

Early-Mover vs. Late-Mover Benefits in Cross-border Mergers and Consequences on Rival Bidders

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Abstract:

The purpose of this paper is to explain abnormal bidder firms' returns in cross-border mergers and acquisitions by comparing the first-mover hypothesis to the late-mover hypothesis. We also study the reactions of rival firms to bidder firm announcements as a further test of the first-mover hypothesis. We find that cross-border acquisitions are generally value-destroying for strategic pioneers unless cultural distance between the U.S. and the target country is great. Further, we find positive announcement effects for followers as long as cultural distance is small.

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1. Introduction

According to the first-mover advantage hypothesis, firms that possess information advantages to pioneer new investment avenues can earn significant positive abnormal returns if they are among the first to exploit these new avenues. In particular, firms that own rare, valuable, and difficult-to-imitate resources can exploit supernormal profits (Oliver (1997)), especially if these firms establish competitive advantages before their peers do (Lieberman and Montgomery (1988)). If competitive strategies are present, then early-movers typically perform better than later followers (Lee, Smith, Grimm and Schomburg (2000)). Recent empirical evidence suggests that this early-mover advantage can also explain the superior performance of strategic target acquisitions within the same industry at the beginning of a merger wave compared to later target acquisitions, and compared to acquisitions outside a merger wave (Carow, Heron and Saxton (2004)). While, on average, bidder firms do not earn significant positive abnormal returns upon the announcement of a domestic merger (Jensen and Ruback (1983); and Mulherin and Boone (2000)), early-movers in strategic acquisitions (Carow et al. (2004)) and unexpected merger announcements (Song and Walkling (2005)) can earn significant positive abnormal returns for bidder firms' shareholders. Thus, if the acquisition of a target is an economically profitable strategic move, it typically pays to be the first to exploit this opportunity. Early movers enjoy a wider spectrum of potentially profitable target acquisitions from which to choose, whereas later acquirers generally face greater competition over fewer targets (Carow et al. (2004)), which consequently increases the

acquisition premia and makes the acquisitions less profitable or potentially even unprofitable.

While opportunities for value creation through cross-border takeovers may exist, prior studies examining acquirer returns in foreign acquisitions have generally found that bidder firm shareholders do not gain in these takeovers. For example, Moeller and Schlingemann (2005) compare domestic and foreign acquisitions from 1985 through 1995 and find that acquirers of foreign targets experience significantly lower event period abnormal returns than acquirers of domestic targets. Eckbo and Thorburn (2000) find similar evidence of lower event period abnormal returns for foreign acquirers of Canadian targets than for domestic acquirers. Furthermore, Andre, Kooli, and L'Her (2004) find that Canadian bidders perform poorly in cross-border deals in the long-run, and Conn, Cosh, Guest, and Hughes (2005) find similar poor performance for UK acquirers in foreign takeovers of public targets.

While prior studies have found that the average bidder does not fare well in cross-border mergers, the finance literature also documents that certain types of bidders may experience positive bidder firm announcement returns for cross-border acquisitions (e.g., Doukos and Travlos (1988); Morck and Yeung (1992); Markides and Ittner (1994); and Chakrabarti, Jayaraman and Mukherjee (2004)). For example, acquirer gains appear to be positively related to advertising intensity, target size, oligopolistic industries, U.S. dollar strength, and previous international experience (Markides and Ittner (1994)). In addition, Morck and Yeung (1992) find a positive relation between wealth increase upon a cross-border M&A and the bidder firm's level of intangible assets. The possible wealth effect to bidder firm shareholders can, in part, be explained by operational, strategic, and

financial diversification benefits. Further, the bidder firm's return depends on whether the target firm operates in a related industry, the concentration level of the bidder firm's industry, the bidder firm's relative advertisement spending, the bidder firm's international experience, and the bidder firm's profitability at the time of the M&A (Markides and Ittner (1994)). Although previous studies have identified a number of factors that influence the bidder firm shareholder wealth gains in cross-border mergers, the strategic implications of early-mover acquisitions have not been specifically explored.

The purpose of this study is to explain abnormal bidder firms' returns in cross-border M&As by comparing the first-mover hypothesis to the late-mover hypothesis. While Carow et al. (2004) successfully establish pioneering advantages for early-movers in domestic acquisitions, we are not aware of any study to date that looks at timing advantages in cross-border acquisitions. In addition to studying the differences in wealth gains of early-movers compared to late-movers, this study also focuses on the reaction of bidder rival firms to the merger announcement as a further test of the first-mover hypothesis. Song and Walkling (2005) examine rival firms' reactions with a sample consisting primarily of domestic target firms and only a minority percentage of foreign target firms. Their study neither highlights the benefits of acquiring foreign targets nor addresses country differences.

The results of our research are of particular interest to investors and bidder firm managers because they learn valuable information about the wealth benefits that are associated with the acquisition of foreign target firms. They further learn how the bidder firm's announcement of a cross-border M&A affects rival firms in the same industry. In

addition, the rival firms' managers learn about the consequences of imitating an initial acquisition and about the difference in doing so earlier versus later.

The remainder of this paper is organized as follows: Section 2 reviews the early-mover and intra-industry literature, Section 3 introduces the proposed hypotheses, Section 4 discusses the research methodology and the data that are utilized to test the proposed hypotheses, Section 5 presents the empirical results, and Section 6 states the study's conclusions.

2. Literature Review

2.1. First-movers and late-entrants

First-mover advantages arise when a firm materializes positive net present value gains by entering a new market before anybody else does. Research shows that “technological leadership,” “preemption of scarce assets,” and “switching costs” are likely sources that create first-mover advantages (Lieberman and Montgomery (1988)). Firms can achieve “technological leadership” by investing in research and development (R&D) that result in patented know-how or organizational innovations. If industry competitors cannot afford to allocate similar funds to the development of technology, they might be blocked from entering the new market. Such barriers to entry increase the time period where the first-mover is in the lead before the first rivals begin to follow (Kerin, Varadarajan, and Peterson (1992)). “Preemption of assets” refers to taking possession of available assets, such as valuable target firms, before anybody else does. When a U.S. firm acquires a non-U.S. target, for example, the first-mover enjoys the widest variety of targets to choose from and can select the most valuable target firm

(Carow et al. (2004)). On the other hand, later entrants are limited to the remaining targets, which might not provide any positive net present value projects. Early-movers can also take advantage of other assets, such as the local work force, suppliers, and distributors (Lieberman and Montgomery (1988)). Finally, late-entrants might face “switching costs,” which are the costs associated with attracting customers away from early-movers that have already established relationships. This cost barrier to late-entrants further benefits the early-movers by allowing them initially to enjoy profits that they do not have to share with competitors. If late-entrants are unable to divert a significant number of customers from the early-mover, switching costs is a lasting benefit to early-movers. For example, Makadok (1998) examines the money market mutual fund industry where products can be easily imitated, yet early-movers were able to maintain a leading status because they had already secured access to their customer base.

