THE PERFORMANCE IMPLICATIONS OF PARTICIPATING IN AN ACQUISITION WAVE: EARLY MOVER ADVANTAGES, BANDWAGON EFFECTS, AND THE MODERATING INFLUENCE OF INDUSTRY CHARACTERISTICS AND ACQUIRER TACTICS

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Acquisitions often occur in waves within industries. We extend theoretical understanding of such waves by drawing upon research on early mover advantage and bandwagon effects to develop arguments regarding the likely performance potential of participating at different points in an acquisition wave. In line with our theoretical model, we find acquisition performance is higher for early movers but lower for acquirers that participate at the height of the acquisition wave. Although we find this general performance trend, our findings suggest both industry and acquirer characteristics influence the degree to which firms seize early mover advantages or fall prey to bandwagon pressures.

Merger waves—short periods of intense merger activity—have been a part of economic life in the United States since the 19th century. In fact, over 50 percent of the acquisitions that occurred between 1890 and 1990 took place during one of four merger waves (Stearns & Allan, 1996). The first wave took place at the turn of the 20th century and tended to consist of horizontal mergers, which created industrial giants in steel, oil, and mining. The second wave occurred during the 1920s and was marked by vertical mergers (i.e., between firms with prior buyer-seller relationships), which resulted in increased control over scarce resources and operating economies. The third wave occurred during the 1960s and produced major economic conglomerates because of its emphasis on mergers between unrelated firms (Melicher, Ledolter, & D’Antonio, 1983). The fourth wave occurred during the 1980s and, though more diverse than the earlier waves, was marked by hostile acquisitions, junk bond financing, and “megadeals.”

Although most research on acquisition waves has been conducted at the aggregate level, monitoring activity over a broad range of industries, acquisition waves have also occurred within industries; the advertising industry witnessed a wave in the late 1960s and 1970s, and the radio industry did so in the 1990s. Despite the existence of merger waves within industries, few studies have focused on such industry-level activity (for exceptions, see Carow, Heron, and Saxton [2004] and Harford [2005]). We believe examining acquisition performance over the course of an industry-level acquisition wave to assess which firms win and lose by participating in it is a fruitful area for theoretical development and examination. Research shows that acquiring firms on average experience null or negative returns from acquisitions (e.g., King, Dalton, Daily, & Covin, 2004), yet it also suggests that firm and market characteristics can affect acquirer returns (e.g., Capron & Pistre, 2002; Haleblian & Finkelstein, 1999). In line with this contingent perspective, we argue that position within a wave influences the acquisition returns of an acquiring firm. In a recent study on this question, Carow et al. (2004) examined the performance implications of acquisitions within waves. They argued firms moving early in a wave would benefit from early mover advantages. Results showed the combined returns of acquirer and target firms were better for early acquisitions than for later acquisitions within an acquisition wave. When they focused only on acquirer returns, however, they found no general dif-
ferences between the performance of early and later acquirers. However, they did find that a subset of early acquiring firms, those that appeared to rely on “asymmetric information,” experienced higher returns.

We build upon this line of research by examining the performance implications of merger waves across a range of industries. We develop theoretical arguments that extend this line of research in two fundamental ways. First, we build arguments related to expected performance not only for firms that act early in a wave, but also for firms that act later in the wave, thereby examining the effect of the entire wave pattern on firm performance. Seeking better understanding of wave patterns, we drew on both the “first mover advantage” literature in strategic management and marketing (e.g., Lieberman & Montgomery, 1988; Kerin, Varadarajan, & Peterson, 1992) and the “bandwagon” literature in management (e.g., Abrahamson & Rosenkopf, 1993; Fiol & Connor, 2003). We argue that early movers have the greatest potential to benefit from acquisitions and that firms acting later in a wave are likely to experience losses as a result of their acquisitions. In doing so, we follow on the research of Carow and colleagues (2004) by discussing early mover advantages, but we also enrich understanding of the drivers and consequences of participating in an acquisition wave by developing a full argument related to the bandwagon pressures firms face during waves. As part of this more comprehensive view of positioning within an acquisition wave, in our study we tested for both a linear negative performance trend over the entire wave, whereby late movers would experience the worst performance, and also for possible curvilinear performance effects over the entire wave, in which firms acting at the height of the wave would experience the lowest performance. By developing theoretical arguments regarding firms acting at all stages of an acquisition wave, our results have the potential to extend understanding of acquisition waves.

Our second major contribution is to develop theoretical arguments about additional factors that determine the likely winners and losers in acquisition waves. Specifically, we argue that the both a firm’s external environment and factors inside the firm likely moderate the performance consequences of its participating at different stages of an acquisition wave. Outside firms, we explore the degree to which key industry characteristics—industry munificence and dynamism—moderate the relationship between wave position and acquisition performance. In examining the role of environmental conditions, we extend existing research by not only considering the environment as a factor that creates waves (Mitchell & Mulherin, 1996), but also as a boundary condition for firms’ wave-performance relationship.

Inside firms, we examine the extent to which a firm’s acquisition behaviors, which we label “acquisition tactics,” moderate the relationship between wave position and acquisition performance. First, we examine the consequences of a firm’s undertaking a series of acquisitions within a single industry wave. We argue that the more acquisitions a firm makes (the more it is a serial acquirer), the more its behavior is likely to be driven by organizational routines (Nelson & Winter, 1982). Further, firms employing this acquisition tactic will be less likely to either benefit from early mover advantages or suffer the consequences of bandwagon pressures. Second, we posit that the type of financing (cash vs. stock) used in an acquisition will moderate the effect of position within a wave on acquisition performance. The type of financing used may signal the degree to which an acquirer holds asymmetric information (Carow et al., 2004; Myers & Majluf, 1984) and consequently may influence an acquirer’s ability to seize early mover advantages or to be affected by bandwagon pressures. Hence, by examining the potentially moderating influence of environmental and acquirer characteristics, we offer theoretical insights regarding which firms win and which lose at all stages of an acquisition wave.

Moreover, we see this study as responding to the call issued by King et al. (2004) for new theoretical and empirical efforts to understand the range of performance consequences associated with acquisitions. They argued that although the bulk of research on mergers and acquisitions shows that, on average, positive acquisition returns are elusive for acquiring firms, understanding of the factors explaining the dispersion of acquisition returns is scanty. We aim to help fill this void by developing theoretical arguments about how position in an acquisition wave may influence the returns acquiring firms can expect to receive as well as the moderating influence of environmental conditions and acquirer tactics on acquisition performance within the wave. Therefore, this study may help improve understanding of how acquisition timing, in combination with acquirer tactics and environmental factors in a target industry, influence acquisition performance.

