associated *relatively* more with complex integration processes. Given that acquirers tend to analyse a large number of potential targets for every company acquired, making several small acquisitions can cause a very high activity load in the pre-deal stage, while the acquired firm causes only a fraction of the activity load in the post-deal stage since, unlike in large acquisitions, the integration of small acquisitions can be delegated down to business units.

With regard to the switch from small to large acquisitions, we argue that the high activity load caused by high levels of pre-deal activity (when organizations acquire high volumes, at times even reaching tens of small acquisitions) leads top management to consider switching to fewer but larger deals to reduce the type of workload caused by the smaller acquisitions. Similarly, as in the case of Bank One, an M&A director we interviewed noted, '*You cannot continue doing more and more of these small deals given all the work they cause. At some point, you need to do some big deals to move the needle*'. While one could argue that a few large acquisitions cause the same amount of work as that associated with a large number of smaller acquisitions, the switch is based on the alleviation of the particular activity load associated with the pre-deal phase causing more strain (Hambrick et al., 2005). Hence, the switch to fewer large acquisitions helps reduce the pre-deal activity load for the TMT and dedicated deal-making staff and replaces it with fewer larger deals that cause load mainly in the post-deal phase for the division and business unit heads alongside the TMT who is overseeing the progress of the integration process.

With regard to the switch from large to small acquisitions, although the activity load associated with the integration of large acquisitions can be significant, management continues to face pressures to show continuous growth and continue to develop the business. Therefore, it is not possible for a company to concentrate only on integration for a few years. Since smaller acquisitions do not cause a similar strain on the integration capacity of the firm (Lajoux, 2006), they provide a way for management to show continuous growth (Haleblian et al., 2017). Moreover, low initial levels of small acquisition activity cause only a limited additional activity load for top management and can be at least partially delegated to the deal-making team of the dedicated M&A function that is driving deal making and has capacity to engage in further small deals since it is commonly not involved in the integration of acquisition targets (Deloitte, 2015). Take for instance the acquisition of Alcatel-Lucent by Nokia in 2015 as an example. Given the size of the transaction, integration took several years and occupied much of management's attention. However, at the same time, the pressure to grow in solutions business and to integrate further technology led Nokia management continue to consider acquisitions of a much smaller size to further develop the business. In doing so, Nokia was able to draw upon a strong M&A function and the deep experience it had acquired over time. Similarly, a CFO in charge of a large merger commented on the pressure to move forward while a major merger integration process is still ongoing:

'*We are under way to consolidate those 52 SAP systems. Is it hard? Yes. Are there risks? Absolutely. But it's under way. – The subsequent transformation stage is barely under way at all. And so the risk is in not moving quickly enough, but as we move quickly enough on that, making sure we still continue, we don't take our eye off the integration. In other words we don't ease our foot on the gas pedal*'.

The example of Cisco Systems provides another illustration of this dynamic (e.g., Paulson, 2001). Cisco exhausted its capacity for additional large acquisitions due to a large number of large acquisitions made in the internet bubble before the turn of the millennium. However, this did not lead to a complete discontinuation of its acquisition activity. Instead, Cisco's management's familiarity with the use of acquisitions for growth and the company's established acquisition routines simply led it to continue its acquisition activity with smaller acquisitions before again later switching to larger platform acquisitions that it had already become familiar with. Hence, switching the focus to smaller acquisitions enabled Cisco Systems to take a 'breathing break' from the larger acquisitions but still showed continuous growth and development of the business.

Taken together, we argue that because the activity load caused by small acquisitions is different from the activity load caused by large acquisitions and related to different situational capacity and resource constraints, the top management of the acquiring firm can modulate its attention capacity by switching between these different activity types. This allows management to maintain the acquisition momentum caused by acquisition routines and cognitive frames while at the same time dealing with the constraints posed by the activity load.

Hypothesis 3a. Increases in large acquisition activity relative to a firm's prior activity level lead the firm to switch from large to small acquisitions such that subsequent large acquisition activity is reduced and subsequent small acquisition activity is increased.

Hypothesis 3b. Increases in small acquisition activity relative to a firm's prior activity level lead the firm to switch from small to large acquisitions such that subsequent small acquisition activity is reduced and subsequent large acquisition activity is increased.

METHODS

Sample

We compiled a panel dataset of firms from the S&P 1500 index for the period between 1997 and 2006.[1] We collected accounting and financial data from the COMPUSTAT database. For the acquisition data, we used Thomson Reuters's Securities Data Company (SDC) Platinum database, which is one of the most frequently used data sources for acquisition research and provides comprehensive information about M&As (Finkelstein and Haleblian, 2002; Hayward, 2002). We collected data related to TMT turnover, CEO changes, CEO compensation, and stock ownership from S&P's ExecuComp database. For information regarding board size and composition, we used the RiskMetrics

Directors database, which is a widely used source of data related to board composition that provides suitable coverage of S&P 1500 firms (e.g., Masulis and Mobbs, 2014). When explaining momentum in acquisitions, the analysis is limited to the population of companies that have at some point made at least one acquisition.

Dependent Variables

In our analysis of strategic momentum, we follow Amburgey and Miner (1992, p. 335), who defined strategic momentum as '*the tendency to maintain or expand the emphasis and direction of prior strategic actions in current strategic behavior*' and to create a measure to determine whether the level of focal activity is maintained or increased versus decreased in the focal period. We measure the occurrence of completed acquisitions within annual spells and distinguish between two dependent variables: *momentum in large acquisitions* and *momentum in small acquisitions*.

To create a threshold to differentiate between large and small acquisitions, several approaches can be used. Some researchers have chosen an absolute cut-off point to distinguish large acquisitions, such as US$100 million (e.g., Ellis et al., 2011; Hayward and Hambrick, 1997) or US$1 billion (e.g., Ghemawat and Ghadar, 2000). The challenge in using an absolute cut-off size is that for large firms, such as General Electric and Procter & Gamble, acquisitions involving billions of dollars may continue to be relatively small, whereas for smaller firms, such acquisitions could represent an escalation to abnormally large acquisitions. To overcome this issue, other studies have measured the size of an acquisition relative to that of the acquiring firm (e.g., Finkelstein and Haleblian, 2002; Hayward, 2002; Kusewitt Jr., 1985). In our main analyses, we follow the latter practice and use the mean of the relative acquisition size in the sample as a cut-off point (in our sample, this equals 8.0 per cent of the asset value of the acquiring firm). We define acquisitions above the threshold as large acquisitions and those below the threshold as small acquisitions. With this cut-off, the small acquisitions in our sample are approximately eight times as frequent as the large acquisitions (alternative size cut-offs are reported in our robustness tests). We create two binary measures of *momentum in large (small) acquisitions* that assume a value of '1' if the sum of the monetary value of a firm's large (small) acquisitions in a given year is equal to or larger than the total monetary value of its large (small) acquisitions during the previous year or a value of '0' if the sum of the monetary value of a firm's large (small) acquisitions during a given year is smaller than the monetary value of its large (small) acquisitions during the previous year or is zero. To distinguish between the two dependent variables, we do not include the value of large acquisitions in the calculation of the measure of *momentum in small acquisitions*, and vice versa. Alternative operationalizations were tested in our robustness tests (Appendix Table A.I).

Independent Variables

We use four independent variables (*Comparative large (small) acquisition activity* and *Increase in large (small) acquisition activity*) to test our hypotheses involving both the acquisition activity levels corresponding to positional momentum (between-firm effects) and within-firm temporal dynamics in acquisition behaviour corresponding to repetitive momentum (within-firm effects), and we use the xthybrid command in Stata developed by Schunck and Perales (2017), and equivalent manual calculations (Schunck, 2013), to create four independent variables of interest, including two variables addressing large acquisitions and two variables addressing small acquisitions. *Comparative large acquisition activity* is the between-firm component (time-invariant mean),[2] whereas an *increase in large acquisition activity* is the within-firm component (demeaned observations). *Comparative small acquisition activity* and an *increase in small acquisition activity* are calculated similarly based on acquisitions smaller than the size cut-off. The same acquisition size threshold used in the dependent variables is used in our definition of the independent variables. In contrast to the dependent variables that measure the total monetary value, for the independent variables, we use the number of large (small) acquisitions performed during the previous three-year observation window.[3] By explicitly distinguishing the within-firm versus between-firm components of acquisition activity, we respond to recent calls for a more fine-grained distinction between between-firm and within-firm effects in longitudinal data analyses (Certo et al., 2017; Ketokivi et al., 2021), which is also needed to better understand the mechanisms affecting momentum.

Control Variables

We control for several potential alternative explanations of acquisition behaviour.

Learning from performance feedback. To account for the effects of performance feedback on acquisition behaviour found in prior studies (Haleblian et al., 2006), we control for two forms of performance feedback. Acquisition performance feedback is operationalized based on the mean cumulative abnormal returns of prior acquisitions within the commonly used event window of five trading days before and after an acquisition to estimate abnormal returns (Haleblian and Finkelstein, 1999). We aggregate the cumulative abnormal returns by averaging these returns on an annual basis. This variable is used to partial out the performance feedback-based learning mechanism (Kim et al., 2015). To control for the effects of firm-level performance feedback on acquisitions (Iyer and Miller, 2008), we control for firm performance relative to aspirations. Consistent with prior studies (e.g., Greve, 2002), we measure aspiration performance by comparing each firm's performance to its historical performance using the recursive formula: $P_t - A_t$ where $A_t = aP_{t-1} + (1 - a)A_{t-1}$, P_t is the return on assets (ROA) at time t, P_{t-1} is the ROA during the previous year, $a = .5$, and A_{t-1} is the aspiration level during the previous year. Consistent with the literature on performance aspirations (Shinkle, 2012), we use a spline function (*performance above (below) aspirations*).

Growth desperation. The escalation to large acquisitions can also be fuelled by the desire to hasten growth if a firm fails to fulfil its growth aspirations (Kim et al., 2011). Similar to Kim et al. (2011), we use a recursive formula: $G_t - A_t$ where $A_t = aG_{t-1} + (1 - a)A_{t-1}$, G_t to calculate growth aspiration. For our S&P 1500 sample firms, year-to-year change in sales is an appropriate measure of growth and therefore used in the formula. We again use the commonly used spline function (Shinkle, 2012) to create two variables: *growth below (above) aspirations*.