Being a first-mover alone does, on average, not provide any abnormal returns (Kerin et al. (1992); and Carow et al. (2004)). Only “strategic pioneers,” which are firms that possess proprietary information, earn abnormal returns. In addition, first-movers are more likely to experience superior stock performance if they acquire targets in related industries, pay for the transaction in cash, and purchase during expansionary time periods in the targeted industry (Carow et al. (2004)).

Although firms typically benefit from being first- and early-movers, there are exceptions where it is desirable to wait and enter the new market at a later point. For example, late-entrants might be able to save innovation costs by free-riding on first- and early-movers’ investments in areas such as R&D, buyer education, and infrastructure (Lieberman and Montgomery (1988)), and by imitating products or processes rather than

originally designing them (Shankar, Carpenter, and Krishnamurti (1998)). For example, Texas Instruments gained market dominance in the hand-held calculator industry by producing at a lower cost than the pioneers Bowmar Brain and Canon Pocketronic (Schnaars (1986)). Therefore, if firms can save expensive innovation expenses and easily enter new markets via product imitation, the pioneers might not have enough lead time to fully recoup their initial expenses and to secure a loyal customer, employee, and supplier source. The reduction of the pioneers' benefits in this case reduces the incentive of becoming a first-mover (Lieberman and Montgomery (1988)).

Entering the market at a later time might also provide additional benefits of decreased market and technology uncertainty (Lieberman and Montgomery (1988)), possibilities to enhance existing processes and products to meet changing customer needs (Scherer (1980)), and to innovate by utilizing resources and expertise more efficiently to surpass early-movers (Lieberman and Montgomery (1998); and Shankar, Carpenter, and Krishnamurthi (1999)). For example, Matsushita gained a leading position in the product market as a later entrant by designing a superior videocassette recorder at lower cost than the pioneer Sony did (Schnaars (1986)).

2.2. Intra-industry effects

Cross-border M&A announcements might not only impact the announcing firm's stock price, but also the industry rival firms' stock prices. Previous research has found numerous examples of contagion and competitive effects in rival firms when the announcement seemed to convey more than only firm-specific information. For example, Lang and Stulz (1992) examine the impact of bankruptcy announcements and find both a

contagion and a competitive effect in rival firms. The contagion effect can stem from heightened customer and supplier concerns about the future health of all firms within the industry that announced the bankruptcy and expected lower industry-specific cash flows in the future. Highly leveraged firms seem to be effected more severely by this contagion effect. On the other hand, highly concentrated industries – that is, industries with a low number of competitors - with low leverage enjoy positive value effects.

When focusing on merger announcements in the insurance industry, studies show that industry rival firms react positively to merger announcements. The magnitude of the intra-industry effect depends on the firm characteristics such as location, type and size (Akhigbe and Madura (2001)). Specifically, rival firms earn significantly positive announcement returns when they are located in the same regional area as the bidder firm, and if the target firm carries only one type of insurance, especially if it is a life insurance (Akhigbe and Madura (2001)). Lastly, rival firms earn greater positive announcement returns if their size is similar to the size of the bidder firm (Akhigbe and Madura (2001)). Additional intra-industry research shows that rival firms of targets earn positive announcement returns regardless of the M&A's final success, and regardless of whether the M&A is horizontal or vertical (Song and Walking (2000)). Furthermore, other research reports positive valuation effects for rival firms upon horizontal merger announcements in the mining and manufacturing industry (Eckbo, 1983). Shahrur (2005) utilizes firms from the SDC database during 1987 and 1999 and confirm this result.

Although there is a significant amount of research available on intra-industry effects of different announcements in general and mergers and acquisitions in particular, Song and Walking (2005) note that the research on bidder firms' rivals is scarce. They

argue that these rival firms' responses are hard to measure because bidder firms' returns are typically very small. While this is true for domestic and cross-border mergers in general, certain cross-border M&As promise greater bidder firm announcement effects. For example, bidder firms that possess intangible assets earn positive announcement returns (Morck and Yeung (1991, 1992)). In addition, the domestic first-mover literature suggests that announcements by strategic pioneers are value increasing (Carow et al. (2004)). If bidder firms observe significant announcement returns, these returns could send a signal and impact all firms within the industry or firms that will subsequently become bidder firms themselves (Song and Walking (2005)). In fact, Song and Walking (2005) find that rival firms' stock prices adjust upon M&A announcements. Moreover, rival firms that are expected to become subsequent bidder firms adjust their wealth in proportion to the level of the bidder firm's announcement return. These returns are significantly different from rival firms that are not expected to become subsequent bidder firms. This result suggests that bidder firms' rivals display a contagion effect. While the authors include international acquisitions in their sample, their study focuses neither on the benefits of acquiring foreign targets nor on country differences. Our study fills this existing gap by addressing the effects of cross-border acquisitions on bidder rivals. We specifically examine the importance of acquisition timing, as an early versus late-mover, and the role of cultural differences in affecting the shareholder wealth gains for the bidder firms and their rivals within the same industry.

3. Hypotheses

If the first-mover advantage hypothesis can be utilized to explain observed abnormal bidder returns upon the announcement of foreign-target acquisitions, we should expect that early acquisitions create greater bidder firm returns than subsequent acquisitions. However, being a first-mover alone does not provide abnormal returns (Kerin et al. (1992); and Carow et al. (2004)). To earn abnormal announcement returns bidder firms need to be classified as “strategic pioneers,” which are first-movers that possess proprietary information. In addition, acquisitions between firms in related industries, expanding bidder industries, and cash payments qualify as a strategic bidder decision, where firms acquire early because they have superior information compared to firms that acquire early without any competitive advantage (Servaes (1991); Maquieira, Megginson and Nail (1998); and Carow et al. (2004)). Furthermore, Song and Walkling (2005) note that first-mover advantages are more likely to be observed in horizontal and vertical mergers. Following these arguments, strategic pioneers should earn positive abnormal announcement returns in horizontal cross-border M&As. If the first-mover advantage hypothesis holds in cross-border acquisitions, we expect that strategic pioneers earn significantly higher announcement returns than late-movers and early-movers without comparative advantages.

Hypothesis 1a: Strategic pioneers that acquire foreign targets within the same industry will realize positive abnormal returns around the merger announcement if early-mover advantages exist.

On the other hand, we might observe late-mover advantages (Shankar et al. (1998)) if firms can benefit from early-movers' groundwork and their potential mistakes when entering the foreign market (Luo (1998)). Specifically, early-movers have to invest in educating the foreign government and customers, and in establishing necessary infrastructure. If later entrants can save much of these cost disadvantages (Dewenter (1995)) and either inexpensively imitate early-movers' technology (Shankar et al. (1998)) or use their own R&D to surpass existing technology (Lieberman and Montgomery (1998) and Shankar et al. (1998)), we expect that late acquisitions are more value-enhancing than early acquisitions. If early-movers cannot recover their initial expenses and/or later entrants obtain sufficient market share, early acquisitions may be value destroying.