THEORY AND HYPOTHESES

The Influence of Position in an Acquisition Wave

We argue firms are more likely to experience performance benefits when acting early but nega-
tive returns when acting later in an acquisition wave. We first discuss the anticipated benefits of moving early, then the costs of moving later, and then close this section with a discussion of the resulting performance pattern over the course of an acquisition wave.

In line with arguments first developed by Carow et al. (2004), we begin with the argument that firms acting early in an acquisition wave may benefit from advantages accruing to early actors. Research findings have been somewhat mixed, yet a number of researchers have found empirical evidence that early movers in markets can gain certain competitive advantages, in particular, strong sales positions (Makadok, 1998; Mascarenhas, 1992; VanderWerf & Mahon, 1997). Still, it is an open question whether the types of advantages that may accrue to first movers translate to early acquirers in an acquisition wave. Therefore, we assess the applicability of these benefits to the acquisition environment.

Although numerous first mover advantages have been posited for pioneers in product-markets (e.g., Frynas, Mellahi, & Pigman, 2006; Lieberman & Montgomery 1988, 1998; Kerin et al., 1992), we see advantages associated with market preemption as the most applicable to acquisition waves. The market pioneering literature (e.g., Lieberman & Montgomery, 1988, 1998) has defined preemption as (1) a firm’s ability to preempt market opportunities by building relationships with customers before others enter a market and (2) preempting competition by tying up critical assets the firm may leverage to its benefit. In examining the potential benefits of moving early in an acquisition wave, we focus on the second potential benefit of preemption, capturing critical assets.

Early movers may be acting on asymmetric informational advantages over current and potential competitors (Peteraf, 1993). This asymmetric information may act as an ex ante barrier to competition and offer these acquiring firms three potential advantages over later movers. First, since acquisitions are common actions firms use to access strategic factor markets (Saxton & Dollinger, 2004), seeing opportunities earlier than the competition may yield an advantage in the cost of acquiring strategic assets. An early-moving firm’s foresight may allow it to acquire a target firm at a lower cost than their competition as the early mover acquires key resources in a market and integrates them before competitors perceive their true value. By preempting the market and acquiring assets before their full value is known to the larger market, firms position themselves to serve the market more effectively and efficiently than their later-moving competitors (Sarkar, Cavusgil, & Aulakh, 1999; Spender, 1996).

Second, asymmetric information may also benefit early movers by allowing them to select superior acquisition targets that allow exploitation of the opportunities associated with an acquisition wave. Regardless of whether a wave is associated with a regulatory change, a technological shift, market convergence, or other market change, by acting early an acquiring firm can select superior resources, as the pool of available targets is larger early in the wave. The firm’s foresight may allow it to gain control of critical resources (e.g., Finkelstein, 1997; Saxton & Dollinger, 2004) and accumulate a distinctive set of resources (Barney, 1991; Peteraf, 1993), providing the possibility of enduring economic rents.

Finally, by acting early, firms can increase the likelihood they will seize the benefits associated with cospecialization of assets. A target firm may provide superior value to a particular acquiring firm because of opportunities associated with private synergies, which may arise from particular economies of scope, market power, or information that exist when a particular pair of firms is combined (Mahoney & Mahoney, 1993). Each firm holds a set of resources that is more valuable when combined with the other set than it would be if held by a stand-alone firm or if held in combination with another firm. By acting early on superior information and preempting potentially competing acquiring firms, early movers can assess a larger pool of target firms, raising the possibility they will identify target firms that offer beneficial bundles of cospecialized assets.

At the same time, a number of scholars have argued that early movers may also face significant disadvantages (e.g., Boulding & Christen, 2001). Two of the primary sources of disadvantages that early movers may face are market dynamics and cost disadvantage (Cho, Kim, & Rhee, 1998). Markets may shift because of changes in consumer tastes, technologies, or other fundamental factors. These market dynamics may quickly erode any advantage early movers have staked out and degrade the value of their resource bases, leaving them at a disadvantage relative to later entrants who develop resource sets better fitted to the dynamic environment. We believe market dynamics play a significant role. Consequently, as we will discuss later in this section, in the study we assessed market stability/dynamism as a moderator of the value of moving early. Also, in pioneering markets, early entrants may incur significant costs in relation to the development of technology and customer awareness about a new product or service. Later movers may free ride, benefiting from these pioneering costs without incurring the same levels of
cost in imitating the early movers (Cho et al., 1998). It should be noted, however, that high pioneering costs is less of a factor in an acquisition setting than in a product-pioneering setting, where a following firm can imitate an early mover through reverse engineering or other means of copying a product, usually at much less cost than the pioneering firm, to initially develop the product. In contrast, a firm participating in an acquisition wave is buying a tangible asset, the acquired firm, and to participate in the wave, a later mover has to purchase the same type of asset, often at a higher price, given appreciation in acquisition costs during a wave, and therefore has much less of an opportunity to benefit as a free rider.

Early movers can gain from potential advantages associated with asymmetric information; firms moving later in an acquisition wave are likely to experience negative acquisition returns not only because they are unable to seize early mover advantages but also because they are likely to face significant costs associated with following a fashionable acquisition trend. Our primary argument is that many firms will enter a rising acquisition wave motivated by bandwagon pressures (Abrahamson & Rosenkopf, 1993; Fiol & O’Connor, 2003) rather than by rational assessments of the strategic value of undertaking acquisitions. Bandwagons occur when firms undertake a strategic action such as a new-product introduction, technological innovation, or acquisition because of the previous actions of other firms. In essence, the diffusion of an action across a population is due to the social pressures caused by others undertaking the same action (Fiol & O’Connor, 2003). These pressures can have both institutional and competitive elements (Abrahamson & Rosenkopf, 1993). Institutional bandwagon pressures exist when nonadopters perceive social pressures to mimic the action of early adopters to avoid appearing different from these adopters (DiMaggio & Powell, 1983). Competitive bandwagon pressures exist when nonadopters fear missing out on competitive opportunities early adopters appear to be seizing.

Firms jumping on a bandwagon follow different decision evaluation processes than early adopters. Rather than undertaking a comprehensive analysis of strategic opportunities and the value of alternative courses of action, firms following a bandwagon restrict the scanning they undertake, are less likely to consider contradictory information, and are less mindful in their decision evaluation (Fiol & O’Connor, 2003). Instead, they focus on social cues, assume others have superior information, and undertake actions without fully considering their strategic implications. Consequently, they become less accurate in their decision assessments, more prone to overreact to new information, and overly committed to matching or outdoing their competition (Vaaler & McNamara, 2004). Also, managers facing these pressures are likely to underestimate the risks they face in undertaking a strategic action (McNamara & Bromiley, 1997).