Managerial overconfidence. Another potential alternative explanation for acquisition behaviour may be management's general 'hubris' or overconfidence (Malmendier and Tate, 2005, 2008). For *managerial overconfidence*, we use the measure developed by Malmendier and Tate (2005, 2008) and refined by Campbell et al. (2011). It captures whether a CEO exercises his or her stock options early or late; exercising options late signals higher confidence. A value of 1 is assigned if 67 per cent of the CEO's exercisable in-the-money options are not exercised and 0 otherwise.

Governance. There is extensive literature on the relationship between a firm's governance practices and its risk taking (e.g., Devers et al., 2007). Independent boards are more likely to influence CEOs' strategic decisions. Therefore, we control for *board independence*, measured as the percentage of non-affiliated directors on a firm's board (Pearce and Zahra, 1992). Prior research has also argued that smaller boards may monitor management more vigilantly (Zahra et al., 2000). Therefore, we control for *board size* measured as the number of board members (Kroll et al., 2008). A CEO's pay structure may influence her risk preferences. We measure *CEO stock-based compensation* as the annual value of stock and stock options divided by the annual total compensation (Souder and Bromiley, 2012). Because strategic changes at the firm may coincide with either CEO or TMT turnover, we control for both. The control variable for *CEO succession* assumes a value of 1 if the CEO changed from the previous year and 0 otherwise (Shin and You, 2017). Following prior research (e.g., Fredrickson et al., 2010; Messersmith et al., 2014), *TMT turnover* is measured as the yearly turnover of the four non-CEO highest-paid employees.

Slack resources. Prior research suggests that acquisition behaviour may be affected by a firm's slack resources, as they enable the firm to engage in a broader range of strategic actions (George, 2005). We control for the *firm debt-to-equity ratio* as an inverse measure of firm slack resources (Chatterjee and Wernerfelt, 1991; Iyer and Miller, 2008).

Imitation and exhaustion of acquisition targets. To ensure that spill-overs from the acquisition activity of industry peers such as acquisition waves (McNamara et al., 2008) are not driving our results, we control for industry acquisition activity by including the industry averages of the small acquisition experience and large acquisition experience variables.

We also control for several other variables that may affect firms' acquisition behaviour. *Firm stock market performance* may be related to the willingness, ability, and motivation of decision makers to pursue acquisitions (Sanders, 2001). Our measure of firm performance is a firm's total return per share with dividends reinvested (see, e.g., Deutsch et al., 2007). We control for *firm size* because of its relationship to risk taking (e.g., Miller et al., 2002) by using the log of the number of employees, which is a commonly used measure (e.g., Puranam et al., 2009). We control for firm risk because a firm's risk profile may influence acquisition decisions. For *firm risk*, we use the Black and Scholes (1973) volatility parameter (Deutsch, 2007). Diversification is one of the main motives for acquisitions. To control for *firm diversification*, we use the Jacquemin-Berry entropy index

(Palepu, 1985). Large cross-border acquisitions are often more complex and may deplete managerial slack capacity (Shimizu et al., 2004). To control for the *ratio of cross-border acquisitions*, we calculate the percentage of foreign acquisitions of all acquisitions larger than the threshold described in the discussion of the dependent variable over a three-year window.

Finally, we also incorporate *year dummies* into the models. The use of year dummies is important in cross-section dominated datasets because they help to control for potential contemporaneous correlations (Certo and Semadeni, 2006). Together with a regression specification that controls for unobserved heterogeneity, these firm- and industry-level controls should help disentangle our hypothesized effects from potential alternative explanations. We define all the variables used in the main analyses and their alternative operationalizations in Table A.I in the Appendix.

Estimation Procedure

Until recently, empirical studies investigating strategic momentum have applied continuous-time event history models that did not account for unobserved heterogeneity (Beck et al., 2008). In criticizing prior strategic momentum research, Beck et al. (2008) demonstrated that after controlling for unobserved time-invariant firm heterogeneity (by using a fixed-effects model), firms exhibit behaviour opposite to the repetitive momentum hypothesis and prior empirical findings. Given this finding, Beck et al. (2008) advocated for the use of discrete-time analyses that enable the use of a fixed-effects panel regression to test momentum predictions. However, although fixed-effects logit regression controls for time-invariant unobserved heterogeneity and enables consistent estimates of within-firm effects, this approach is not without limitations. In our context, a particularly important limitation of the fixed-effects model is that it does not allow for the simultaneous estimation of between-firm effects (Certo et al., 2017; Schunck and Perales, 2017), which is critical because our theoretical interest and hypotheses include both within-firm effects and between-firm effects.

Therefore, we apply the recently developed hybrid approach (Perales and Schunck, 2016; Schunck and Perales, 2017) for generalized linear mixed models (our dependent variable in our discrete-time event history analysis is a binary variable of momentum). This approach is a new variant of the method developed by Mundlak (1978) that is used to capture the between-unit variation separately from the within-unit variation. Therefore, we use the following regression equation: $y_{it} = \propto + \beta_1 x_{it} + \beta_2 \overline{x}_i + u_i + \varepsilon_{it}$, where x_{it} is a series of time-variant variables and $\overline{x}_i$ is the time-invariant mean of unit *i*. In this hybrid approach, the unit mean is subtracted; thus, any collinearity between x_{it} and $\overline{x}_i$ is removed, and the estimates are more stable and precise. We use the xthybrid command in Stata, which generalizes this hybrid approach to generalized linear mixed models (Perales and Schunck, 2016; Schunck and Perales, 2017). This hybrid model allows for the time-varying variable to be interpreted purely as a within-firm effect (Rabe-Hesketh and Skrondal, 2009; Schunck and Perales, 2017) while unveiling the between-firm components relevant for a full understanding of momentum in acquisition behaviour (in fixed-effects models, the between-firm components are hidden). In fact, the coefficient of the within-firm component in the xthybrid formulation is theoretically identical to that produced in a fixed-effects model in linear models and approximately identical to that produced in generalized linear mixed models such as ours (Schunck and Perales, 2017). Notably, the Mundlak method has been increasingly used as a tool in strategic management research (e.g., Ejermo and Schubert, 2018; Ghose and Han, 2011; Ody-Brasier and Vermeulen, 2014; Reitzig and Maciejovsky, 2015; Reitzig and Puranam, 2009), and the hybrid approach has been advocated for in the management research methods literature (Certo et al., 2017; Ketokivi and McIntosh, 2017).

RESULTS

Table I provides the descriptive statistics, including the means, standard deviations, and correlations of the raw variables before decomposing them into within- and between-firm components. The mean of 0.13 of the momentum in small acquisitions implies that 13 per cent of the firm-year observations indicated that if the focal firm had made small acquisition(s) during the previous year, it made at least the same volume of small acquisitions during the focal year. Similarly, the mean of the momentum in large acquisitions of 0.05 implies that 5 per cent of the firm-year observations indicate that if the focal firm had made large acquisition(s) during the previous year, it made at least the same volume of large acquisitions during the focal year.

Most correlations among our variables are relatively low. Nevertheless, to further alleviate multicollinearity concerns, we analysed the variance inflation factor (VIF) values of the variables decomposed into within-firm and between-firm components. Except for the within-firm and between-firm components of the control variable measuring firm stock market performance, all variables were clearly below the typically recommended threshold value of 10 (Kutner et al., 2004). In a separate test, using a manual implementation of a hybrid regression, removing the between-firm component of this control variable eliminated the multicollinearity problem. However, as the control variable did not affect the estimates of any variables of interest, both the within-firm and between-firm components of all variables were retained for consistency.

Table II reports the results of the regression analyses. In Models 1–3, we address activity in large acquisitions, and in Models 4–6, we address activity in small acquisitions. The results of our regression analyses are reported using odds ratios (i.e., exponentiated coefficients) to facilitate the interpretation of the effect sizes. We introduce all control variables in Models 1 and 4. In Model 2, we introduce two independent variables, i.e., *comparative large acquisition activity* and *increase in large acquisition activity*, representing the between-firm and within-firm components of large acquisition activity. In Model 5, we introduce the two independent variables, i.e., *comparative small acquisition activity* and *increase in small acquisition activity*, representing the between-firm and within-firm components of small acquisition activity. Models 3 and 6 also include the cross-size variables; thus, the small acquisition variables in Model 3 explain the

Table I. Descriptive statistics and correlations

Variable	*Mean*	*S.D.*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*
1. Momentum in large acquisitions	0.05	0.22																						
2. Momentum in small acquisitions	0.13	0.34	0.04																					
3. Large acquisition activity	0.37	0.71	0.12	0.16																				
4. Small acquisition activity	2.84	6.22	0.10	0.20	0.13																			
5. Acquisition performance feedback	0.00	0.05	0.00	−0.01	0.01	0.00																		
6. Performance above aspirations	2.43	4.96	0.02	−0.01	−0.02	−0.06	−0.01																	
7. Performance below aspirations	−2.18	8.14	0.03	0.05	−0.09	0.02	−0.01	0.13																
8. Growth above aspirations	0.08	0.20	0.02	0.01	0.10	−0.02	0.02	0.05	0.01															
9. Growth below aspirations	−0.15	1.66	0.01	0.01	0.00	0.01	0.00	0.01	0.04	0.03														
10. Managerial overconfidence	0.31	0.46	0.06	0.09	0.08	0.06	0.02	0.07	0.08	0.05	0.01													
11. Board independence	0.60	0.16	0.00	0.03	−0.03	0.03	−0.03	−0.04	0.05	0.01	0.04	−0.06												
12. Board size	9.87	2.66	0.00	0.08	−0.05	0.17	−0.01	−0.07	0.12	0.01	0.00	−0.05	0.21											
13. CEO stock-based compensation	0.43	0.29	0.05	0.06	0.09	0.07	−0.03	−0.01	−0.07	0.02	0.00	0.11	0.06	0.02										
14. CEO succession	0.13	0.33	−0.01	−0.01	0.00	0.00	0.00	0.03	−0.04	0.00	0.01	−0.09	0.01	0.01	0.10									
15. TMT turnover	1.07	0.89	0.00	−0.01	0.06	0.00	−0.01	−0.02	−0.09	0.01	0.00	−0.05	0.03	0.02	0.07	0.18								
16. Firm debt-to-equity ratio	1.89	25.09	0.00	0.01	0.00	0.02	−0.03	−0.01	−0.01	0.00	0.00	0.01	−0.01	0.04	0.00	0.00	0.00							
17. Firm stock market performance	15.17	51.15	0.04	0.04	−0.04	−0.02	0.05	0.17	0.19	0.13	0.03	0.28	−0.01	−0.02	0.00	−0.02	−0.05	0.00						
18. Firm size	1.89	1.55	0.00	0.15	−0.02	0.30	0.00	−0.10	0.12	−0.07	0.05	0.04	0.11	0.43	0.11	0.02	0.06	0.00	−0.02					
19. Firm risk	0.40	0.20	−0.01	−0.04	0.09	−0.10	0.01	0.11	−0.31	0.03	−0.06	0.02	−0.14	−0.40	0.19	0.03	0.10	−0.02	−0.01	−0.29				
20. Firm diversification	0.52	0.55	0.03	0.12	0.01	0.21	0.00	−0.08	0.03	0.01	0.02	−0.07	0.16	0.21	0.00	0.02	0.05	0.00	−0.04	0.24	−0.15			
21. Ratio of cross-border acquisitions	0.27	0.94	0.08	0.13	0.11	0.68	0.01	−0.02	0.04	0.00	0.01	0.06	0.01	0.12	0.05	0.01	0.02	0.01	0.00	0.23	−0.08	0.15		
22. Industry's small acquisition activity	2.84	1.26	0.07	0.10	0.10	0.20	0.01	0.02	−0.03	−0.03	0.01	0.04	−0.02	−0.02	0.07	0.00	0.02	0.00	0.00	0.05	0.08	0.22	0.15	
23. Industry's large acquisition activity	0.37	0.16	0.11	0.09	0.22	0.09	0.01	0.12	−0.13	0.04	−0.01	0.08	−0.05	−0.25	0.19	0.01	0.05	−0.03	0.03	−0.15	0.37	−0.01	0.06	0.46