Hypothesis 1b: By building from the groundwork laid by early-movers, late-movers that acquire foreign targets within the same industry will realize positive abnormal returns around the merger announcement date.

Hypothesis 1c: If there is a clear benefit for either early or late acquisitions, the announcement effects for early-movers and late-movers should be significantly different.

In addition to the first-mover perspective, the aspect of cultural distance has received increased attention in recent years with respect to explaining abnormal returns in cross-border M&As (Stulz and Williamson (2003); Chakrabarti, Jayaraman and

Mukherjee (2003)). The psychologist Geert Hofstede was among the first to study differences in national cultures when working for IBM and conducting surveys with more than 100,000 IBM employees from subsidiaries in more than 50 countries between 1967 and 1973. From these surveys, Hofstede developed cultural dimensions that allow us to measure how similar different national cultures are (Hofstede (1980)).¹ Studies that utilize Hofstede's cultural dimensions find mixed evidence pertaining to the impact of cultural distance on the performance of cross-border acquisitions. On the one hand, research suggests that a greater cultural difference between two countries increases acquisitions costs and creates negative wealth effects for the bidder firm's shareholders (Datta and Puia (1995)). On the other hand, studies show positive relations between bidder firms' wealth effects and cultural distance, possibly due to the acquisition of new routines and repertoires (Morosini, Shane and Singh (1998)) and less integration problems if the target remains autonomous (Chakrabari et al. (2004)).

To develop some prediction for the effect of cultural distance on early-movers' announcement returns, we focus on early-movers with technological leadership. Technological leadership is mentioned as a possible source of the proprietary information that a strategic pioneer possesses, and it is measured by the level of research and development (R&D) associated with the bidder firm (Lieberman and Montgomery (1988)). Following the logic in the previous chapter, pioneers with high levels of technological know-how might wish to internalize markets for their intangible assets by acquiring a foreign target firm. The impact of culture on the internalization benefit for pioneers with technological know-how can be twofold. We might observe a positive relationship between cultural distance and the pioneer's announcement return if it is

beneficial to internalize the intangible assets between culturally different countries. This is plausible if contracting (e.g. licensing and franchising) is less expensive in culturally similar climates. If this is true, an increasing difference between two countries' cultures is likely to make contracting more costly and the purchase of a foreign company more attractive. The pioneer's announcement return could therefore increase with cultural distance.

Hypothesis 2a: Cultural distance between target and bidder countries should positively affect the announcement return for strategic pioneers with high levels of technological know-how due to the benefits of internalization of intangible assets.

On the other hand, if the early-mover owns technological know-how that it wishes to internalize among more than only the domestic market, it is reasonable to assume that pioneer and target firm have to work together closely and integrate the target firm successfully. Because countries cultivate organization styles and administration routines based on their national culture (Kogut and Singh (1988)), integration would be much easier to accomplish if bidder firm and target firm share similar norms and values. Following this rationale, Datta and Puia (1995) imply that less cultural distance eases post-acquisition integration of the target firm. Thus, we could also observe a negative relation between cultural distance and pioneer announcement effects.

Hypothesis 2b: Cultural distance between target and bidder countries should negatively affect the announcement return for early-movers with high levels of technological know-how if cultural distance increases the cost of post-acquisition integration of the target firm.

In addition to examining the bidder firm announcement returns, we also study the bidder firms' rivals and their stock price response to the cross-border M&A announcement. Rival firms might experience positive (negative) announcement effects during early-mover (late-mover) acquisitions for two reasons. If the market believes that strategic cross-border acquisitions are value-enhancing for early-movers, such cross-border announcements could signal information about the value of industry rivals (see Song and Walkling (2005)). According to the first-mover hypothesis, strategic early-movers should earn higher abnormal announcement returns than firms that subsequently follow and imitate the move at a later time. If the initial announcement of a strategic acquisition signals good news to the market and if there are still other positive net present value (NPV) targets available in the new market place, we expect that firms with similar characteristics as the initial bidder experience positive abnormal returns at the initial bidder firm's announcement. However, as time passes and fewer profitable target firms remain available, we expect to observe non-positive rival responses to later bidder announcements.

On the other hand, if cost disadvantages outweigh benefits initially in cross-border acquisitions, rival firms can benefit from early-movers' effort and mistakes. Once the foreign market has become accustomed to U.S. firms and if barriers to entry are not

too high, rivals of early-mover bidders are likely to materialize value-creating opportunities. However, as more competition enters the foreign market successfully, barriers of entry are likely to rise for subsequent bidders because lucrative target firms as well as suppliers and customers become scarce. Once acquisitions in the target country are no longer value-enhancing, we expect that rivals experience non-positive CARs during the announcement of the bidder firm.

Hypothesis 3a: Rivals firms earn positive (negative) CARs during early-mover (late-mover) announcements if it is beneficial to become a subsequent early bidder or if it is beneficial to wait and learn from early-movers' mistakes.

If strategic cross-border acquisitions are value-enhancing for early-movers and barriers to entry can be established immediately, rivals should earn non-positive CARs at the early-movers' acquisition announcement.

Hypothesis 3b: Rival firms earn non-positive CARs during early-mover announcements if early-movers can establish barriers to entry immediately.

If late-movers benefit in cross-border acquisitions, waiting and learning from earlier movers' mistakes is valuable and rivals to late-movers might experience positive announcement effects at the later-movers' acquisition announcements.

Hypothesis 3c: Rival firms earn positive CARs during late-mover announcements if rivals can still learn from late-movers' mistakes and further improve their products, services, or production.

Similar to Song and Walking (2005), we test the likelihood that investors can predict which rivals will have subsequent acquisitions. If investor can foresee which rivals have subsequent merger announcements, the rivals' intra-industry announcement effect should differ for rivals that become early-movers themselves and rivals that become late-movers. Rivals that become subsequent early-movers should realize greater intra-industry announcement effects if the early-mover advantage hypothesis prevails. However, if it is more beneficial in cross-border M&As to be a late-mover, rivals that become subsequent late-movers should experience greater intra-industry announcement effects. We expect to observe differences in rival responses if investors are able to predict which rivals become subsequent bidders. If investors can predict which rival firms become subsequent bidders, and if the early-mover hypothesis holds, rivals that become early subsequent bidders should observe greater intra-industry announcement effects at the time of the initial bid than rivals that become late subsequent bidders.

Hypothesis 3d: The abnormal return to rivals at the time of the initial cross-border M&A announcement is significantly related to the probability that a rival will become a subsequent bidder.

Hypothesis 3e: The intra-industry effects to rivals that become late subsequent bidders of foreign targets are significantly different from the intra-industry effects of rivals that become early subsequent bidders of foreign targets.