In an acquisition wave setting, this set of decision characteristics will likely lead to inferior acquisition returns. Since followers perceive they must participate in the wave and are less likely to fully assess the targets, they choose from the limited set of acquisition targets that remain, increasing the likelihood they acquire an inferior target or a target that does not fit well with their existing assets. Second, they may experience greater acquisition costs since the bandwagon pressures lead them to collectively bid up the prices of the remaining targets (Song & Walkling, 2000). In sum, firms acting later in the acquisition wave may not be acting in a comprehensively rational manner, increasing the chances they are taking ill-advised actions that result in inferior acquisition returns.

Combined, the early mover and bandwagon arguments suggest that acquisition performance declines over the course of an acquisition wave.

**Hypothesis 1.** The returns to an acquisition are negatively related to the position of the acquisition in an acquisition wave.

Although we expected to find a generally negative trend in returns over the course of a wave, it is also possible acquisition returns will exhibit a curvilinear pattern over a wave. Early mover advantages likely lead to the best acquisition performance at the beginning of the wave, and bandwagon pressures likely lead to poor acquisition performance as the wave peaks. However, late in the wave, bandwagon pressures are likely to subside, allowing firms to undertake more rational assessments of acquisition targets and their value. Also, the rising pricing pressure that occurs as a wave peaks is likely to subside as firms reflect on the value potential in the focal market once the acquisition fury declines. This argument suggests that acquisition performance may exhibit a curvilinear relationship over a wave period, with returns bottoming out after the peak has passed but showing some improvement as the wave completes itself. However, since we see no theoretical reason for latest movers to generate positive returns, we expect late acquirers to still experience lower returns than early acquirers.

**Hypothesis 2.** Acquisition returns exhibit a U-shaped pattern over the period of an acquisition.
tion wave, with early movers gaining the highest returns.

The Moderating Influence of Target Industry Characteristics

Although we expect to find a negative performance trend over the course of an acquisition wave, target industry characteristics are likely to moderate the relationship between position and performance. More specifically, we believe that two fundamental market attributes cause the shift in acquisition returns over an acquisition wave to be more extreme: industry munificence and stability.

Firms often undertake mergers and acquisitions to facilitate growth (Lubatkin, 1983; Penrose, 1959), possibly to meet growth goals they hold dear or goals resulting from outside stakeholder pressure. Consequently, firms scanning the environment for acquisition opportunities are likely to be more attracted to potential targets in munificent environments. Additionally, as acquisition waves build momentum in munificent industries, firms in those industries likely attract greater interest from potential acquirers. This interest may result in greater competition for targets and greater appreciation in the cost of acquisitions (Mitchell & Mulherin, 1996; Song & Walkling, 2000). In essence, the bandwagon pressures are stronger in munificent markets. Therefore, as an acquisition wave rises, later movers see the cost of acquisitions grow rapidly, since munificent markets are seen as especially attractive. Therefore, although the relative attractiveness of a munificent market makes early mover acquisitions potentially valuable, the benefits of this more munificent environment quickly erode as more suitors enter the market, bidding up asset prices in it. In view of these arguments, we hypothesize that the negative trend in returns to acquisitions over the stages in a merger wave will be more extreme in munificent markets.

Hypothesis 3. The degree of market munificence moderates the negative trend in returns over the course of a merger wave. In more munificent industries, the trend is stronger.

The degree of stability in an industry environment is also likely to moderate the relationship between position in an acquisition wave and acquisition returns. We posit that early mover advantages are more likely to accrue in stable rather than in dynamic markets. The ability of firms to preempt a market and lock in the most valuable assets by moving early is greater in stable markets, as the ability to identify and valuate assets is greater in more stable environments. Firms moving later in acquisition waves in stable markets are likely to find themselves bidding for assets inferior to those absorbed by early movers. In stable markets, technological uncertainty or discontinuity is less likely to exist, and thus the gateway to entry for later movers depends more on their intractable resource endowments and know-how than on luck or opportunity. In addition, the ability of early mover firms to establish technological leadership is greater in stable than in dynamic markets (Schmalensee, 2000).

In more dynamic markets, the value of moving early is unclear, as any advantage a firm stakes out can be quickly eroded or imitated (D’Aveni, 1994; Schmalensee, 2000). Additionally, the true value of acquisition targets may not be stable or knowable early in acquisition waves in dynamic markets. Consequently, later movers may have the opportunity to bid on the best resources available, since they may have been passed over during the first stages of the wave or emerged after those first stages. From a different perspective, acquiring firms in dynamic markets may undertake acquisitions as a hedge against market uncertainty. These acquisitions may be efforts to seize early mover advantages, but the ultimate value of these real options is difficult to predict in dynamic markets (Folta & O’Brien, 2004), suggesting that their performance will not be as strong as it would be in more stable markets. Additionally, many acquisitions in dynamic markets may not be aimed at building early mover advantages. Instead, firms may simply use acquisitions as real options they can leverage once market uncertainty clears (Villalonga & McGahan, 2005). We therefore hypothesize that the negative trend in the returns to acquisitions over the stages of a merger wave will be more extreme in stable markets.

Hypothesis 4. The degree of market dynamism moderates the negative trend in returns over the course of a merger wave. In more stable industries, the trend is stronger.

The Moderating Influence of Acquirer Tactics

In addition to examining the moderating influence of industry environment, we examined two key tactics or behaviors acquirers may employ: (1) the degree to which an acquirer is serial and (2) the type of financing used to undertake an acquisition. We argue that these tactics interact with position in an acquisition wave to influence the performance of an acquisition.

First, researchers have argued and found evi-
dence that some firms undertake acquisitions on a regular basis, as part of their core business routines (Ginsberg & Baum, 1994; Haleblian, Kim, & Rajagopalan, 2006). These firms look to expand their business portfolios and organizational size through routinized acquisition processes (Nelson & Winter, 1982). Within a wave, these serial acquirers purchase numerous targets. We posit that serial acquirers do not experience the same pattern of acquisition performance over a wave as one-off or infrequent acquirers.

The more a firm is a serial acquirer, the less likely it is to either gain early mover benefits or suffer from the costs associated with bandwagon pressures, because to a large extent internal routines drive its acquisition behavior. Steadier acquisition performance over an entire wave is the result. Specifically, acquisition routines lead to the development of procedural memory that influences the information search the acquiring firm undertakes, causing it to focus on specific information items consistent with the routines and to avoid other information (Betsch, Haberstroh, Haar, & Fiedler, 2001; Cohen & Bacdayan, 1994). A serial acquirer may scan its environment looking for appropriate acquisition targets as part of its acquisition routine, but this routine is not aimed at identifying the emerging opportunities that drive acquisition waves, leaving the firm unlikely to seize early mover advantages. Instead, its procedural memory is focused on general acquisition issues, such as target value assessment, target fit with the strategic trajectory of the firm, and acquisition integration (Zollo & Singh, 2004).