Note: N = 6631. Correlation coefficients above |0.024| are statistically significant at the 5% level. These statistics are based on raw variables before dividing the variables into within−firm and between−firm components in the regression analyses.

Table II. Momentum in large and small acquisitions

	Momentum in large acquisitions			*Momentum in small acquisitions*		
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Comparative large acquisition activity (between–firm component)		3.275***	3.296***			2.103***
		(0.304)	(0.308)			(0.170)
Increase in large acquisition activity (within–firm component)		0.497***	0.481***			1.390***
		(0.052)	(0.051)			(0.101)
Comparative small acquisition activity (between–firm component)			0.999		1.083***	1.061***
			(0.017)		(0.013)	(0.013)
Increase in small acquisition activity (within–firm component)			1.062**		0.967*	0.963**
			(0.021)		(0.013)	(0.014)
Acquisition performance feedback	0.950	1.195	1.217	0.432	0.416	0.438
	(1.309)	(1.644)	(1.676)	(0.396)	(0.384)	(0.398)
Performance above aspirations	0.999	1.003	1.004	1.008	1.007	1.011
	(0.017)	(0.018)	(0.018)	(0.013)	(0.013)	(0.014)
Performance below aspirations	1.043*	1.048*	1.051*	1.024	1.023	1.028*
	(0.019)	(0.022)	(0.022)	(0.013)	(0.013)	(0.013)
Growth above aspirations	0.857	1.097	1.127	0.961	0.944	0.832
	(0.290)	(0.385)	(0.397)	(0.214)	(0.207)	(0.196)
Growth below aspirations	1.088	1.109	1.090	1.072	1.064	1.143
	(0.331)	(0.472)	(0.466)	(0.210)	(0.201)	(0.258)
Managerial overconfidence	1.011	1.062	1.048	1.487**	1.493***	1.482**
	(0.188)	(0.202)	(0.200)	(0.180)	(0.181)	(0.181)
Board independence	1.204	0.737	0.814	0.454	0.453	0.463
	(0.931)	(0.586)	(0.651)	(0.230)	(0.229)	(0.237)
Board size	1.033	1.039	1.021	1.055	1.056	1.056
	(0.054)	(0.056)	(0.057)	(0.034)	(0.034)	(0.034)
CEO stock–based compensation	1.490	1.612	1.661	1.140	1.130	1.110
	(0.467)	(0.508)	(0.524)	(0.233)	(0.231)	(0.228)
CEO succession	0.913	0.862	0.857	1.072	1.074	1.092
	(0.199)	(0.196)	(0.195)	(0.147)	(0.147)	(0.151)
TMT turnover	0.975	1.008	1.019	0.906	0.900	0.886*
	(0.081)	(0.087)	(0.088)	(0.050)	(0.049)	(0.049)
Firm debt–to–equity ratio	1.001	1.002	1.002	1.001	1.001	1.001
	(0.006)	(0.007)	(0.007)	(0.004)	(0.004)	(0.004)
Firm stock market performance	1.000	0.999	0.999	1.000	1.000	1.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

(Continues)

Table II. (Continued)

	Momentum in large acquisitions			*Momentum in small acquisitions*		
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Firm size	0.401***	0.433***	0.402***	0.907	0.979	0.955
	(0.086)	(0.092)	(0.086)	(0.143)	(0.157)	(0.153)
Firm risk	0.031***	0.017***	0.020***	0.164**	0.145**	0.149**
	(0.028)	(0.016)	(0.020)	(0.098)	(0.087)	(0.093)
Firm diversification	0.922	0.902	0.881	1.058	1.066	1.072
	(0.197)	(0.196)	(0.192)	(0.146)	(0.148)	(0.149)
Ratio of cross−border acquisitions	1.196*	1.319***	1.242**	0.925	0.978	0.950
	(0.087)	(0.102)	(0.098)	(0.048)	(0.058)	(0.057)
Industry's large acquisition activity		5.005***	5.401**			3.098**
		(2.270)	(2.813)			(1.135)
Industry's small acquisition activity			0.985		1.104*	1.003
			(0.061)		(0.043)	(0.043)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak instruments	Yes	Yes	Yes	Yes	Yes	Yes
N	6631	6631	6631	6631	6631	6631

Notes: Random effects panel logit model with Mundlak instruments (estimated using Stata's xthybrid command and equivalent manual implementation to facilitate plotting); within−firm effects reported, between−firm effects (Mundlak instruments) included in all models but not reported, except for the acquisition activity measures in which the between−firm components are also reported, and the industry averages are included and reported; odds ratios reported with standard errors of the coefficients in parentheses.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two−tailed tests for all variables).

large acquisition activity, and the large acquisition variables in Model 6 explain the small acquisition activity.

With respect to the control variables, only *firm risk, performance below aspirations, and industry large acquisition activity* had a significant effect on both the momentum in large acquisitions and the momentum in small acquisitions. The statistically significant odds ratio smaller than one suggests that *firm risk* is negatively related to momentum in both small and large acquisitions; while the statistically significant odds ratio larger than one suggests that *performance below aspirations and industry large acquisitions* are positively related to momentum in both small and large acquisitions.

Two control variables were found to have a significant effect only on the momentum in large acquisitions. The statistically significant odds ratio smaller than one obtained for *firm size* suggests that it is negatively related to momentum in large acquisitions, and the statistically significant odds ratio larger than one obtained for *ratio of cross-border acquisitions* indicates that it is positively related to momentum in large acquisitions. In a similar manner, two other control variables were found to have a significant effect only on the momentum in small acquisitions. The statistically significant odds ratio smaller than one obtained for *TMT turnover* shows that it is negatively related to momentum in small acquisitions, and the statistically significant odds ratio larger than one obtained for *managerial overconfidence* indicates that they are positively related to momentum in small acquisitions.

The results presented in Models 2 and 5 support Hypotheses 1a and 1b regarding positional momentum (i.e., between-firm effects). In Hypothesis 1a, we predicted that an acquiring firm's comparative experience with large acquisition activity relative to other firms is positively related to further large acquisitions. In Hypothesis 1b, we predicted that an acquiring firm's comparative experience with small acquisition activity relative to other firms is positively related to momentum in small acquisitions. For the comparative experience with large acquisition activity, in Model 2, we obtained an odds ratio larger than one (odds ratio 3.28) with a statistical significance of $p < 0.001$. Similarly, the larger than one odds ratio (odds ratio 1.08) obtained in Model 5 of comparative small acquisition activity with a statistical significance of $p < 0.001$ supports the prediction of Hypothesis 1b. Notably, consistent results were obtained in the full models (Models 3 and 6), which also include the cross-size variables. The high odds ratio of the comparative large acquisition activity (the effect of a one-unit change) reflects the comparative rarity of large acquisitions.

Given that the marginal effects vary in logit models not only with the levels of the main effect but also with the values of the other variables (Hoetker, 2007), a plot is warranted to ensure the accurate interpretation of the results. Therefore, Figure 1a shows the predicted probabilities of large acquisition momentum based on the average marginal effects of the comparative large acquisition activity estimated based on Model 3. We limit the plot to between the 1 per cent percentile (0.00) and the 99 per cent percentile (2.44) to ensure that the plot represents most observations, given the skewness of the variable. The plot and confidence intervals illustrate the predicted positive effect of the comparative large acquisition activity on the probability of maintaining momentum across all values of the independent variable. Similarly, Figure 1b illustrates the positive effect of the comparative small acquisition activity on the likelihood of maintaining momentum in small acquisitions across all values of the independent variable (plotted between the 1 per cent percentile (0.00) and the 99 per cent percentile (20.00)). These plots of predicted probabilities, which include 95 per cent confidence intervals, indicate quite large differences in the predicted probabilities of momentum across the range of comparative acquisition activity in the same acquisition size category (from approximately 3 per cent close to 30 per cent in small acquisitions and from approximately 10 per cent to approximately 25 per cent in large acquisitions).

In Model 2, we test Hypothesis 2a, which predicts that an increase in large acquisition activity relative to firms' average activity reduces subsequent acquisition activity in large acquisitions (i.e., within-firm effects). An odds ratio smaller than one (odds ratio 0.50) with a statistical significance of $p < 0.001$ supports our hypothesis. Very similar results are obtained in Model 3 after adding the cross-size effects (odds ratio 0.48, $p < 0.001$). To further explore this effect, as shown in Figure 1c, we plot the relationship between the increase in large acquisition activity (between the 1 per cent percentile (-1.22) and the 99 per cent percentile (1.50)) and the probability of large acquisition momentum. The figure shows that the larger the increase above a firm's average, the less likely the large acquisition momentum is.