4. Data and Methodology

4.1 Sample Description

We used the Securities Data Company's (SDC) Mergers and Acquisitions database to identify an initial sample of 7,499 completed horizontal cross-border takeovers announced by publicly traded U.S. bidder firms from 1987 through 2004. The takeovers reflect majority stake acquisitions or 100 percent purchases of the target firm. Also, bidder and target firms share the same 4-digit primary Standard Industrial Classification (SIC) code. To remain in the sample, the announcement must meet the following criteria:

1. The announcement date could be determined using the *Wall Street Journal* or the Lexis-Nexis News Wire file.
2. Appropriate stock and firm information is available on the Center for Research and Security Prices (CRSP) files and the Compustat database.
3. Following André, Kooli and L'Her (2004) and others, the transaction value must be at least US\$ 10 million.
4. Similar to Fee and Thomas (2004), announcements from public utility firms (SIC code 4900-4999) and financial institutions (SIC code 6000-6999) are excluded from the sample because of these firms' extensive regulations.

This screening procedure produced a sample size of 1,621 announcements. We further grouped these announcements by target country and industry, using the Fama French 12 industry classification system. Each country/industry group must have at least five announcements in order to determine early-movers (first 20 percent of the group), late-movers (last 20 percent of the group), and followers (middle 60 percent of the group), following Carrow et al. (2004). The final sample consists of 173 completed cross-border acquisitions by publicly traded U.S. firms that announced transactions from January 1987 through December 2004.

Rival firms consist of members of the individual country/industry groups as well as externally matched rival firms. Similar to Barber and Lyon, (1996), Loughran and Ritter (1997), and Fee and Thomas (2004), we identified external rival firms based on industry, size, and operating performance. Specifically, we identified firms that had relevant information available on CRSP and Compustat but that were not part of our announcement firm sample. We first matched announcing firms with rival firms that share the same 4-digit SIC code and had total assets between 25% and 200% of the sample firms' total assets, both measured in the year prior to the announcement. Of the matching rival firms, we selected the one with the closest operating performance relative to the sample firms', both measured in the year prior to the announcement. We divided cash flows by sales to obtain the operating performance measure (see Fee and Thomas (2004)). We relaxed the criteria if we could not find a rival firm. First, we allowed for matches by 2-digit SIC code, size, and operating performance, then we matched by 2-digit SIC code and operating performance, and finally we matched by 1-digit SIC code and operating performance.

Table 1 explains the variables used in the paper's analyses. Tables 2 through 4 describe the distribution of the cross-border M&A announcements by year, target country, and type of bidder firm (early-mover, follower, or late-mover). Specifically, Table 2 indicates that complete information was available on 173 announcements between 1987 and 2004. The vast majority (almost 90 percent) of announcements took place in 1993 and thereafter, which is the time frame that Black (2000) calls the "international merger wave." The frequency of annual cross-border acquisitions for our sample increased in 1995 with peaks in 1997 (12.72 percent of the total sample announcements), 1999 (15.03 percent of the total sample announcements), and 2004 (12.72 percent of the total sample announcements). Table 3 gives an account of the target countries represented in our sample. The United Kingdom and Canada clearly lead the frequency count (38.73 percent and 35.84 percent, respectively), followed by Germany (9.25 percent), Israel (5.2 percent), The Netherlands (4.05 percent), Argentina (3.47 percent), Sweden (2.31 percent), and France (1.16 percent). The countries are associated with a wide spectrum of our selected Hofstede measure for cultural distance, ranging from 0.080 (The United Kingdom) to 2.631 (Sweden). Table 4 provides an overview of the distribution of the type of bidder firms. In our sample we have 32 early-movers, 108 followers, and 33 late-movers.

Table 5 provides descriptive statistics for the announcing bidder firms (Panel A) and their industry rivals (Panels B through H). Research and development expenses are higher for the announcing firms (US\$ 299 million) compared to rival firms in general, and especially compared to externally matched rival firms (US\$ 180 million) and subsequent bidder firms that did not have any previous cross-border acquisitions (US\$ 52 million).

On the other hand, rival firms that become subsequent bidders and already had previous cross-border acquisitions have much greater research and development expenditures (US\$ 772 million). We observe similar differences between subsequent bidder rivals that had and did not have previous cross-border acquisitions with respect to cash flow, sales, advertisement expenses, and total assets. In general, announcing firms and rival firms appear to have similar characteristics, even after considering within sample matches and external matches.

4. 2. Strategic Pioneers

It is well known that M&As occur in waves (see Brealey and Myers (2003); and Moeller, Schlingemann and Stulz (2005)), and so far literature has classified five distinct mergers waves: first wave, 1895 to 1903; second wave, 1920 to 1929; third wave, 1960 to 1973; fourth wave, 1978 to 1989; and fifth wave, 1993 to present (Black (2000)). Since this fifth merger wave includes a significant percentage of cross-border M&As, Black (2000) classifies it as the first international merger wave. While the vast majority of our sample falls within Black's timeframe for the international merger wave, we also include earlier acquisition years for industries that engaged in overseas M&A prior to 1993. Following the approach by Carow et al. (2004), we classify the first 20 percent of acquisitions in our sample as early-movers, the last 20 percent as late-movers, and the remaining 60 percent as followers. Among the early-movers, we differentiate between strategic pioneers and happenstance early-movers (Carow et al. (2004)). Early-movers with above industry-average levels of technological leadership, as proxied by R&D expenses relative to annual sales in the year prior to the cross-border acquisition

announcement, are classified as strategic pioneers. R&D expenses and annual sales are obtained from Compustat.

4.3. Announcement Effects

We utilize standard event study methodology to obtain both the bidder firms' and rival firms' announcement returns at the time of the bidder firm's announcement. This model estimates the abnormal return for Security i on Day t , AR_{it} , by subtracting the security's expected return, $E(R_{it})$, from the actual return, R_{it} . The expected return is computed using Fama's (1976) market model.

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} \quad (1)$$

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

The estimated parameters α_i and β_i in Equation (1) are computed using an OLS regression of security returns, R_{it} , with market returns, R_{mt} , during the estimation period, where R_{mt} is the return on the CRSP value-weighted index to proxy for the market index on Day t . The estimation period used in the OLS regression spans from Day -300 to Day -50, where Day 0 denotes the event day – that is, the day on which the cross-border M&A is announced. We include only firms that have at least 100 days worth of return data available.