At the same time, the routines of serial acquirers reduce the likelihood they will acquire in response to bandwagon pressures. Firms that fall prey to bandwagon pressures suspend their own rational assessment of acquisition opportunities and the value of targets and rely instead on other firms’ information, which they perceive as superior. However, since routines that guide the procedural actions of firms are tacit (Zollo & Singh, 2004), those that acquire out of routine do not suspend their normal evaluation of acquisition targets. Instead, given the institutionalization of learning that occurs as the routines are developed (Haleblian et al., 2006), they pursue their normal routine information search and assessment of acquisition targets, regardless of bandwagon pressures. Thus, they are less likely to overpay for a target or pursue an acquisition opportunity that does not meet the thresholds used in their routinized evaluation processes. Together, these arguments suggest more consistent performance over the course of an acquisition wave for serial, as compared to infrequent, acquirers.

Hypothesis 5. The degree to which an acquiring firm is a serial acquirer moderates the negative trend in returns over the course of a merger wave. For serial acquirers, the trend is weaker.

The type of financing used by acquirers also likely affects the relationship between position in a wave and acquisition performance (Carow et al., 2004). More specifically, the performance trend over a wave will be stronger for stock-based acquisitions. Cash financing is often seen as a signal that a firm has great confidence in an acquisition and may possess asymmetric information (Eckbo, Grammario, & Heinkel, 1990; Myers & Majluf, 1984). A confident, information-gifted acquirer relies on cash because using cash allows its stockholders to benefit from the capital appreciation associated with the acquisition, rather than sharing this value appreciation with the target stockholders, as in stock-based acquisitions. Thus, cash-financed acquisitions should “outperform” stock-financed ones, since firms with asymmetric information should use cash financing regardless of the stage within a wave when the acquisitions are made.

However, the difference between the two types of financing is likely greater in later stages of a wave. Firms falling prey to bandwagon pressures are more likely to use stock financing, since they are unlikely to perceive themselves as having superior information. Instead, they mimic others in their social comparison group who they see as possessing superior information. Consequently, the type of financing used may signal whether firms are acting in response to bandwagon pressures or in response to their own strong information sets. Therefore, although the performance of acquisitions financed by both cash and stock likely declines over the course of an acquisition wave, this trend will be stronger for firms using stock financing.

Hypothesis 6. The type of financing used moderates the negative trend in returns over the course of a merger wave. For firms relying more heavily on stock to finance acquisitions, the trend is stronger.

Combined, these arguments provide insight into which firms win and which lose by participating in an acquisition wave. We expect a generally negative trend throughout the bulk of a wave period, but we posit that the nature of the relationship between temporal position in the wave and acquisition performance will vary with the acquisition tactics of acquirers and the conditions in the target markets.
METHODS

Sample

We assessed industry acquisition waves from 1984 through 2004. In our review of the literature, we identified two methods used to identify industry acquisition waves (Carow et al., 2004; Harford, 2005) and combined elements of these two methods. We first identified potential waves following a method similar to that of Carow and coauthors (2004) in which we used data from the Securities Data Corporation (SDC) and calculated the number of acquisitions for every four-digit SIC industry by year.\(^1\) We then looked for relatively short periods of heightened acquisition activity, limiting our wave periods to a maximum of six years, in view of Carow et al.’s (2004) work. Most of the waves they identified moved from inception to peak within three years, suggesting that acquisition waves tend to play out within six years.\(^2\) We also required an acquisition pattern in which the peak year showed a greater than 100 percent increase in activity over the first (or base) year, followed by a decline in acquisition activity of greater than 50 percent from the peak year.

By drawing on the logic of wave identification used by Harford (2005), we validated whether each increase in industry acquisition activity was a true wave and not a random occurrence. Harford identified waves by assessing whether acquisition frequency increased by an amount greater than would be expected by chance. Following his logic, we calculated the total number of acquisitions that occurred within an industry during a presumed wave. We then simulated 100 distributions of those acquisitions over the same period, randomly assigning each acquisition to one of the years in the period. We assessed the likelihood the number of acquisitions in the peak year of our presumed acquisition wave would have occurred by chance. In line with Harford’s threshold, the actual peak concentration in all of our acquisition waves exceeded the 95th percentile in the simulated distribution set. These results confirm that the acquisition waves we identified were not the consequence of a random distribution but instead reflected nonrandom, heightened acquisition activity over these periods.\(^3\)

This process yielded 12 acquisition waves occurring in 12 industries (as defined by four-digit SIC code) and containing a total of 3,194 majority, completed acquisitions. The waves we identified spanned a wide range of sectors, including manufacturing, logistics, communications, retailing, hospitality, and service, encompassing both low- and high-technology industries. “Completed” acquisitions were those in which the bidding firm went beyond making an offer and distributed cash or securities to obtain the stock or assets of the target company, and “majority acquisitions” were those in which target ownership by the acquiring firm exceeded 50 percent. In Table 1, we identify the industries that experienced waves and the wave years.

Data on acquisition waves, announcement dates, and several of the control variables (discussed below) came from the SDC database for 1984–2004. Financial data were obtained from COMPSTAT and market return data were gathered from the Center for Research in Securities Pricing (CRSP).

Dependent Variable: Acquisition Returns

The importance of an event such as an acquisition can be assessed by the price change in the acquirer’s security during a period surrounding the event. This price change is called an abnormal return and is calculated as the difference between the observed return for a security and the predicted or normal return for the same security (Brown & Warner, 1980, 1985). Thus, the impact of an event on a firm is measured by the portion of the firm’s returns that is unanticipated by an economic model of anticipated, or normal, returns. This calculation can be expressed mathematically as follows:

\[ e = R_i - (\alpha_i + \beta_i R_{mt}) \]

where \( R_i \) is the return on stock \( i \) for day \( t \), \( R_{mt} \) is the return on the market portfolio for day \( t \), \( \alpha_i \) is a constant, and \( \beta_i \) is the beta of stock \( i \) (a measure of its nondiversifiable risk).

It is assumed that \( \alpha \) and \( \beta \) are stable and are calculated during the estimation period. The esti-

\(^1\) We excluded financial services industries because degree of regulation, asset structures, and stockholder reactions to acquisitions differ for these industries and other types of industries (Carow et al., 2004; Cornett & De, 1991).

\(^2\) Our findings hold if we limit our waves to five- or four-year periods.