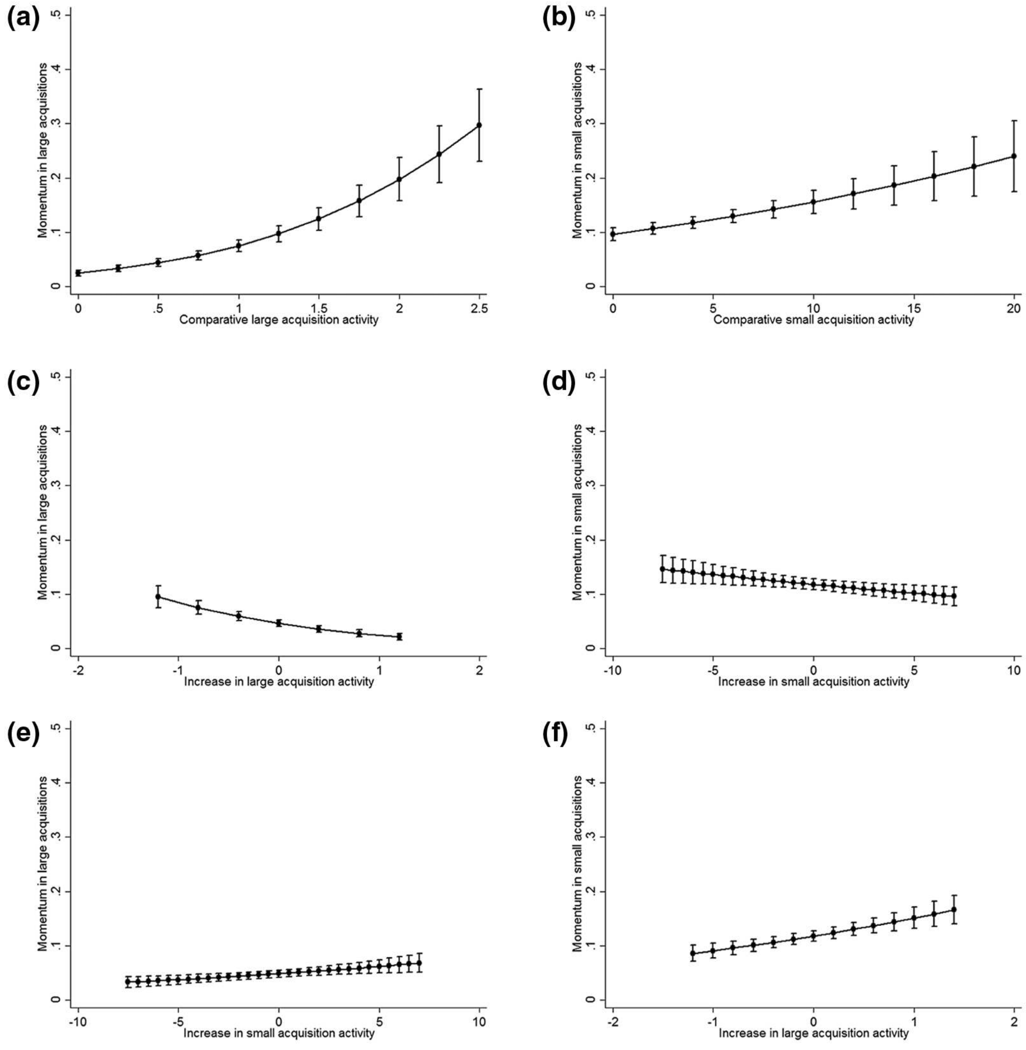

Figure 1. Predicted probabilities of acquisition momentum based on the average marginal effects.

In Model 5, we test Hypothesis 2b, which predicts that an increase in small acquisition activity relative to firms' average activity reduces small acquisition momentum. An odds ratio smaller than one (odds ratio 0.97) with a statistical significance of $p = 0.02$ supports our hypothesis. This result is also consistent with the full model, which includes cross-size effects (odds ratio 0.96, $p < 0.01$). To further explore this effect, in Figure 1d, we present the relationship between an increase in small acquisition activity (between the 1 per cent percentile (-7.50) and the 99 per cent percentile (7.33)) and the probability of small acquisition momentum. The figure clearly demonstrates that the larger the increase in small acquisition activity, the less likely subsequent acquisition activity in small acquisitions will occur.

Hypothesis 3a predicts that increases in large acquisition activity relative to firms' average activity lead a firm to switch from large to small acquisitions such that subsequent large acquisition activity is reduced and subsequent small acquisition activity is increased. The first part of this hypothesis is supported by the smaller than one odds ratio (odds ratio 0.50, $p < 0.001$) of the increase in large acquisition activity in Model 2 and 0.48 ($p < 0.001$) in Model 3. To test how an increase in large acquisition activity affects small acquisition momentum, we introduce this variable in Model 6, which includes the cross-size main effect variables. The larger than one odds ratio (odds ratio 1.39, $p < 0.001$) of the increase in large acquisition activity provides support for the second part of the hypothesis. Altogether, these results support the hypothesis regarding switching from large to small acquisition activity. To further explore this switching from large to small activity, in Figure 1f, we present the increase in small acquisition activity (the decrease in large acquisition activity is presented in Figure 1c in the discussion of the results of Hypothesis 2). The graphs clearly show that increases in large acquisition activity lead firms to reduce their activity in large acquisitions while increasing their activity in small acquisitions.

Finally, Hypothesis 3b predicts that increases in small acquisition activity relative to firms' average activity lead firms to switch from small to large acquisitions such that the likelihood of subsequent acquisition activity in small acquisition activity is reduced and subsequent large acquisition activity is increased. Again, to test how increases in small acquisition activity affect momentum in large acquisitions, we introduced this variable in Model 3. An odds ratio larger than one (odds ratio 1.06, $p < 0.01$) provides support for the second part of the hypothesis. The first part of the hypothesis was tested in the context of Hypothesis 2 with a smaller than one odds ratio offering support for the predicted decline in subsequent acquisition activity in small acquisition activity following an increase in small acquisition activity (0.97 in Model 5 and 0.96 in Model 6). We plot these relationships in Figure 1d,e.

Robustness Tests

We conducted several additional analyses to ensure the robustness of our results. The results of these additional analyses, as shown in Tables A.II and A.III in the Appendix, are largely consistent with our main analyses. In our main analyses, we use the mean of the relative acquisition size in the sample as a cut-off between large and small acquisitions (in our sample, this value equals 8.0 per cent of the asset value of the acquiring firm). In our robustness tests, we also test two alternative cut-offs: mean + ½ standard deviation (see Models 2 and 8 in Table A.II) and mean + 1 standard deviation (see Models 3 and 9 in Table A.II), which are equal to 19.5 per cent and 31.0 per cent of the asset values of the acquiring firm in our sample, respectively. Although all other results remain significant and consistent in sign, in Models 2–3, the effect of an increase in small acquisition activity on momentum in large acquisitions drops slightly below significance ($p = 0.10$ and $p = 0.15$, respectively), and in Model 9, the significance of the effect of an increase in small acquisition activity on momentum drops below significance ($p = 0.07$).

Several approaches have been used in prior acquisition research to differentiate between large and small acquisitions. In our main analyses, we follow the common practice of measuring the size of an acquisition relative to the size of the acquiring firm (e.g., Finkelstein and Haleblian, 2002; Hayward, 2002; Kusewitt Jr., 1985). As a robustness test, we also developed an acquirer-specific variable where we distinguish between large and small acquisitions based on the relative size of each acquisition compared with the acquirer's other acquisitions. To make this distinction, we define a firm-specific acquisition size threshold (ASThreshold) based on the arithmetic mean and standard deviation of all acquisitions performed by the focal firm. We define all acquisitions below the threshold as small routine acquisitions and all acquisitions above the threshold as large nonroutine acquisitions. The results remain consistent with our main analysis (see more details on this measure in the Appendix, where the results are presented in Models 4 and 10 in Table A.II).

In our main analyses, we chose to use the hybrid model because this model allows for explicit modelling of both within-firm and between-firm effects, which is needed for our hypothesis tests. As a robustness test, we also conducted a fixed-effects analysis to demonstrate that the coefficient of the within-firm component in this formulation is theoretically identical to the coefficient produced in a fixed-effects linear model and is approximately identical to the coefficient produced in generalized linear mixed models such as our model (see Models 5 and 11 in Table A.II). To measure the independent variables, we use the number of large (small) acquisitions performed during the previous three-year observation window. In our robustness tests, we also test a one-year alternative window (see Models 6 and 12 in Table A.II).

Recently, Certo et al. (2018) noted that one should be careful when using ratios in regression analyses. In the current study, neither the dependent nor the independent variables of interest are ratios. Although we use some ratio variables as our control variables, these variables have different numerators and denominators, and therefore, the concern noted in the article does not exist. Furthermore, these variables cannot easily be replaced with absolute values. However, as indicated in the robustness check reported in Models 1 and 7 in Table A.III, where possible, we replaced the ratio-based control variables with their numerators and denominators.

Amburgey and Miner (1992, p. 335) defined strategic momentum as '*the tendency to maintain or expand the emphasis and direction of prior strategic actions in current strategic behavior*' (i.e., maintaining or increasing the volume change). In Models 2 and 8, we present analyses in which we defined momentum only when the volume of acquisitions increases (i.e., we do not include situations in which the current year value of the deals is equal to the value of the deals during the previous year). In Models 3 and 9 in Table A.III, we perform a further step and present analyses in which we define momentum only when the volume of acquisitions increases by at least 10 per cent. Moreover, in Models 4 and 10, we replace the monetary value of the acquisitions with the number of acquisitions in the dependent variables. The results remained consistent in sign and significance, except for the coefficient of the increase in small acquisitions becoming insignificant in Model 4 and the coefficient of the increase in large acquisitions becoming insignificant in Model 10.

Over time, firms develop the capacity to absorb a certain volume of acquisitions of each type (large and small). As a result, it is likely that firms differ in this capacity. Firms that absorb a high number of acquisitions on a regular basis are likely to be better able to absorb above normal (or peak) activity than a firm whose normal activity load is already relatively low at the outset. To better control for these differences among firms, Models 5 and 11 in Table A.III, we present analyses in which we use the Z score of our peak variable. Because the Z score measures how many standard deviations a firm is away from the mean, it normalizes the peak to the normal activity of each firm. The results remain consistent with our main analyses. Finally, to ensure that our results are not driven by the fact that many companies made no acquisitions in some years, we exclude firm-year observations with zero acquisitions in Models 6 and 12 in Table A.III. The results remain consistent with our main models except for the significance of the between-firm component of small acquisition activity, which drops insignificantly ($p = 0.30$) in Model 12. Overall, across a large number of robustness tests using alternative dependent and independent variable operationalizations and model specifications, the signs of the coefficients remain fully consistent, and the significance levels remain mostly consistent with the main analyses.