4.4. Cultural Distance

For hypotheses 2a and 2b, we perform a cross-sectional regression to test whether the abnormal stock returns of early-movers with significant technological know-how are related to Hofstede's (1980) cultural distance measure. Following Kogut and Singh (1988), we combine Hofstede's four most common cultural dimensions, which are individualism (IDV), uncertainty avoidance (UAI), power distance (PDI) and masculinity (MAS), into the following composite index distance measure:

$$\text{Hofstede's Cultural Distance Measure} = \frac{\sum_{i=1}^4 \left(\frac{(S_{B,i} - S_{T,i})^2}{V_i} \right)}{4}$$

where S_{B_i} is the bidder country score for Dimension i , S_{T_i} is the target country score for Dimension i , and V_i is the variance of the index score of Dimension i .² When we divide our results for the cultural distance measure into high and low cultural distance between the target country and the United States, our grouping corresponds with that of Benou, Gleason, and Madura (2007) who categorize cultural distance using hierarchical cluster analysis.

4.5. Intra-industry Effects

To test hypothesis 3, we identify rival firms by matching our sample bidder firms with firms from the Compustat database that share the same 4-digit SIC code. Because rival firms might react differently to cross-border M&A announcements depending whether the rival is already invested in the target country, we differentiate between rival

firms that are already invested in the target country or its geographic area and rival firms that are not.³ This information is obtained from the Directory of Corporate Affiliations.

Rival firms' stock price reactions are measured around the event dates that are examined for cross-border bidder firms. We follow up with the rival firms that subsequently become cross-border bidders themselves, and test whether earlier subsequent bidders exhibit different stock price reactions upon the initial cross-border announcement than later subsequent bidders the same industry.

4.6. Logistic Regression

For hypothesis 3c we use logistic regressions to identify factors that influence the likelihood that rival firms become subsequent acquirers. We are specifically interested in the impact of rival firms' announcement returns at the time of the initial bidder announcement. If the rival firms' announcement returns are related to the likelihood of a subsequent acquisition, we can assume that investors have, at the time of the initial bid, at least some idea whether or not individual rival firms are likely to have a subsequent announcement. Specifically, if investors believe that rivals are likely to engage subsequently in value-enhancing or value-destroying cross-border activities, we expect to find a statistically significant relationship between the rival firms' CAR and the rival firm's likelihood of becoming a subsequent bidder.

4.7. Control variables

Following the previous literature, we control for the most commonly used variables in the cross-sectional regressions of this study. Specifically, we control for the following variables:⁴

CASH takes the value of one if the transaction is completely financed by cash payment, and zero otherwise. We typically observe positive relations between cash payments and wealth gains to both bidder and target firms (see for example Harris and Ravenscraft (1991)). The method of payment information is obtained from the SDC database.

PRIOR takes the value of one if the bidder firm has any previous involvement in the target country or its geographic area at the time of the cross-border M&A announcement, and zero otherwise. This information is obtained from the Directory of Corporate Affiliations.

RPRIOR takes the value of one if the rival firm has any previous involvement in the target country or its geographic area at the time of the cross-border M&A announcement, and zero otherwise. This information is obtained from the Directory of Corporate Affiliations.

STD measures the volatility of the foreign exchange rate between the target country's currency and the U.S. dollar by computing the exchange rate's standard deviation for the three-year time period prior to the acquisition announcement. Chakrabarti et al. (2005) point out that volatility can be a factor in the success of a cross-border acquisition and should therefore have an impact on the announcement effect. The exchange rate data are obtained from the Federal Reserve Bank.

BPROFIT indicates the bidder firm's profitability in the year prior to the cross-border M&A announcement, and is calculated by dividing the bidder's annual income by its total assets. This information is found on Compustat.

RPROFIT indicates the rival firm's profitability in the year prior to the cross-border M&A announcement, and is calculated by dividing the rival firm's annual income by its total assets. This information is found on Compustat.

RELSIZE indicates the transaction value of the acquisition divided by the natural logarithm of the announcing firm's total assets in the year prior to the announcement.

RSIZE indicates rival firm's size in the year prior to the cross-border M&A announcement, and it is measured by the natural logarithm of the firm's total assets. This information is found on Compustat.

EXPANSION takes the value of one if the announcement took place during an expansionary economy and zero otherwise.⁵

5. Results

5.1. Univariate Analysis

5.1.1. Bidder Firms

In Table 6 we report the mean and median cumulative abnormal returns (CARs) for our sample of announcing firms during the 2-day (0,+1) and 3-day (-1,+1) time windows surrounding the announcement date. Panel A shows that the 3-day mean and median cumulative abnormal returns for our entire bidder sample are -0.68% and -0.31%, respectively. However, the CARs are not statistically significant. This result is consistent with Bruner's (2004) survey of previous cross-border M&A research. He found that, on

average, the announcement effect to US bidder firms is not significant. By breaking down the mean and median CARs by type of announcing firm, we find that early-movers have a negative mean CAR and a significantly negative median CAR. Further, mean and median CARs are negative for followers and positive for late-movers. The non-significant mean CAR for early-movers is consistent with the research by Kerin et al. (1992) and Carow et al. (2004) who propose that being a first-mover alone does not provide abnormal returns. Instead, the authors suggest, early-movers must possess proprietary information in order to earn abnormal returns. Early-movers with proprietary information are called strategic pioneers. Our early-movers qualify as strategic pioneers if they possess proprietary information resulting from R&D investments. Specifically, in the year prior to the announcement our strategic pioneers spend more money on Research and Development (R&D) than the industry average. According to Hypothesis 1a, if the early-mover advantage hypothesis holds in cross-border acquisitions, we expect to find positive mean CARs for early-movers, and strategic pioneers in particular. However, we show that mean CARs for early-movers and strategic pioneers are negative and not significant. In Hypothesis 1b we postulate that late-movers should have positive mean CARs if the late-mover advantage hypothesis holds in cross-border acquisitions. In fact, we find positive mean CARs for late-movers during the announcement period, though the results are not statistically significant. In Panel B we further show that the mean CAR of the strategic pioneers is not significantly different from the mean CAR of early-movers with below-average R&D expenses.⁶ Given the very small sample sizes associated with strategic pioneers, we focus on early-movers rather than strategic pioneers for our remaining analyses. Our findings so far favor Hypothesis 1b over Hypothesis 1a, which

suggests that we might observe late-mover benefits in cross-border acquisition announcements. This finding differs from the early-mover benefits in domestic acquisitions (Carow et al. (2004)).

Next we focus on Hypothesis 1c. We predict significant differences in announcement returns for early-movers and late-movers if we observe clear benefits to one of the groups. Although the individual CARs for early-movers, followers, and late-movers are not significant, Panel C shows that the difference in the 3-day mean CAR between early-movers and late-movers is significant at the 10 percent level. Further, the differences in the CARs between strategic pioneers and late-movers are also significant at the 10-percent level, while the differences in the CARs between early-movers with below-average R&D spending and late-movers are not significant. Therefore, we find evidence in support of Hypothesis 1c. Specifically, we find that the observed positive late-mover mean CAR is significantly different from the negative strategic pioneer CAR. This finding provides additional support for a late-mover advantage in cross-border acquisitions.