\(^3\) This examination also provided further evidence our six-year window was appropriate. Using the same cutoff for the rate of increase and decrease in acquisition frequency, we found longer wave periods did not typically meet the Harford random distribution cutoff test.
The information period used in this study was 250 days, measured from 295 days before each event to 45 days before it. To determine the influence of an event on a firm, one averages abnormal returns over an event window. If no information has leaked out prior to the event, each abnormal return can be calculated on the date it becomes publicly available. But research has shown that information on acquisitions sometimes leaks out to some market participants before it reaches others (Asquith, 1983). Also, announcement dates reported in the SDC data sometimes differ from those reported in the Wall Street Journal. Hence, to increase the likelihood we captured an announcement date within our abnormal returns window, we used a medium-term event window ($10-15$ days). Specifically, we computed abnormal returns from 5 trading days before to 15 trading days after the announcement of an acquisition event. In addition, we repeated analyses using smaller windows (such as day $5$ and day $3$) to examine the sensitivity of our findings (McWilliams & Siegel, 1997) and obtained consistent results.

Research has shown that ex ante measures of acquirer abnormal returns are correlated with ex post measures of acquisition performance, demonstrating that event study methodology has predictive validity. For example, a strong, positive relationship has been found between abnormal stock returns at merger announcements and postmerger increases in operating cash flows (Healy, Palepu, & Ruback, 1992). In addition, unsuccessful divestitures, compared with successful ones, are associated with significantly lower acquirer returns at the time of acquisition announcement, suggesting that market participants may reasonably forecast subsequent acquisition performance (Kaplan & Weisbach, 1992). Thus, existing evidence on event study methodology’s predictive validity is consistent with our assumption that abnormal returns are valid indicators of acquisition performance.

Although other strategic management studies have used accounting-based measures of acquisition performance, such as return on assets (e.g., Ramaswamy, 1997), there are several reasons to believe that cumulative abnormal returns (CARs) are the more appropriate performance measure. First, acquisition effects are not immediately reflected in the financial statements of an acquirer, because it often takes six months to three years before the acquirer realizes the effects (Rhoades, 1994). During this period, many confounding factors, such as changes in product mix, investment strategy, and management, as well as execution of additional acquisitions, may affect firm performance. In addition, accounting-based performance measures can be misleading because accounting procedures are not uniform across firms and industries (Bentson, 1985). In keeping with these arguments, our systematic review of the empirical acquisition literature indicates event study methodology (and, hence, cumulative abnormal returns) is the most frequently used analytical approach for measuring acquisition performance (e.g., Capron & Pistre, 2002; King et al., 2004).

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**TABLE 1**

Sampled Industries Experiencing Acquisition Waves

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Industry Description</th>
<th>Wave Date Range</th>
<th>Total $n$</th>
<th>First Year $n$</th>
<th>Peak Year $n$</th>
<th>Last Year $n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 3674</td>
<td>Semiconductors</td>
<td>1998–2001</td>
<td>308</td>
<td>40</td>
<td>125</td>
<td>61</td>
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<tr>
<td>2. 4213</td>
<td>Trucking</td>
<td>1998–2002</td>
<td>101</td>
<td>9</td>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>3. 4225</td>
<td>Warehouse and storage</td>
<td>1995–1999</td>
<td>81</td>
<td>3</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>5. 4813</td>
<td>Telephone communications</td>
<td>1998–2002</td>
<td>676</td>
<td>89</td>
<td>227</td>
<td>86</td>
</tr>
<tr>
<td>7. 5411</td>
<td>Grocery stores</td>
<td>1985–1990</td>
<td>103</td>
<td>10</td>
<td>30</td>
<td>14</td>
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<tr>
<td>8. 5511</td>
<td>Motor vehicle dealers</td>
<td>1996–2000</td>
<td>159</td>
<td>9</td>
<td>47</td>
<td>21</td>
</tr>
<tr>
<td>9. 6512</td>
<td>Real estate operators</td>
<td>1996–2000</td>
<td>1,249</td>
<td>80</td>
<td>544</td>
<td>79</td>
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<tr>
<td>10. 7011</td>
<td>Hotels</td>
<td>1995–1999</td>
<td>721</td>
<td>83</td>
<td>222</td>
<td>73</td>
</tr>
<tr>
<td>11. 7374</td>
<td>Computer processing services</td>
<td>1996–2000</td>
<td>217</td>
<td>30</td>
<td>61</td>
<td>26</td>
</tr>
<tr>
<td>12. 7375</td>
<td>Information retrieval services</td>
<td>1997–2001</td>
<td>1,855</td>
<td>122</td>
<td>699</td>
<td>336</td>
</tr>
</tbody>
</table>

---

4 One year of trading days, a commonly used estimation period, is approximately 250 days (e.g., Dewenter, 1995; Hayward, 2002).

5 The results for the $-5, 5$ window were statistically identical to those with the $-5, 15$ window. For the $-3, 3$ window, the position trend term was the same, while the interaction terms remained consistent but significant at the .10 level.
Hypothesized Variable: Position in an Acquisition Wave

As previously described, we defined an acquisition wave as any six-year period in which the peak year of acquisition activity in an industry showed a greater than 100 percent increase over the first (or base) year followed by a decline of greater than 50 percent from the peak year. To calculate an acquisition’s relative position within a wave, we divided its ordinal position by the number of acquisitions that occurred in the overall wave.

Hypothesized Moderator Variables

Industry munificence and industry stability. To calculate our industry moderating variables, we followed previous research (e.g., Dess & Beard, 1984; Sutcliffe, 1994). To compute indexes of the respective munificence and stability of each industry undergoing a merger wave, we first regressed industry sales on a year-counter variable. We used five-year windows, with the year of the current acquisition observation as the last year in the panel. We then divided the standard error of the regression coefficient for each industry by the mean value of industry sales. This value is a measure of stability/dynamism. To have a high score on the scale indicate stability, we then subtracted this value from 1. We measured munificence using the regression coefficients for each of the regressions noted above divided by the mean value of industry sales. This measure provides an indication of the degree of growth or decline within an industry over the measured period.

Serial acquirer. We measured the degree to which an acquisition was part of a serial pattern undertaken by an acquirer firm by calculating the number of acquisitions a firm participated in throughout an acquisition wave and dividing this value by the total number of acquisitions within a wave. Thus, we had a measure of the frequency of the acquisitions undertaken by this firm scaled by the overall number of acquisitions within an industry.

Stock consideration. We measured the form of consideration offered as a percentage of the acquisition price paid in the acquirer’s common stock (Travlos, 1987).

Control Variables

Acquirer-to-target relatedness. Because of potential synergies between acquirers and targets, the market may tend to value related acquisitions more highly than unrelated acquisitions. Research consistent with this view shows firms pursuing related diversification strategies outperform those pursuing unrelated strategies. Thus, we might expect acquirer-to-target relatedness to be related to acquisition returns.