DISCUSSION

Drawing on momentum theory, we find that a firm's comparative activity (relative to other firms) in acquisitions of a specific size category increases the likelihood of subsequent acquisitions of the same size category. However, at the same time, high recent acquisition activity in a specific acquisition size category is negatively related to subsequent acquisition activity in this category. When considering these two effects simultaneously, the countervailing forces combine to create a switching pattern in which a decrease in acquisition activity in a specific target size category after an intense acquisition period is accompanied by an increase in acquisition activity in the other size category.

Contributions to Theory Development and Directions for Future Research

The primary contribution of our paper is in reconciling conflicting arguments and findings regarding the prediction of momentum theory that past acquisition behaviour increases the likelihood of future acquisitions (Amburgey and Miner, 1992; Beck et al., 2008) by extending the theoretical mechanisms underlying momentum theory and by applying a novel set of econometric models. In addition, we contribute to research investigating temporal patterns of acquisition behaviour.

Implications for momentum theory. We argue that adding activity load and attention modulation to the theoretical mechanisms of momentum theory is central to reconciling conflicting arguments and findings and to explaining a broader range of acquisition behaviours. We find that activity load plays an important role in regulating acquisition behaviour by providing constraints for behaviour. Moreover, we find that attention modulation allows managers to cope with the countervailing forces of routines, cognitive frames, and activity load. Our results suggest that momentum theory is incomplete without these additional theoretical mechanisms.

By counteracting the other two causal mechanisms underlying momentum theory, activity load sets the boundaries of whether and when momentum occurs. Therefore, it helps explain when momentum theory applies and when it does not. As noted by Makadok et al. (2018) on page 1537: '*A careful exploration of boundary conditions can also make a valuable theoretical contribution by identifying logical inconsistencies*'. We believe our paper makes a theoretical contribution along these lines by identifying logical boundary conditions to the momentum theory and by extending the theory by incorporating the activity load mechanism to explain the boundary conditions of the momentum theory (Colquitt and Zapata-Phelan, 2007).

As organizational routines and cognitive frames represent 'inert resources', activity load (or the lack of it) can be seen as an '*active*' organizational resource. Cognitive frames and routines represent '*available potentialities*' (Hodgson, 2009) that can be invoked when needed and that also themselves drive activity (Amburgey and Miner, 1992). Similarly, one can argue that activity capacity (low activity load) represents the managerial capacity that can be invoked if needed. For example, Penrose argued that the '*availability of managerial services*' drives firm growth, as managers who have available capacity start working on new growth initiatives (Penrose, 1959). From this perspective, it is surprising that momentum theory has not previously included the availability of managerial services as part of momentum theory since it has been such a central part of the theory of growth already early on.

The addition of activity load to momentum theory opens up important avenues for further research. While our focus was on the effect of activity load in limiting further activity in the short run, activity load may also trigger new capability (i.e., routine) development and the development of new cognitive frameworks. The development of new routines and cognitive frames to cope with a higher activity load can then, in turn, increase management's capacity that enables management to cope with a higher activity load in the future. Understanding how the three different theoretical mechanisms of momentum theory interact with each other over time strikes us as an important avenue for future research in understanding to what extent different companies differ in their capacity to manage different degrees of activity load.

In this paper, we examine the role of activity load in connection with a specific type of momentum associated with the continuation of acquisition activity. However, momentum theory has also been used to study other types of momentum, such as the momentum of innovation activities (e.g., Greve, 2007; Miller and Friesen, 1982; Turner et al., 2013) and momentum of strategic change (Jansen, 2004; Kelly and Amburgey, 1991). Although the nature of activity load associated with innovation activities or strategic change is different from the activity load associated with acquisitions, one could similarly predict that the high activity load associated with these activities reduces rather than increases the likelihood of subsequent activity.

Developing further the concept of activity load provides another important avenue for future research. Despite the long-standing interest in the challenges associated with information overload (e.g., Eppler and Mengis, 2004), activity load (Castellaneta and Zollo, 2015), cognitive load (e.g., Laamanen et al., 2018; van Merrienboer and Sweller, 2005) and managerial job demands (e.g., Hambrick et al., 2005; Sanders and Carpenter, 1998; Wang and Yang, 2015), we have a limited understanding of how the different types of load interact with each other and how their interplay enables the organization to sustain different types of activities.

While we associated activity load mainly with the volume of activities associated with the number and sizes of acquisitions, acquisitions also differ from each other in terms of their level of difficulty from the perspective of the acquirer. For example, acquisition targets operating in more distant institutional contexts may cause a higher activity load than acquisition targets located near the acquiring firm. Similarly, targets operating in unfamiliar or more demanding business environments may add to the activity load. Adding the degree of difficulty of acquisitions to the analysis might require the incorporation of cognitive load alongside activity load as a further theoretical mechanism to capture the difficulty of the activities associated with acquisition behaviour.

Our study also introduces attention modulation (Castellaneta and Zollo, 2015; Laureiro-Martínez et al., 2010; Laureiro-Martínez et al., 2015) as an important mechanism by which managers may cope with countervailing pressure of maintaining activity momentum and reducing activity load by switching between different activity types. Given its origin in individual psychology (e.g., Posner, 2012), our understanding of the role of attention modulation in organizations continues to be limited. Important questions relate to what types of activities are considered similar from an organization's perspective? What types of activities fall into the same cognitive category but are still sufficiently dissimilar to allow for attention modulation to balance the effects of activity load? Future research should therefore investigate how such attention modulation plays out in other activities (e.g., international expansion, strategic alliances) or across different acquisition types (e.g., domestic versus international acquisitions or intra-industry versus diversifying acquisitions) that may allow for similar switching behaviour. The concept of attention modulation also has broader implications for the behavioural theory of the firm in explaining what causes managers to choose to switch between different types of activities and what types of activities they switch to.

Finally, our extensions of the theoretical apparatus of strategic momentum theory not only help reconcile the seemingly opposing theoretical positions highlighted by recent criticisms of momentum theory (Beck et al., 2008) but also suggest the need for important changes in econometric practices in momentum research. Prior research that has drawn on momentum theory has typically tested the effects of momentum with random effects specifications, which test the combined effects of acquisition history relative to other firms (between-firm effect) and relative to a firm's own past behaviour (within-firm effect) with regard to its subsequent acquisition behaviour. In contrast, the study by Beck et al. (2008) focused only on the within-firm effect. Since both between-firm and within-firm effects are important to understand acquisition behaviour and momentum theory, our analysis shows how explicitly separating these two distinct effects drawing upon recent econometric models (Certo et al., 2017; Schunck and Perales, 2017) provides new insights and a better understanding of the mechanisms underlying momentum theory. Going forward, research should therefore extend our analysis of the within-firm and between-firm effects (Certo et al., 2017; Ketokivi et al., 2021; Schunck and Perales, 2017) to other research areas in which momentum theory has been utilized.

Temporal patterns of acquisition behaviour. Our arguments and empirical analyses also extend research on temporal patterns of acquisition behaviour (e.g., Laamanen and Keil, 2008; McNamara et al., 2008; Shi et al., 2012; Shi and Prescott, 2011). Specifically, we show that a broad variety of acquisition behaviours can be explained by the interplay of the development of routines, formation of cognitive frameworks, emergence of activity load, and attention modulation. Although our study focused on the temporal patterns of acquisition behaviour, the same theoretical logic could also be extended to other contexts in which similar causal mechanisms can be used to predict temporal patterns. Such contexts could include, for example, new product launches (Turner et al., 2013), international expansion (Vermeulen and Barkema, 2002), alliances (Shi and Prescott, 2012), and organizational changes (Klarner and Raisch, 2013).

In addition to the acceleration and deceleration of acquisition activity, the switching between different acquisition sizes emerged as an interesting novel temporal pattern in acquisition behaviour. The occurrence of switching between different acquisition size categories over time is quite interesting, as studies have found that switching is negatively associated with acquirer performance when the switch occurs from small to large acquisitions (Ellis et al., 2011). Further research is needed to establish whether a switch from large to small acquisitions is equally detrimental to acquirer performance or whether this transition occurs more smoothly.

Prior research that has documented the generally detrimental effects of the unevenness of the acquisition pace on acquirer performance (Laamanen and Keil, 2008) seems to indicate that this transition may be equally difficult to manage. Thus, acquirers could be expected to benefit from the avoidance of the high levels of acquisition load associated with acquisition bursts. By providing an improved understanding of the role of activity load in the switching dynamic, our paper provides a potential explanation for the dysfunctional acquisition behaviours observed by Laamanen and Keil (2008) and Ellis et al. (2011) in their empirical analyses.

Managerial Implications

Our paper has important implications for managers engaging in mergers and acquisitions. Our results suggest that the pre-deal activity load arising from a large number of small acquisitions and the post-deal integration complexity arising from large acquisitions limit subsequent acquisition behaviour in the same size category. For acquirers that plan to continue and extend their acquisition behaviour in the same size category, this implies that they need to devise mechanisms to either delimit the acquisition load or build sufficient capacity ahead of time. For instance, for small acquisitions, activity load often arises from the need to conduct a large number of negotiation processes simultaneously. To address this limitation, acquisitive companies, such as Alphabet, have routinized and streamlined their acquisition processes to enable a more efficient use of senior management's time in the pre-deal stage. Also, the introduction of digital tools to manage the process has helped enhance the efficiency of the activities associated with the pre-deal stage.

For large acquisitions, the load often arises from the complex integration processes that may overwhelm the operating organization. To address this limitation, active acquirers may build integration capacity ahead of time. For instance, a senior integration manager in one of the companies we interviewed for this study explained to us how in response to the need to engage in additional large acquisitions, the organization invested in strategic HR and IT integration capabilities allowing the company in the future to digest several larger targets at the same time rather than only one. Also, the establishment of program management offices (PMO) alongside the dedicated acquisition function helps ensure continuous integration capability development enabling acquiring companies to become more efficient at large integrations.

Limitations and Boundary Conditions

Our paper also has limitations that provide opportunities for future research. First, our study utilizes firm-level proxies of activity load. Given our large sample and the relatively long analysis period, collecting internal measures of activity load was not possible. Therefore, we proxied for the activity load with externally observable measures (similarly to, e.g., Castellaneta and Zollo, 2015). To compensate for this, we conducted a number of interviews with M&A directors to establish the validity of the activity load concept in the context of acquisitions and our intuition on the switching dynamic associated with the concept of attention modulation. Further deepening single- or multiple-case-based research would, however, be needed to deepen understanding of the different types of activity loads caused by different types of acquisition activities and the resources representing the most important bottlenecks in dealing with the activity load.