In Panel D we further differentiate between late-movers with above- and below-average R&D spending. We show that only late-movers with low R&D expenses do in fact outperform early-movers, and strategic pioneers in particular. The differences in mean CARs between late-movers with high R&D expenses and strategic pioneers are not significant. Neither are the differences between late-movers with low R&D and early-movers with low R&D. Overall this analysis implies that in cross-border M&A, the announcement by a late-mover with low R&D investment results in more favorable abnormal returns than the announcement by an early-mover, especially if the early-mover

invests heavily in R&D. Lieberman and Montgomery (1988) provide a reasonable explanation for this result, suggesting that late-movers might be able to free-ride on early-movers' investments in R&D. When we examine the sub-samples of bidder firms with high and low R&D spending, we notice that only three late-movers (9 percent of the late-mover sample) and six followers (5.6 percent of the follower sample) do in fact spend heavily in R&D, compared to 12 early-movers (37.5 percent of early-mover sample). It seems reasonable to conclude that bidder firms in cross-border M&As benefit from conserving R&D expenses if they can imitate products or processes later instead of designing them themselves, consistent with Shankar, Carpenter, and Krishnamurti (1998).

For Hypothesis 2 we examine our sample of bidder firms that acquire target firms in countries with great cultural distance. Specifically, we are looking at the impact of cultural distance on announcement returns. We predict that cultural distance could have either a positive or a negative impact on the announcement return of early-movers. In Panel E we show that in the sub-sample of bidder firms with high cultural distance, the 3-day mean CAR is negative for early-movers (-4.685%), significant at the 1 percent level, and positive (5.108%) for late-movers, significant at the 10 percent level. The mean CAR for followers is negative but not significant. The difference in the 3-day mean CARs between early-movers and late-movers is highly significant at the 1 percent level ($t = -4.24$). In addition, the differences in the 3-day mean CARs between early-movers and followers, and late-movers and followers are significant at the 5 percent level. These results suggest that among bidder firms that choose target firms in countries with great cultural distance, only late-movers experience positive 3-day mean CARs and outperform

followers as well as early-movers. Further, followers outperform early-movers. One reasonable implication of this observation is that greater differences in countries' cultures complicate the integration process of the target firm. Our results, which provide evidence in favor Hypothesis 2b over Hypothesis 2a, also support findings by Datta and Puia (1995). In particular, our univariate results suggest that late-movers not only benefit from early-movers' R&D but also from their possible mistakes and challenges when operating in a culturally different country. Late-movers may study these mistakes and problems encountered by the early-movers and learn from them, thereby ultimately experiencing stronger announcement effects than the early-movers.

5.1.2. Rival Firms

Table 7 shows industry rivals' responses to announcements by bidder firms. Panel A provides cumulative abnormal returns of industry rival firms during the 2-day (0,+1) and 3-day (-1,+1) time windows around the announcement date. The 3-day cumulative abnormal mean and median returns to the rival firms are -0.348%, and -0.164%, respectively. Both values are statistically significant. More in-depth analysis shows that the significantly negative returns originate primarily from rivals of followers. Mean and median CARs for rivals of followers are statistically significant. The mean CARs of rivals of early-movers are negative while the mean CARs of rivals of late-movers are positive. However, these results are not statistically significant. This finding parallels the results for announcing firms in Table 6, showing more negative CARs for early-movers than for late-movers, and it provides some evidence of a contagion effect in the bidder firm merger announcements.

Panel B displays differences in means between rivals depending on the type of bidder firm. Although there is no statistical difference in mean CARs between the rivals of early-movers and the rivals of late-movers, we do find differences in subsequent sub-samples when we differentiate between levels of cultural distance. Specifically, Panel C shows that if cultural distance between the U.S. and the target country is large, rival firms respond significantly more negative if the bidder firm is an early-movers compared to a late-mover. This result is again in line with our previous findings regarding the impact of cultural distance on bidder firms, and it provides further evidence for a contagion effect.

We also examine if previous or subsequent announcements of the rivals themselves impact their response to bidder announcements. Panel D shows that rival firms with previous M&A announcements for the same target country experience significantly more negative announcement effects if the bidder firm is an early-mover than if the bidder firm is a late-mover. In this sub-sample, rivals of early-movers were previously early-movers themselves, and their 3-day CAR is -1.56%, significant at the 10-percent level.⁷ This implies that very early announcements elicit significantly negative responses from rivals that had previous M&A announcements in the same country. As a possible explanation for this finding, we argue that early competition presents bad news for early-movers because there might not be enough time to benefit from competitive advantages and to secure promising work force, suppliers and distributors (Lieberman and Montgomery (1988)). Therefore we propose that early competition adds to the early-movers' challenge of overcoming cost disadvantages.

We show in Panel E that rivals with no previous but with subsequent announcements react significantly better to announcements of late-movers than to

announcements of early-movers. Specifically, rivals of this particular subset of late-movers experience a positive 2-day announcement return of 2.36%, significant at the 10-percent level. This finding is again in line with our previous findings from Table 6 where we report positive CARs for late-movers. In addition, this is further support for a contagious rival response. If late-movers benefit from waiting by possibly learning from early-movers' mistakes, it appears to make sense that rivals that become late-movers themselves already benefit from the bidder announcement. This observation implies that investors are able to predict future announcements. We will examine this particular aspect in a subsequent section of this research.

For Hypothesis 3 we also examine announcement effects based on type of rival firm. In particular, in Panel F we see that rivals that are early-movers themselves experience negative 2-day CARs, significant at the 5-percent level. Rivals that are late-movers themselves and rivals that have no announcements themselves experience mixed CAR results upon the bidder announcement, but the results are statistically insignificant. Therefore, cross-border M&A announcements elicit negative CARs from early-mover bidder firms as well as from rivals that are early-movers.

In Hypothesis 3e we predict to find significant differences in means between CARs of rivals that are early-movers themselves and CARs of rivals that are late-movers themselves. Panel G compares early-mover and late-mover rivals in general and does not find significant differences. However, we report in Panel H that rivals that are early-movers exhibit a significantly more negative 2-day mean CAR than rivals that are late-movers if either the bidder firm or the rival firm have R&D spending that is below

industry average. Again, this finding is in line with our result in Table 6 where mean CARs are more negative for early-movers than for late-movers if R&D spending is low.

The univariate analysis of rival firms' response to bidder firm announcements of cross-border M&As therefore indicates that there is a contagion effect. This evidence supports Mitchell and Mulherin (1996) who note that mergers are signals of fundamental changes in conditions facing the industry. The generally negative announcing firm CAR, and the negative rival CAR, imply that the merger announcement sends an industry-wide signal that causes investors to re-evaluate other firms in the same industry. For example, rival firm investors may fear that industry conditions could lead their firms to engage in similar risky cross-border mergers that are value-destroying. This fear is more pronounced in early-mover rivals than in late-mover rivals. In general, our findings are more suggestive of a late-mover advantage rather than an early-mover advantage in cross-border M&A announcements. In addition, we have also shown that level of R&D as well as cultural distance impact announcement returns. Specifically, our results suggest that late-movers can observe and learn from early-movers' R&D and from their obstacles and mistakes encountered when entering a culturally distant country.