Following Morck, Shleifer, and Vishny (1990), we measured relatedness using the four-digit SIC codes of the three main lines of business (by sales) in which an acquirer and a target operated. If a firm operated in fewer than six four-digit industries, we used all industries. We classified an acquirer and a target as “related” if they had at least one four-digit SIC code in common among the top three in which they operated at the time of the acquisition. Otherwise, they were classified as “unrelated.”

Attitude. The attitude underlying an acquisition may vary from friendly to hostile. In hostile acquisitions, potential targets take actions, such as adopting a poison pill defense or arranging to be acquired by a “white knight,” that make it less likely acquirers will succeed (Brickley, Coles, & Terry, 1994; Mallette & Fowler, 1992). Hostile acquisitions may negatively affect acquirer returns by attracting multiple bidders who drive premiums higher (Browne & Rosengren, 1987). Thus, losses may be more likely in hostile acquisitions than in friendly acquisitions, which are unlikely to evoke target firm responses that drive up acquisition costs. Using the attitude categories presented in the SDC database, we coded “friendly acquisitions” as 0, “neutral acquisitions” as 1, and “hostile acquisitions” as 2.

Acquirer slack. The results of research on the relationship between slack and acquisition performance is mixed. Hitt, Harrison, and Ireland (2001) presented evidence that increased slack led to less costly debt financing, which is associated with successful acquisitions. In contrast, research in finance has suggested that as slack decreases, the likelihood a firm will make an unprofitable acquisition declines, since creditors will monitor the firm’s management of the acquisition more closely, and the firm has less cash to spend (Lang, Stulz, & Walkling, 1991). Following Haunschild (1993), we measured slack in two ways. First, we operationalized it as the ratio of debt to equity, a conventional measure of recoverable slack (Bourgeois, 1981). Second, we assessed the percentage of acquirer free cash flow (a concept similar to available slack), defining free cash flow as operating income minus taxes, interest expense, preferred dividends, and common dividends, all divided by equity. Both variables were measured at the end of the year before an acquisition year.

Acquirer performance. Acquiring firm performance may be related to acquisition success, with...
research showing firms with better financial performance make better acquisitions (Morck et al., 1990). We computed industry-adjusted performance by subtracting the median industry ROA value (obtained from COMPUSTAT) from firm-level ROA measured at the end of the year before an acquisition year.6

Analysis

All variables, with the exception of wave position, were standardized with a mean value of 0 and a standard deviation of 1. We centered the wave position variable and also squared it to test for a curvilinear relationship between acquisition position and acquisition performance. The position variable was centered as a means of preventing multicollinearity between it and its squared term.7 We then analyzed the data using ordinary least squares (OLS) regression analysis.

RESULTS

Table 2 presents descriptive statistics and correlations for the variables used in the study.

Table 3 reports the regression results for models used in the study.8 Analysis of several of the control and base values of the moderator variables yielded the expected results. In keeping with prior work, acquirer firm performance (Morck et al., 1990) is positively associated with acquisition returns ($p < .01$). Acquirer slack (Hitt, Harrison, & Ireland, 2001) in the form of free cash flow is positively related to acquisition returns ($p < .01$). Also consistent with expectations is the finding that the percentage of stock consideration (Travlos, 1987) is negatively related to acquisition returns ($p < .01$). Finally, contrary to expectations, attitude and target relatedness are unrelated to acquisition returns in our control model.

Hypothesis 1 predicts acquisition returns will decline as an acquisition wave progresses. The results from model 2 in Table 3 provide support for this hypothesis.9 Position in a wave is strongly, negatively related to acquisition performance ($p < .01$).

Hypothesis 2 predicts curvilinear performance effects over a wave period, with optimal acquisition performance early in the wave and the worst performance during the middle stages. In line with this hypothesis, the base position variable in model 3 of Table 3 is negative ($p < .01$), and the squared position term is positive ($p < .01$). Figure 1 demonstrates that the pattern of results matches the hypothesized effects. Firms acting early are more likely to experience positive acquisition returns, and the returns bottom out about two-thirds of the way through the wave. Thus, we find strong support for Hypothesis 2.

Hypotheses 3 and 4 predict industry munificence and stability will moderate the relationship between position in a wave and acquisition returns. We tested this prediction in model 4 of Table 3 by including an interaction effect for acquisition wave and industry munificence, as well as one for acquisition wave and industry stability. Both interaction effects are negative ($p < .01$), which demonstrates that the negative relationship between acquisition order within a wave and acquirer shareholder returns is stronger when industries are high in munificence and stability. The associated figures illustrate this point. In Figure 2, although the trend over a wave period in the acquisition returns of firms in highly munificent industries is strongly negative, there is a much weaker negative trend in less munificent industries. Figure 3 indicates that although there is a strong pattern of declining acquisition returns over the duration of a wave in more stable industries, there is a slightly positive trend in acquisition returns in more dynamic industries. Together, these results provide strong support for Hypotheses 3 and 4.

Hypotheses 5 and 6 state that acquirer tactics will also moderate the trend in acquisition returns over

---

6 We ran an additional model in which we included relative acquisition size as a control. Since we had a significant number of observations missing data on this variable, it was not significantly related to acquisition performance, and as its inclusion did not alter any other relationships in the model, we excluded it from our final models.

7 In addition, we assessed variance inflation factors for the variables in the regression equations. All were substantially below 10, demonstrating that multicollinearity was not affecting coefficients (Neter, Wasserman, & Kutner, 1990).

8 Although the models are strongly statistically significant, the proportion of variance explained is somewhat modest ($R^2 = .04$). Given the range of factors that can influence securities prices and the heterogeneity of the industries represented in our data, this result is not surprising; it is similar to findings in other event studies assessing corporate acquisition performance (e.g., Haleblian & Finkelstein, 1999).