Second, in our argumentation concerning the momentum associated with different types of acquisitions, we developed arguments regarding the causal mechanism of the effect of the comparative familiarity (when compared to other firms) of small vs. large acquisitions without being able to test the mechanism directly. While our conversations with the M&A directors confirmed that small and large acquisitions are managed very differently, future research conducted through multiple case studies or surveys could complement our study by directly investigating our proposed mechanisms, similar to how researchers have previously deepened the understanding of the role of behavioural learning dynamics in acquisition activity (Bingham et al., 2015; Heimeriks et al., 2012).

Finally, we were unable to measure the efforts that managers invested in learning and knowledge codification, which may play a role in how experience leads to routine and capability formation (Zollo and Singh, 2004). Moreover, we were unable to directly measure organizational capabilities such as acquisition capabilities or attention modulation capabilities (Castellaneta and Zollo, 2015; Laureiro-Martinez et al., 2019). Therefore, future research could also extend our study by investigating these potential moderators or mediators through surveys better suited to operationalizing these additional constructs.

CONCLUSION

We reconcile the two contradicting views in the research on momentum theory on the influence of past experience on future activity. We argue that momentum is influenced not only by the formation of routines and cognitive frameworks but also by the emergence of activity load that provides a counterforce to the momentum sustaining and enhancing effects of past experience and attention modulation that allows firms and their managers to deal with the opposing pressures. Therefore, the continuation of momentum should always be understood as a result of the interplay of these different underlying determinants. By examining within-firm and between-firm effects of past experience separately, we can empirically distinguish between the activity-sustaining *between-firm* effect of routines and cognitive frameworks and activity-limiting *within-firm* effects of activity load. These correspond to what prior research has labelled positional and repetitive momentum, respectively. We hope that our paper helps revitalize the research interest in momentum theory and that it inspires acquisition researchers to better account for the effects of activity load when examining acquisition patterns and the effects of acquisition experience on different organizational outcomes.

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NOTES

[1] To eliminate survivor bias, we first included all firms listed on the S&P 1500 list between 1997 and 2006 with at least two consecutive years (needed for the variable calculations) and with the relevant data available in the databases. As is typical in research that uses multiple secondary data sources, some data loss occurred due to missing data, particularly regarding CEO compensation or board composition in the ExecuComp and RiskMetrics Directors databases (in our dataset, we have 9784 observations with these variables) and various other variables; therefore, the multiyear time windows needed to create some of the independent variables and the lag structure in the analysis. Consequently, our main regression models are estimated using an unbalanced panel dataset of 6,631 company-year observations from 1,504 firms (an average of 4.4 years per firm) with complete data on the variables used in our main regression models.

[2] The inclusion of the time-invariant mean of large (small) acquisition activity allows for the increase in acquisition activity to be interpreted purely as a within-firm effect (Rabe-Hesketh and Skrondal, 2009; Schunck and Perales, 2017). The models were estimated using the xthybrid-command and equivalent manual calculation of the within-firm and between-firm components (Schunck, 2013) to facilitate the plotting of marginal effects.

[3] An alternative, 1-year observation window was tested as a robustness analysis. The results are reported in Table A.II in the Appendix.

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APPENDIX
VARIABLE DEFINITIONS AND ROBUSTNESS ANALYSES

In Table A.I, we present the definitions of all variables used in the analyses and the robustness tests. In Table A.II, we present all robustness analyses included in our original manuscript. In Table A.II, we present additional robustness analyses conducted following the reviewers' recommendations.

Table A.I. Variable definitions

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Momentum in large acquisitions	1 if the sum of the monetary value of a firm's large acquisitions (acquisition size relative to assets greater than the sample mean of 8.0% of assets) in a given year is equal to or larger than the total monetary value of its large acquisitions during the previous year or 0 if the sum of the monetary value of a firm's large acquisitions during a given year is smaller than the monetary value of its large acquisitions during the previous year or is zero.	SDC Platinum & Compustat
Momentum in small acquisitions	1 if the sum of the monetary value of a firm's small acquisitions (acquisition size relative to assets smaller than the sample mean of 8.0% of assets) during a given year is equal to or larger than the total monetary value of its small acquisitions during the previous year of a value or 0 if the sum of the monetary value of a firm's small acquisitions during a given year is smaller than the monetary value of its small acquisitions during the previous year or is zero.	SDC Platinum & Compustat
Comparative large acquisition activity	Between−firm component (time−invariant mean) of the number of large acquisitions (acquisition size relative to assets greater than the sample mean of 8.0% of assets) performed during the previous three−year observation window	SDC Platinum & Compustat
Increase in large acquisition activity	Within−firm component (demeaned observations) of the number of large acquisitions (acquisition size relative to assets greater than the sample mean of 8.0% of assets) performed during the previous three−year observation window.	SDC Platinum & Compustat
Comparative small acquisition activity	Between−firm component (time−invariant mean) of the number of large acquisitions (acquisition size relative to assets smaller than the sample mean of 8.0% of assets) performed during the previous three−year observation window.	SDC Platinum & Compustat

(Continues)

Table A.I. (Continued)

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Increase in small acquisition activity	Within−firm component (demeaned observations) of the number of large acquisitions (acquisition size relative to assets smaller than the sample mean of 8.0% of assets) performed during the previous three−year observation window.	SDC Platinum & Compustat
Acquisition performance feedback	The mean cumulative abnormal returns of prior acquisitions within the event window of five trading days before and after an acquisition aggregated by averaging these returns on an annual basis.	CRSP
Performance above aspirations	Firm's performance to its historical performance as a spline function, i.e., when it is above the aspirations (otherwise zero), it uses the following recursive formula: $P_t - A_t$, where $A_t = aP_{t-1} + (1 - a)A_{t-1}$, P_t is the ROA at time t, P_{t-1} is the ROA during the previous year, $a = .5$, and A_{t-1} is the aspiration level during the previous year.	Compustat
Performance below aspirations	Firm's performance to its historical performance as a spline function, i.e., when it is below the aspirations (otherwise zero), it uses the following recursive formula: $P_t - A_t$, where $A_t = aP_{t-1} + (1 - a)A_{t-1}$, P_t is the ROA at time t, P_{t-1} is the ROA during the previous year, $a = .5$, and A_{t-1} is the aspiration level during the previous year.	Compustat
Growth above aspirations	Firm's growth to its historical growth as a spline function, i.e., when it is above the aspirations (otherwise zero), it uses the following recursive formula: $G_t - A_t$, where $A_t = aG_{t-1} + (1 - a)A_{t-1}$, G_t is the annual sales growth at time t, G is the annual sales growth during the previous year, $a = .5$, and A_{t-1} is the aspiration level during the previous year.	Compustat
Growth below aspirations	Firm's growth to its historical growth as a spline function, i.e., when it is below the aspirations (otherwise zero), it uses the following recursive formula: $G_t - A_t$, where $A_t = aG_{t-1} + (1 - a)A_{t-1}$, G is the annual sales growth at time t, G is the annual sales growth during the previous year, $a = .5$, and A_{t-1} is the aspiration level during the previous year.	Compustat

(Continues)

Table A.I. (Continued)

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Managerial overconfidence	1 if the CEO has not exercised 67% of his or her exercisable in–the–money options and 0 otherwise (Campbell et al., 2011).	ExecuComp
Board independence	Percentage of non-affiliated directors on a firm's board (non-affiliated directors/number of board members.	RiskMetrics Directors database
Board size	The number of board members.	RiskMetrics Directors database
CEO stock–based compensation	The ratio of the value of stock and stock options that a CEO receives during a fiscal year divided by the total compensation received during the same time frame. The value of stocks is the number of shares received multiplied by share value at the end of the fiscal year and the value of stock options is the number of options multiplied by their Black–Scholes value.	ExecuComp
CEO succession	1 if the CEO changed from the previous year and 0 otherwise.	ExecuComp
TMT turnover	Yearly number of turnovers among the four highest–paid employees of the firm (excluding the CEO).	ExecuComp
Firm debt–to–equity ratio	Firm debt–to–equity is the ratio (total liabilities/share's book value X number of outstanding shares).	Compustat
Firm stock market performance	Firm's total return per share with dividends reinvested.	ExecuComp
Firm size	The log of the number of employees.	Compustat
Firm risk	The Black–Scholes (1973) volatility parameter.	ExecuComp
Firm diversification	The Jacquemin–Berry entropy index (Palepu, 1985).	Compustat business–segment data
Ratio of cross–border acquisitions	A percentage of foreign acquisitions of all acquisitions larger than the threshold in the dependent variable over a three–year time window.	SDC Platinum
Industry's small acquisition activity	An average number of small acquisitions (acquisition size relative to assets smaller than the sample mean of 8.0% of assets).	SDC Platinum
Industry's large acquisition activity	An average number of large acquisitions (acquisition size relative to assets greater than the sample mean of 8.0% of assets).	SDC Platinum

(Continues)

Table A.I. (Continued)

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Year dummies	1 if the year observation is the year of the year dummy and 0 otherwise (n−1 dummy variables).	Compustat
Panel B: Variable Definitions of Alternative Measures Used in The Robustness Tests		
Variable	Definition	Sources
Momentum in large acquisitions	Same as in the main analyses but with the mean + ½ standard deviation as a cut-off for large acquisitions (acquisition size 19.5% of the asset values of the acquiring firm in our sample). (Models 2 and 8 in Table A.II)	SDC Platinum & Compustat
	Same as in the main analyses but with the mean + 1 standard deviation as the cut-off for large acquisitions (acquisition size 31.0% of the asset values of the acquiring firm in our sample). (Models 3 and 9 in Table A.II)	
	Same as in the main analyses but using an acquirer−specific size−cut-off based on the relative size of each acquisition compared with the acquirer's other acquisitions (a firm−specific acquisition size threshold (ASThreshold) defined based on the arithmetic mean and standard deviation of all acquisitions performed by the focal firm). (Models 4 and 10 in Table A.II)	
	Same as in the main analyses but defining momentum only when the volume of acquisitions increases (i.e., we do not include situations in which the current year value of the deals is equal to the value of the deals during the previous year). (Models 2 and 8 in Table A.III)	
	Same as in the main analyses but defined momentum only when the volume of acquisitions increases by at least 10%. Moreover, we defined momentum based on the total monetary value of a firm's large (small) acquisitions in a given year. (Models 3 and 9 in Table A.III)	
	Same as in the main analyses but volume of acquisitions replaced by the number of acquisitions in the dependent variables (Models 4 and 10 in Table A.III)	