5.2. Regression Analysis

5.2.1. Bidder Firms

Table 8 presents regression results for the bidder firm sample. Specifically, we regress bidder firms' 3-day mean CAR on R&D expense relative to total sales in the year prior to the announcement, on Hofstede's cultural distance measure, on type of bidder firm (i.e., early-mover, follower, late-mover), and on other explanatory variables.⁸ All

Models show that R&D impacts the wealth effect of bidder firms positively, typically at a significant level. This suggests that bidder firms in general might wish to export their intangible assets, specifically R&D, beyond domestic borders because the acquisition seems beneficial and less costly than writing contracts (e.g. license and franchise agreements). We therefore find general support for the internalization theory (Morck and Yeung (1992)). We further provide some evidence for the signaling theory. Specifically, we find that firms that choose cash as their sole method of payment for the transaction relative to stock or mixed offerings experience positive wealth effects, significant at the 5-percent level. Travlos (1987) points out that, in the presence of information asymmetry (Myers and Majluf (1984)), bidder firms prefer cash payments when their stock is undervalued and stock payments if their stock is overvalued. We further show consistently that increasing relative size, which is the transaction value divided by the natural logarithm of the bidder firm's total assets, impacts the bidder firm announcement effect significantly positive. Our finding is in line with Ray and Warusawitharana (2007) who propose that firms transfer assets to more productive avenues. This efficacy assumption suggests that greater transaction value is associated with more positive bidder returns.

In Models 1 and 2 we include an early-mover dummy variable and interaction terms with the early-mover dummy in the regression. We find that above-average levels of R&D have a significant negative impact on the announcement effects of early-movers. In other words, being a strategic pioneer is associated with negative wealth effects. Confirming our univariate results, early-movers do not benefit from internalization benefits. This finding is contrary to Hypothesis 1a, and suggests that the benefit from

possessing intangible assets does not fully compensate for the early-mover's costs of entering a foreign country. Dewenter (1995) lists several cost disadvantages which include "establishing local contacts for suppliers and distributors; learning local regulations in areas such as job safety, environmental protection and new product approval; coordinating and communicating across geographic and cultural distances; and, managing exchange rate exposure" (p.483), among others.

Model 3 indicates that late-movers experience normal returns upon the announcement of a cross-border acquisition, regardless of their level of R&D and cultural distance. The positive, although not significant, coefficient for being a late-mover corresponds with the positive CARs of late-movers in the univariate analysis. Luo (1998) suggests that late-movers can learn from early-movers' mistakes and benefit from early-movers' efforts of educating local government, suppliers, and customers. Therefore, late-movers can outperform early-movers. These findings together with our univariate results provide support for a late-mover advantage in cross-border acquisitions and is in line with Hypothesis 1b.

Model 4 shows the significantly positive impact of above-average R&D on followers. This finding is in line with our univariate results, where followers with high levels of R&D experienced positive mean CARs while followers with low levels of R&D experienced negative mean CARs. Followers also can take advantage of observing early-movers and learning from their mistakes, and they can enter the foreign market while there might still be profitable targets available. As stated by Shankar et al. (1998), later entrants can outperform early-movers through superior innovation in product or strategy. Model 4 further indicates that followers with high levels of R&D encounter significantly

negative wealth effects if there is a large cultural distance between the U.S. and the target country. This implies that the challenges from successfully integrating a target firm from a culturally distant country outweigh the benefits from being an innovative follower.

In Table 9 we expand on models from the preceding table. In particular, Model 1 includes a control variable, PRIOR, for previous experience in the same geographic area as the target country or the target country itself. We show that representation either in the target country or its geographic region prior to the announcement is associated with positive announcement effects. Thus, these findings suggest that investors perceive cross-border acquisitions more favorably if the bidder firm is already familiar with the foreign market and its specific culture and, thereby, able to evade the learning curve of a new market entrant. In addition, Model 1 also indicates that being an early-mover has a significantly negative impact on the mean CAR compared to being a follower, while there is no perceived difference between late-movers and followers. This result provides further evidence that being an early-mover is generally not advantageous in our cross-border acquisition sample.

Model 2 indicates that while high levels of R&D in general impact the mean CAR positively, this observation is reversed as the cultural distance to the target country increases. We find that high levels of R&D spending have a negative effect on the wealth effects for early-movers. However, the effect becomes positive for the early-mover as the degree of cultural distance increases. This finding suggests that early-movers with above-average levels of R&D spending benefit from entering culturally distant target countries, providing some support for the internalization theory.⁹ Lastly, we show

evidence that announcements during expansionary economic periods impact the mean CARs significantly positive.

5.2.2. Rival Firms

Table 10 displays the regression results for the rival firms. In particular, we regress the rival firm's mean 3-day CAR on the bidder firm's 3-day CAR, bidder firm's R&D expense relative to total sales in the year prior to the announcement, Hofstede's cultural distance measure, type of bidder firm (i.e., early-mover, follower, late-mover), and on other explanatory variables. We find that the coefficient for bidder firms' CARs is positive throughout all models, significant at the 1 percent level. Supporting our univariate results, this finding suggests that the rival CAR tends to move in the same direction as the bidder CAR, indicative of a contagion effect for the rival firms in our sample. Therefore, a negative bidder firm CAR (complete sample, early-movers, followers) is associated with a negative rival firm CAR, and a positive bidder firm CAR (late-mover) elicits positive rival firm response. This implies that the merger event provides information about industry conditions (Mitchell and Mulherin (1996)), prompting investors to re-assess the values of other firms in the same industry.

Also consistent with the univariate results, the rival response is significantly lower for mergers involving greater cultural distance. We further find a lower, or more negative, rival firm reaction to takeovers involving bidder firms with strong intangibles.

While the rival firm market reaction has a tendency to move in the same direction as the bidder firm's market response, the regressions also provide some evidence of a competitive response in certain cases. For example, Panel A shows that the rival firm CAR is positively related to announcements made by early-movers, especially early-

movers who are strategic pioneers (i.e., those with high R&D). Recall from the bidder regression analysis in Tables 8 and 9 that early-movers, and strategic pioneers in particular, experienced significantly lower CARs. Thus, these factors impact the bidder and rival firm response in opposite ways. These findings are consistent with the earlier results indicating that the costs of being a pioneer bidder outweigh the potential benefits, and suggest that rival firms can benefit when the announcing firm loses. Rival firms benefit most significantly when the strategic pioneer acquires targets in culturally distant countries, where cost disadvantages (Dewenter (1995)) for these pioneers are likely to be great. In Panel B, similar competitive responses appear to occur for rivals of followers with high intangibles. In this case, followers with high R&D experienced higher CARs, while the rival firm reaction to these followers is significantly lower. This finding suggests that investors perceive innovative followers to be able to create barriers of entry by capturing scarce assets or by increasing switching costs (Lieberman and Montgomery (1988)), thereby leaving rivals with fewer or none other valuable investment alternatives (Carow et al. (2004)). Rival firms also experience negative CARs in response to innovative follower announcements if cultural distance is great. Our results suggest that investors perceive the acquisition to be value destroying and they appear to be concerned that rivals might engage in similarly value destroying activities.