9 To ensure results were not being driven by outliers, we “winsorized” our abnormal returns dependent variable. Specifically, we used three winsorization values (99%, 98%, and 90%) and found our results to be robust to the reining in of potentially outlying observations.
the period of an acquisition wave. Hypothesis 5 suggests the performance trend over a wave will be muted for serial acquirers. As presented in model 4 of Table 3, we find a significant interaction term for the variable serial acquirer, supporting Hypothesis 5. In line with the hypothesis, Figure 4 presents the form of the interaction, which shows the trend is strongly negative for infrequent acquirers but virtually flat for serial acquirers. Finally, in Hypothesis 6, we posit that the type of financing used for an acquisition will moderate the performance trend over a wave period. We expected that the negative trend would be stronger for stock-based acquisitions, as firms falling prey to bandwagon pressures would likely use this type of financing. As model 4 of Table 3 shows, we find support for Hypothesis 6; the coefficient for the stock consideration variable is negative ($p < .05$). The graphed relationship in

### TABLE 2
Descriptive Statistics and Correlations for Key Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Serial acquirer</td>
<td>0.01</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Acquirer-to-target relatedness</td>
<td>0.42</td>
<td>0.49</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Acquirer free cash flow</td>
<td>0.18</td>
<td>1.98</td>
<td>.00</td>
<td>.04</td>
<td>.03</td>
<td>.04</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Acquirer debt-to-equity ratio</td>
<td>0.18</td>
<td>24.86</td>
<td>.00</td>
<td>.04</td>
<td>.03</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Acquirer performance</td>
<td>0.03</td>
<td>0.30</td>
<td>.06</td>
<td>.09</td>
<td>.14</td>
<td>.02</td>
<td>.02</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Stock consideration</td>
<td>26.26</td>
<td>34.44</td>
<td>.19</td>
<td>.03</td>
<td>.02</td>
<td>.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Attitude</td>
<td>0.01</td>
<td>0.09</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>8. Industry munificence</td>
<td>0.15</td>
<td>0.10</td>
<td>.44</td>
<td>.28</td>
<td>.03</td>
<td>.02</td>
<td>.04</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>9. Industry stability</td>
<td>0.97</td>
<td>0.02</td>
<td>.20</td>
<td>.19</td>
<td>.06</td>
<td>.02</td>
<td>.10</td>
<td>.23</td>
<td>.05</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Position in wave</td>
<td>0.50</td>
<td>0.28</td>
<td>.14</td>
<td>.03</td>
<td>.03</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.09</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Acquisition returns</td>
<td>-0.01</td>
<td>0.23</td>
<td>.03</td>
<td>.00</td>
<td>.05</td>
<td>.03</td>
<td>.13</td>
<td>.03</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.07</td>
</tr>
</tbody>
</table>

*a n = 3,194. Correlations greater than .04 are significant at $p < .05$, and correlations greater than .05 are significant at $p < .01$.

### TABLE 3
Results of OLS Analysis Predicting Acquisition Returns

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>$-0.91^*$ (0.39)</td>
<td>$-0.91^*$ (0.39)</td>
<td>$-2.64^{**}$ (0.58)</td>
<td>$-1.61$ (0.42)</td>
</tr>
<tr>
<td>Serial acquirer</td>
<td>$-0.86^*$ (0.44)</td>
<td>$-0.51$ (0.45)</td>
<td>$-0.38$ (0.45)</td>
<td>$-0.84$ (0.55)</td>
</tr>
<tr>
<td>Acquirer-to-target relatedness</td>
<td>$-0.26$ (0.44)</td>
<td>0.00 (0.44)</td>
<td>0.04 (0.44)</td>
<td>0.00 (0.44)</td>
</tr>
<tr>
<td>Acquirer free cash flow</td>
<td>1.60^{**} (0.40)</td>
<td>1.55^{**} (0.40)</td>
<td>1.52^{**} (0.40)</td>
<td>1.51^{**} (0.40)</td>
</tr>
<tr>
<td>Acquirer debt-to-equity ratio</td>
<td>0.63^{**} (0.39)</td>
<td>0.60 (0.39)</td>
<td>0.63 (0.39)</td>
<td>0.62 (0.39)</td>
</tr>
<tr>
<td>Acquirer performance</td>
<td>3.14^{**} (0.40)</td>
<td>3.14^{**} (0.40)</td>
<td>3.12^{**} (0.40)</td>
<td>3.13^{**} (0.40)</td>
</tr>
<tr>
<td>Stock consideration</td>
<td>$-1.21^{**}$ (0.42)</td>
<td>$-1.09^{**}$ (0.42)</td>
<td>$-1.08^{**}$ (0.41)</td>
<td>$-1.13^{**}$ (0.42)</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.17 (0.39)</td>
<td>0.19 (0.39)</td>
<td>0.21 (0.39)</td>
<td>0.21 (0.39)</td>
</tr>
<tr>
<td>Industry munificence</td>
<td>0.73 (0.52)</td>
<td>0.12 (0.54)</td>
<td>0.17 (0.54)</td>
<td>$-0.12$ (0.55)</td>
</tr>
<tr>
<td>Industry stability</td>
<td>0.59 (0.48)</td>
<td>0.03 (0.50)</td>
<td>$-0.06$ (0.51)</td>
<td>$-0.27$ (0.51)</td>
</tr>
<tr>
<td>Position in wave</td>
<td>5.39^{**} (1.50)</td>
<td>5.46^{**} (1.49)</td>
<td>$-4.97^{**}$ (1.51)</td>
<td>$-4.97^{**}$ (1.51)</td>
</tr>
<tr>
<td>Position in wave squared</td>
<td>21.51^{**} (5.40)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in wave × munificence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in wave × stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in wave × serial acquirer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in wave × stock consideration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


*a Standardized coefficients are reported. Standard errors are in parentheses. The change score ($\Delta F$) for model 2 is relative to the base model (model 1), and the change scored for model 3 and model 4 are relative to model 2.

* $p < .10$
* $p < .05$
** $p < .01$
Figure 4 also provides visual confirmation of the hypothesized relationship.

**DISCUSSION**

Collectively, the results of the current study suggest that significant performance consequences are associated with participating in different stages of an acquisition wave; however, these effects are contingent on industry and acquirer characteristics. To our knowledge, this is the first study that has examined performance consequences over the entire length of industry acquisition waves. Our results show acquiring firms can benefit from early acquisitions but often suffer from later acquisitions. Within the context of acquisition waves, both first mover advantage and bandwagon effects were tested. Results show, in keeping with the notion of early mover advantages, acquirers moving early within an industry acquisition wave not only outperform those acquiring later, but on average achieve an economic gain. This result is particularly impressive because researchers have concluded that although target shareholders benefit from acquisitions, acquiring firm shareholders do not (Healy et al., 1992). Results also demonstrated, consistent with work on bandwagon effects, that the market punished followers: firms that acquired at the height of acquisition activity experienced the worst average performance. Thus, exploring the combination of first mover advantage and bandwagon effects helped us better understand the performance implications of order effects within acquisition waves.

Interestingly, the results also show the benefits of moving first are more pronounced both when an industry environment is munificent and when it is stable. Visual representation of these two relationships in Figures 2 and 3 shows that moving early in acquisition waves has more of a positive impact in such munificent and stable environments. Also, bandwagon followers in stable or munificent environments suffer more than in dynamic or slow-growing markets. These results are consistent with the notion that, in stable markets, acquirers can identify and value assets better than they can do so in more dynamic environments. In addition, the ability of early mover firms to establish a leadership position through acquisitions may be greater in stable markets (Schmalensee, 2000). In fact, there is some evidence that firms do better acting later in dynamic markets, possibly after some of the uncertainty within the market is reduced. Thus, the results imply managers should consider the level of a market’s stability in determining the potential value of acting earlier or later within acquisition waves.