(Continues)

Table A.I. (Continued)

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Momentum in small acquisitions	Same as in the main analyses but with the mean + ½ standard deviation as a cut-off for large acquisitions (acquisition size 19.5% of the asset values of the acquiring firm in our sample). (Models 2 and 8 in Table A.II)	SDC Platinum & Compustat
	Same as in the main analyses but with the mean + 1 standard deviation as the cut-off for large acquisitions (acquisition size 31.0% of the asset values of the acquiring firm in our sample). (Models 3 and 9 in Table A.II)	
	Same as in the main analyses but using an acquirer−specific size−cut-off based on the relative size of each acquisition compared with the acquirer's other acquisitions (a firm−specific acquisition size threshold (ASThreshold) defined based on the arithmetic mean and standard deviation of all acquisitions performed by the focal firm). (Models 4 and 10 in Table A.II)	
	Same as in the main analyses but defining momentum only when the volume of acquisitions increases (i.e., we do not include situations in which the current year value of the deals is equal to the value of the deals during the previous year). (Models 2 and 8 in Table A.III)	
	Same as in the main analyses but defined momentum only when the volume of acquisitions increases by at least 10%. Moreover, we defined momentum based on the total monetary value of a firm's large (small) acquisitions in a given year. (Models 3 and 9 in Table A.III)	
	Same as in the main analyses but volume of acquisitions replaced by the number of acquisitions in the dependent variables (Models 4 and 10 in Table A.III)	
Comparative large acquisition activity	Same as in the main analyses but with a one−year alternative window. (Models 6 and 12 in Table A.II)	SDC Platinum & Compustat
Increase in large acquisition activity	Same as in the main analyses but with a one−year alternative window. (Models 6 and 12 in Table A.II)	SDC Platinum & Compustat
	Same as in the main analyses but using a Z score that measures how many standard deviations a firm is away from the mean. (Models 5 and 11 in Table A.III)	

(Continues)

Table A.I. (Continued)

Panel A: Main Analyses		
Variable	*Definition*	*Data Source*
Comparative small acquisition activity	Same as in the main analyses but with a one−year alternative window. (Models 6 and 12 in Table A.II) Same as in the main analyses but using a Z score that measures how many standard deviations a firm is away from the mean. (Models 5 and 11 in Table A.III)	SDC Platinum & Compustat
Increase in small acquisition activity	Same as in the main analyses but with a one−year alternative window. (Models 6 and 12 in Table A.II)	SDC Platinum & Compustat
Board independence	Number (instead of Percentage) of non-affiliated directors on a firm's board. (Models 1 and 7 in Table A.III)	RiskMetrics Directors database
Firm debt−to−equity ratio	Debt and equity (instead of ratio) as separate variables. (Models 1 and 7 in Table A.III)	Compustat

Table A.II. Robustness tests

	Momentum in large acquisitions						*Momentum in small acquisitions*					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Comparative large acquisition activity (between–firm component)	3.296***	8.572***	20.106***	1.560***		22.125***	2.103***	2.518***	2.727***	1.446***		5.788***
	(0.308)	(1.798)	(7.303)	(0.137)		(5.339)	(0.170)	(0.330)	(0.472)	(0.108)		(1.221)
Increase in large acquisition activity (within–firm component)	0.481***	0.229***	0.110***	0.502***	0.521***	0.419***	1.390***	1.449***	1.393*	1.185**	1.347***	1.642***
	(0.051)	(0.048)	(0.039)	(0.040)	(0.054)	(0.069)	(0.101)	(0.153)	(0.187)	(0.073)	(0.095)	(0.175)
Comparative small acquisition activity (between–firm component)	0.999	0.999	1.010	1.047**		1.030	1.061***	1.078***	1.079***	1.057***		1.193***
	(0.017)	(0.021)	(0.029)	(0.017)		(0.053)	(0.013)	(0.013)	(0.012)	(0.015)		(0.041)
Increase in small acquisition activity	1.062**	1.043	1.049	1.137***	1.067**	1.189***	0.963**	0.971*	0.976	0.950**	0.968*	0.912**
	(0.021)	(0.026)	(0.034)	(0.022)	(0.025)	(0.051)	(0.014)	(0.013)	(0.013)	(0.016)	(0.012)	(0.028)
Acquisition performance feedback	1.217	6.925	0.046	0.742	0.898	0.974	0.438	0.327	0.618	2.642	0.504	0.510
	(1.676)	(13.012)	(0.128)	(0950)	(1.101)	(1.366)	(0.398)	(0.276)	(0.509)	(2.663)	(0.400)	(0.462)
Performance above aspirations	1.004	1.013	0.994	0.992	1.006	0.997	1.011	1.008	1.011	1.001	1.015	1.013
	(0.018)	(0.020)	(0.034)	(0.018)	(0.020)	(0.018)	(0.014)	(0.012)	(0.011)	(0.014)	(0.016)	(0.013)
Performance below aspirations	1.051*	1.044	1.049	1.055*	1.051*	1.066**	1.028*	1.020	1.019	1.022*	1.026	1.023
	(0.022)	(0.028)	(0.045)	(0.024)	(0.024)	(0.022)	(0.013)	(0.011)	(0.011)	(0.013)	(0.014)	(0.013)
Growth above aspirations	1.127	1.488	3.095**	0.863	1.080	0.964	0.832	0.777	0.820	0.978	0.806	0.882
	(0.397)	(0.652)	(1.326)	(0.250)	(0.371)	(0.353)	(0.196)	(0.167)	(0.172)	(0.233)	(0.187)	(0.205)
Growth below aspirations	1.090	1.169	0.941	0.997	1.158	1.074	1.143	1.155	1.174	1.086	1.333	1.092
	(0.466)	(0.692)	(0.331)	(0.108)	(0.491)	(0.446)	(0.258)	(0.168)	(0.172)	(0.215)	(0.353)	(0.235)

(Continues)

Table A.II. (Continued)

	Momentum in large acquisitions						*Momentum in small acquisitions*					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Managerial overconfidence	1.048	1.143	1.464	1.332	0.981	1.068	1.482**	1.335*	1.352**	1.183	1.393**	1.463**
	(0.200)	(0.319)	(0.577)	(0.218)	(0.188)	(0.204)	(0.181)	(0.153)	(0.152)	(0.161)	(0.168)	(0.178)
Board independence	0.814	0.554	1.161	0.885	0.707	1.215	0.463	0.632	0.592	0.766	0.651	0.416
	(0.651)	(0.620)	(1.757)	(0.614)	(0.576)	(0.968)	(0.237)	(0.304)	(0.278)	(0.441)	(0.335)	(0.212)
Board size	1.021	1.028	1.010	1.020	1.032	1.019	1.056	1.057	1.053	0.990	1.046	1.059
	(0.057)	(0.080)	(0.104)	(0.455)	(0.057)	(0.055)	(0.034)	(0.032)	(0.032)	(0.034)	(0.034)	(0.034)
CEO stock–based compensation	1.661	2.553*	1.263	1.544	1.538	1.436	1.110	1.037	1.251	0.670	1.092	1.143
	(0.524)	(1.147)	(0.784)	(0.433)	(0.501)	(0.450)	(0.228)	(0.200)	(0.236)	(0.152)	(0.218)	(0.235)
CEO succession	0.857	0.741	1.082	0.636	0.944	0.914	1.092	0.991	0.901	0.990	1.113	1.067
	(0.195)	(0.233)	(0.452)	(0.178)	(0.212)	(0.207)	(0.151)	(0.130)	(0.117)	(0.151)	(0.153)	(0.147)
TMT turnover	1.019	1.142	0.888	0.984	0.981	1.003	0.886*	0.904	0.902*	0.931	0.880*	0.900
	(0.088)	(0.136)	(0.148)	(0.073)	(0.085)	(0.086)	(0.049)	(0.047)	(0.046)	(0.099)	(0.049)	(0.050)
Firm debt–to–equity ratio	1.002	0.998	0.998	0.999	1.022	1.003	1.001	1.003	1.002	1.000	1.009	1.001
	(0.007)	(0.005)	(0.007)	(0.007)	(0.016)	(0.007)	(0.004)	(0.004)	(0.004)	(0.004)	(0.009)	(0.004)
Firm stock market performance	0.999	1.000	0.998	1.001	0.999	1.000	1.001	1.000	1.000	1.000	1.001	1.001
	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm size	0.402***	0.301***	0.291***	0.809	0.377***	0.372***	0.955	0.860	0.711*	0.843	1.046	0.956
	(0.086)	(0.082)	(0.101)	(0.168)	(0.093)	(0.080)	(0.153)	(0.126)	(0.102)	(0.149)	(0.167)	(0.151)
Firm risk	0.020***	0.009***	0.009*	0.033***	0.011***	0.020***	0.149**	0.147**	0.149***	0.131**	0.187*	0.139**
	(0.020)	(0.012)	(0.017)	(0.269)	(0.013)	(0.020)	(0.093)	(0.086)	(0.084)	(0.089)	(0.128)	(0.086)
Firm diversification	0.881	0.750	0.710	1.229	0.934	0.884	1.072	1.092	1.136	1.149	1.063	1.067
	(0.192)	(0.227)	(0.285)	(0.227)	(0.200)	(0.189)	(0.149)	(0.143)	(0.147)	(0.176)	(0.143)	(0.148)

Table A.II. (Continued)

	Momentum in large acquisitions						*Momentum in small acquisitions*					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Ratio of cross−border acquisitions	1.242**	1.301*	1.334*	1.069	1.235*	1.021	0.950	0.931	0.923	0.174**	0.942	1.018
	(0.098)	(0.136)	(0.194)	(0.083)	(0.106)	(0.098)	(0.057)	(0.055)	(0.054)	(0.071)	(0.050)	(0.072)
Industry's large acquisitions activity	5.401**	44.842*	228.095	5.781**		141.339***	3.098**	15.319***	1.393*	3.749*		40.659***
	(2.813)	(70.631)	(729.762)	(3.758)		(194.994)	(1.135)	(11.539)	(0.187)	(2.123)		(40.039)
Industry's small acquisitions activity	0.985	1.113	1.136	0.971		1.066	1.003	1.030	1.049	0.964		1.087
	(0.061)	(0.090)	(0.128)	(0.086)		(0.174)	(0.043)	(0.039)	(0.037)	(0.076)		(0.123)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak instruments	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
N	6631	6631	6631	6631	1590	6631	6631	6631	6631	6631	2965	6631

Notes: Models 1 to 6 include analyses of the large acquisition momentum dependent variable, and Models 7 to 12 refer to the small acquisition momentum dependent variable. For comparison, in Models 1 and 7, we present the results of the main analyses from the manuscript. In the main analyses, we use the mean of the relative acquisition size in the sample as the cut-off between large and small acquisitions. In our robustness tests, we also test the following two alternative cut-offs: mean + ½ standard deviation (Models 2 and 8) and mean + 1 standard deviation (Models 3 and 9). In our robustness tests, we also define a firm−specific acquisition size threshold (ASThreshold) based on the arithmetic mean and standard deviation of all acquisitions performed by the focal firm (Models 4 and 10). In our definition of the independent variable of interest in the manuscript, we use the number of acquisitions larger or smaller than the size threshold performed during the previous three−year observation window, which is commonly used in the literature. In Models 5 and 11, we present the results using the fixed−effects model. Because the fixed−effects specification controls for all between−firm variables, these variables are absent from the models. In Models 6 and 12, we use a one−year window as a robustness test. Odds ratios reported with standard errors of the coefficients in parentheses.
$^*p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$ (two−tailed tests for all variables).