As for munificent markets, our results suggest that firms perceiving acquisition opportunities early in acquisition waves within growing industries benefit substantially. However, the benefits of moving early in munificent markets wane quickly, resulting in much higher losses for later movers in munificent environments, compared to later movers in low-growth markets. This pattern is likely due to heightened bandwagon pressures within munificent markets. Thus, the results extend our understanding of first mover advantage and bandwagon pressures and show that certain market conditions may enhance the effect of these factors.

We also found acquirer tactics influenced the performance trend over acquisition waves. Specifically, our findings indicate that undertaking acquisitions in a serial pattern significantly affects the degree to which an acquirer enjoys early mover advantages or suffers the costs of bandwagon pressures. Firms that undertake infrequent acquisitions in a wave are much more likely to experience the benefits of early action as well as suffer the consequences of following a bandwagon. In contrast, the
performance of acquisitions undertaken as a series within a wave period do not differ over the different stages of the wave, as they appear to neither benefit from early movement nor suffer from later action.

Additionally, the financing used for an acquisition moderates the performance consequences of participating in an acquisition wave. Our findings show acquisitions financed primarily with cash experience only a small decline in their performance as a wave progresses. In contrast, when stock is used to finance acquisitions, acquiring firms experience more negative performance consequences as the wave pressures peak. This finding is consistent with the idea that firms with asymmetric information use cash to finance acquisitions, but firms not relying on superior information use stock financing. This idea in turn suggests that managers understand whether an acquisition is likely to be valuable for their firm and alter the method of acquisition to buffer some of the acquisition costs the firm may face. The major implication that we see is that managers should be cautious in undertaking an acquisition in a market with a high rate of acquisitions unless they are confident enough about their own information to finance the acquisition with cash.

Collectively, these findings offer important theoretical insights for the general management literature and, more specifically, the corporate strategy literature. First, these findings offer evidence that first mover advantage theory can be extended be-
Beyond product-market or geographic market actions to actions in other settings, such as mergers and acquisitions. Our findings indicate that managers acting early in acquisition waves can seize the asymmetric information and preemption benefits associated with first mover advantage. Second, in line with research on first mover advantage in product-markets, our results suggest that early mover benefits are contingent on both the environmental conditions within a market and the action strategies employed by firms.

Relating our findings more directly to the corporate strategy literature, they demonstrate that the success of an acquisition is influenced by the larger market dynamics at work—most keenly, the existence and progression of industry-level acquisition waves. Thus, for research on mergers and acquisitions to more fully explain the performance of acquisitions, researchers need to incorporate the issue of acquisition dynamics within industries into their models. Additionally, although we find performance differences over the stages in these acquisition waves, these differences are contingent on industry characteristics and acquirer tactics. Thus, we believe that our results reinforce King et al.’s (2004) recent call for theory building regarding performance consequence drivers within mergers and acquisitions. In line with this recommendation, we presented and tested a complex model that relates acquisition waves, industry conditions, and the acquisition tactics used by firms to develop a more

![FIGURE 4](image1.png)

**FIGURE 4**
Serial Interaction

![FIGURE 5](image2.png)

**FIGURE 5**
Financing Interaction
nuanced understanding of which firms win and lose within an acquisition wave.

The study also has practical implications for managers. The results show early acquirers within an industry acquisition wave outperform later acquirers, suggesting that followers may not fully appreciate the likely negative consequences of moving later in an acquisition wave. Figure 1 shows that only acquisitions made very early within an industry acquisition wave achieve positive abnormal returns. Thus, as it becomes clear to managers that an industry acquisition wave is taking place, average abnormal returns may have already turned negative. Stated simply, then, managers should lean against making acquisitions after they have ascertained an industry wave is underway, because the market tends to punish followers within waves. We determined the relative financial impact of order effects within an industry wave on the basis of our sample’s median acquirer size, $400 million. Our curvilinear model shows the average acquirer abnormal return for firms acting early (at the 5th percentile of a wave) was 4.2 percent, which translates into a gain in firm value of $17 million, while the average for those acting at the height of wave pressures (at the 65th percentile) was −3.0 percent, which is equivalent to a loss of $12 million. Thus, acquiring early versus later leads to an average difference of $29 million—a significant financial difference.

Our findings also point to other implications for managers. The benefits of moving early within an industry wave appear restricted to industries that are either munificent or stable. Thus, if a wave is taking place outside such an environment, managers should not expect first mover advantages. Moreover, results also show that serial acquirers do not benefit from first mover advantages, as their average abnormal returns tend to be negative across industry acquisition waves, which suggests more experienced acquirers gain no advantages with such waves and calls into question the pursuit of acquisition programs during them. Finally, the poor performance tendency of later acquirers within acquisition waves is pronounced when they make stock-based deals. Thus, if managers are intent on making an acquisition late in a wave, they should consider using cash, which signals confidence in the information the acquiring firm has and results in a more positive market reaction. Overall, the pattern of results suggests caution for managers in the context of industry acquisition waves, in which positive abnormal returns can only be expected under a narrow set of conditions: early movement and nonserial acquisition, in either a stable or a munificent environment.

In the course of shedding light on the performance outcomes of acquirers in acquisition waves, this study also raises other interesting questions. Future research could explore the effects of market characteristics, such as industry munificence and stability, on the number of firms entering a market, the bidding behavior of these firms, and any long-term advantages that accrue from moving early. In addition, although our definition of an acquisition wave is consistent with the extant literature on such waves, we acknowledge this definition is somewhat arbitrary and encourage future research to explore others to determine whether results generalize across wave definitions. Additionally, future research could explore the influence of firms’ characteristics on their behavior in acquisition waves. For example, within acquisition waves, which type of firm leads, and which follows? That is, do larger or more profitable firms tend to lead within a wave? Theories of imitation may be particularly relevant to help explain what drives leadership and “followership” behavior within waves. Researchers could also examine whether firms implement acquisitions differently at different points within acquisition waves. For example, do firms tend to use different forms of financing at different stages of waves? We also think research looking into the acquisition processes within firms could shed light on the relationships found here. For example, do early movers undertake more comprehensive decision analyses than later movers? In sum, given the relationship between entry order, market conditions, acquirer tactics, and acquisition returns found with this study, questions about which firms participate in acquisition waves, when they enter, and their actions in the acquisition process are of central interest to strategy management researchers and practitioners.

REFERENCES


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