Table A.III. Robustness tests

	Momentum in large acquisitions						Momentum in small acquisitions					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Comparative large acquisition activity (between−firm component)	3.226***	3.296***	3.275***	1.407***	2.157***	2.335***	2.141***	2.102***	2.117***	1.383***	1.337***	1.475***
	(0.300)	(0.308)	(0.308)	(0.100)	(0.242)	(0.219)	(0.174)	(0.170)	(0.171)	(0.076)	(0.121)	(0.105)
Increase in large acquisition activity (within−firm component)	0.471***	0.481***	0.466***	0.758*	0.472***	0.513***	1.393***	1.391***	1.385***	1.046	1.353***	1.492***
	(0.050)	(0.051)	(0.050)	(0.090)	(0.040)	(0.057)	(0.101)	(0.101)	(0.101)	(0.070)	(0.074)	(0.119)
Comparative small acquisition activity (between−firm component)	1.030	0.999	0.998	0.978	1.015	0.980	1.059***	1.061***	1.062***	1.205***	1.046***	1.010
	(0.017)	(0.017)	(0.017)	(0.015)	(0.017)	(0.015)	(0.013)	(0.013)	(0.013)	(0.015)	(0.014)	(0.010)
Increase in small acquisition activity	1.062**	1.062**	1.065**	1.049	1.068***	1.041*	0.963**	0.963**	0.961**	0.883***	0.728***	0.965**
	(0.023)	(0.021)	(0.022)	(0.028)	(0.129)	(0.021)	(0.014)	(0.014)	(0.014)	(0.015)	(0.043)	(0.013)
Acquisition performance feedback	1.088	1.217	1.175	2.837	0.910	2.362	0.386	0.458	0.472	0.766	0.347	0.517
	(1.472)	(1.676)	(1.625)	(4.009)	(1.220)	(3.342)	(0.346)	(0.416)	(0.431)	(0.558)	(0.346)	(0.510)
Performance above aspirations	0.997	1.004	1.005	0.993	0.984	0.987	1.008	1.010	1.009	1.011	1.001	1.004
	(0.019)	(0.018)	(0.018)	(0.019)	(0.022)	(0.025)	(0.014)	(0.014)	(0.014)	(0.012)	(0.014)	(0.018)
Performance below aspirations	1.052*	1.051*	1.050*	0.997	1.057*	1.073**	1.028*	1.027*	1.027*	1.011	1.022	1.027
	(0.022)	(0.022)	(0.022)	(0.009)	(0.026)	(0.029)	(0.013)	(0.013)	(0.013)	(0.009)	(0.014)	(0.016)
Growth above aspirations	1.000	1.127	1.189	1.512	1.425	1.306	1.000	0.843	0.844	0.764	0.649	0.874
	(0.000)	(0.397)	(0.416)	(0.544)	(0.504)	(0.544)	(0.000)	(0.199)	(0.202)	(0.148)	(0.196)	(0.254)
Growth below aspirations	1.000	1.090	1.038	1.127	0.918	1.133	1.000	1.147	1.121	0.978	1.231	1.169
	(0.000)	(0.466)	(0.444)	(0.261)	(0.395)	(0.530)	(0.000)	(0.259)	(0.252)	(0.025)	(0.348)	(0.294)
Managerial overconfidence	1.009	1.048	1.044	0.953	1.087	0.909	1.501***	1.454**	1.480**	1.512***	1.326*	1.337*
	(0.192)	(0.200)	(0.201)	(0.203)	(0.211)	(0.189)	(0.182)	(0.178)	(0.182)	(0.161)	(0.187)	(0.186)
Board independence		0.814	0.817	19.759***	0.684	1.164		0.481	0.480	0.793	0.561	0.312*
		(0.651)	(0.655)	(17.288)	(0.558)	(1.002)		(0.246)	(0.247)	(0.350)	(0.332)	(0.183)

(Continues)

Table A.III. (Continued)

	Momentum in large acquisitions						Momentum in small acquisitions					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Number of independent board members	0.975						0.950				–	
	(0.076)						(0.045)				–	
Board size	1.061	1.021	1.026	0.981	1.032	1.019	1.079	1.056	1.046	1.021	1.061	1.086*
	(0.076)	(0.057)	(0.057)	(0.064)	(0.060)	(0.061)	(0.044)	(0.034)	(0.034)	(0.033)	(0.043)	(0.041)
CEO stock–based compensation	1.011**	1.661	1.674	1.557	1.631	1.655	0.999	1.103	1.093	1.042	1.110	0.976
	(0.004)	(0.524)	(0.530)	(0.540)	(0.542)	(0.586)	(0.004)	(0.227)	(0.226)	(0.181)	(0.272)	(0.237)
CEO succession	0.901	0.857	0.875	1.182	0.689	0.877	1.125	1.098	1.136	0.970	1.066	1.100
	(0.202)	(0.195)	(0.199)	(0.267)	(0.167)	(0.218)	(0.153)	(0.152)	(0.157)	(0.112)	(0.176)	(0.176)
TMT turnover	1.031	1.019	1.024	0.783*	1.057	1.016	0.890*	0.883*	0.887*	0.974	0.953	0.936
	(0.089)	(0.088)	(0.089)	(0.078)	(0.096)	(0.096)	(0.049)	(0.049)	(0.050)	(0.046)	(0.063)	(0.059)
Firm debt–to–equity ratio		1.002	1.002	0.999	1.002	1.030		1.001	1.001	1.001	1.001	1.020
		(0.007)	(0.007)	(0.002)	(0.015)	(0.016)		(0.004)	(0.004)	(0.003)	(0.010)	(0.012)
Firm debt	1.000**						1.000					
	(0.000)						(0.000)					
Firm equity	1.000						1.000					
	(0.000)						(0.000)	–	–	–		–
Firm stock market performance	1.000	0.999	0.999	0.998	0.999	0.998	1.001	1.001	1.000	1.000	1.001	1.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm size	0.404***	0.402***	0.427***	0.696	0.339***	0.469**	0.931	0.950	0.937	1.016	1.012	1.048
	(0.087)	(0.086)	(0.092)	(0.173)	(0.078)	(0.111)	(0.151)	(0.152)	(0.151)	(0.146)	(0.185)	(0.189)
Firm risk	0.022***	0.020***	0.020***	8.779**	0.051**	0.032**	0.166**	0.143**	0.138**	0.017***	0.270*	1.350
	(0.021)	(0.020)	(0.019)	(6.619)	(0.051)	(0.037)	(0.102)	(0.089)	(0.087)	(0.009)	(0.187)	(1.014)

(Continues)

Table A.III. (Continued)

	Momentum in large acquisitions						Momentum in small acquisitions					
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*	*Model 11*	*Model 12*
Firm diversification	0.856	0.881	0.883	0.734	0.869	0.923	1.025	1.063	1.046	1.089	1.131	1.142
	(0.187)	(0.192)	(0.193)	(0.190)	(0.190)	(0.223)	(0.143)	(0.148)	(0.146)	(0.140)	(0.180)	(0.183)
Ratio of cross−border acquisitions	1.247*	1.242**	1.240**	0.949	1.224*	1.186*	0.943	0.951	0.912	1.140	0.993	0.919
	(0.109)	(0.098)	(0.099)	(0.128)	(0.102)	(0.094)	(0.057)	(0.057)	(0.056)	(0.089)	(0.066)	(0.053)
Industry's large acquisitions activity	4.623**	5.401**	5.623***	1.278	2.131	2.461*	3.378**	3.042**	3.292**	1.865**	4.002**	1.343
	(2.414)	(2.813)	(2.940)	(0.454)	(1.255)	(1.015)	(1.250)	(1.114)	(1.206)	(0.414)	(1.721)	(0.369)
Industry's small acquisitions activity	0.987	0.985	0.980	1.066	1.002	0.972	0.994	1.005	0.992	1.018	0.943	0.974
	(0.061)	(0.061)	(0.061)	(0.042)	(0.067)	(0.039)	(0.044)	(0.043)	(0.043)	(0.024)	(0.046)	(0.025)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak instruments	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	6682	6631	6631	5975	2987	3004	6682	6631	6631	5975	2987	3004

Notes: Models 1 to 6 include the analyses of the large acquisition momentum dependent variable, and Models 7 to 12 refer to the small acquisition momentum dependent variable. In the main analyses, we use some ratios as control variables. In Models 1 and 7, we substitute the ratio variables with their numerators and denominators. Amburgey and Miner (1992, p. 335) defined strategic momentum as '*the tendency to maintain or expand the emphasis and direction of prior strategic actions in current strategic behavior*' (i.e., maintaining or increasing the volume change). In Models 2 and 8, we present the analyses in which we defined momentum only when the volume of acquisition increases (i.e., we do not include situations in which the current year value of deals is equal to the value of deals during the previous year). In Models 3 and 9, we perform a further step and present analyses in which we defined momentum only when the volume of acquisition increases by at least 10%. In models 4 and 10, we replaced the volume of acquisitions by the number of acquisitions in the dependent variables. To better control for the differences among firms, in Models 5 and 11, we present analyses in which we use the Z score of our peak variable. Finally, in Models 6 and 12, we exclude the firm−year observations with zero acquisitions. Odds ratios reported with standard errors of the coefficients in parentheses.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two−tailed tests for all variables).