The regressions in Panel C highlight the rival firm response to late-mover and follower announcements. Late-mover and follower rivals experience significantly lower announcement effects compared to early-mover rivals, which implies that rival firms benefit most when the bidder firm is an early-mover. This results suggests that rival firms can learn from the early-mover's mistakes and incorporate this knowledge in a

subsequent acquisition at a time when valuable investments are still available (Carow et al. (2004)), the foreign market and government are sympathetic towards US firms (Luo (1998)), existing products can be enhanced (Scherer (1980)), and barriers of entry can still be established (Lieberman and Montgomery (1988)).¹⁰

Table 11 shows the result of our logistic regression. The dependent variable is equal to one if the rival firm becomes a subsequent bidder in the region, and zero if the rival firm does not make an acquisition in the area. In support of Hypothesis 3c, the coefficient for the rival CAR is positive and significant at the 5% level, indicating that the likelihood that the rival will be a subsequent acquirer is related to the rival firm's CAR at the time of the initial bidder's announcement. The bidder firm R&D intensity, expansionary economy, and rival profitability also increase the likelihood of the rival becoming a subsequent bidder. The bidder CAR, exchange rate volatility, and size of the rival decreases this likelihood. Thus, overall, the results suggest that, at the time of the initial bidder announcement, investors have some ability to predict which rival firms may become subsequent acquirers in the future.¹¹

6. Conclusion

In examining the acquiring firm shareholder wealth effects in cross-border takeovers, we find evidence that cross-border mergers and acquisitions are wealth-destroying if the announcing firm is an early-mover, especially if the firm's R&D expenses are high. Thus, internalization benefits in general appear not to be large enough to compensate early-movers for the costs of entering the foreign market. However, we find that cultural distance between the U.S. and the target country has a positive impact

on the announcement effect of early-movers with high R&D spending. We therefore conclude that early-movers benefit from internalization in countries where contracting is more expensive.

Contrary to the domestic acquisition literature, we find evidence that cross-border acquisitions provide advantages to later market entrants. We show that innovative followers (i.e., those with high R&D spending) experience significantly positive CARs upon the announcement of a cross-border acquisition. The potential benefits to these innovative followers are plentiful. First, followers can learn from early-movers and thereby avoid costly mistakes. Further, followers can benefit from early-movers' groundwork of preparing the foreign market and government for the new U.S. presence in their country. Finally, followers can improve products and/or production offered by the early-movers which allows followers to ensure market share. Followers might also enter the foreign market early enough to secure loyal workers, suppliers, and customers. Contrary to early-movers, these followers enjoy positive CARs only if they expand into countries with a culture similar to the U.S., where successful integration of the target firm is relatively easy. We do not find any evidence that investors possess knowledge of subsequent announcement behavior of rival firms.

Rival firms tend to experience similar CARs as the announcing firm which is indicative of a contagion effect. Specifically, cross-border acquisitions announcements appear to provide information about industry conditions that prompt investors to re-assess values of other firms in the same industry. We further find some evidence for certain competitive responses. While cross-border acquisitions generally appear to be value-destroying to early-movers, they increase value for the rival firms. Consistent with our

earlier findings, it is beneficial to wait and possibly learn from early-movers. Rivals of followers, on the other hand, experience negative announcement CARs. This finding suggests that followers enjoy great benefits and may be able to create barriers of entry which makes it harder for rival firms to subsequently enter the foreign market.

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Table 1

Variables Used in Univariate and Regression Analyses

This table defines the different variables used in this paper's univariate and regression analyses.

Variables	Definitions
1. HCD	Cultural distance measure based on Hofstede's cultural dimensions. See section 4.4. of this paper for the exact computation.
2. R&D	Dummy variable indicating that the bidder firm's expense for research and development relative to total sales in the year prior to the announcement was greater than the industry average.
3. RR&D	Dummy variable indicating that the rival firm's expense for research and development relative to total sales in the year prior to the announcement was greater than the industry average.
4. EM	Dummy variable indicating that the announcing firm is an early-mover.
5. EMR	Dummy variable indicating that the rival firm is an early-mover
6. F	Dummy variable indicating that the announcing firm is a follower.
7. FR	Dummy variable indicating that the rival firm is a follower.
8. LM	Dummy variable indicating that the announcing firm is a late-mover.
9. LMR	Dummy variable indicating that the rival firm is a late-mover.
10. Cash	Dummy variable indicating that the acquisition was financed 100% using cash.
11. RSize	Transaction value of the acquisition divided by the natural logarithm of the announcing firm's total assets in the year prior to the announcement.

Table 1

Variables Used in Univariate and Regression Analyses (cont.)

This table defines the different variables used in this paper's univariate and regression analyses.

Variables	Definitions
12. Profit	Announcing firm's profitability, measured as the annual income divided by total assets in the year prior to the announcement.
13. Profit	Rival firm's profitability, measured as the annual income divided by total assets in the year prior to the announcement.
14. Std	Exchange rate volatility
15. Expansion	Dummy variable indicating that the announcement took place during an expansionary economy.
16. Prior	Dummy variable indicating that the announcing firm has previous experience in the target country or its geographic region.
17. PriorR	Dummy variable indicating that the rival firm has previous experience in the target country or its geographic region.
18. RProfit	Rival firm's profitability, measured as the annual income divided by total assets in the year prior to the announcement.
19. CAR	Announcing firm's 3-day cumulative abnormal return.
20. RCAR	Rival firm's 3-day cumulative abnormal return at the time of the bidder firm's announcement.

Table 2

Distribution by year of announcement

The number of sample firms announcing cross-border M&As in a particular year over the time frame from 1987 to 2004 is shown below.

Year	Frequency	%	Cumulative frequency	Cumulative %
1987	1	0.58	1	0.58
1988	4	2.31	5	2.89
1989	4	2.31	9	5.20
1990	2	1.16	11	6.36
1991	2	1.16	13	7.51
1992	5	2.89	18	10.40
1993	2	1.16	20	11.56
1994	5	2.89	25	14.45
1995	8	4.62	33	19.08
1996	7	4.05	40	23.12
1997	10	5.78	50	28.90
1998	22	12.72	72	41.62
1999	14	8.09	86	49.71
2000	26	15.03	112	64.74
2001	15	8.67	127	73.41
2002	12	6.94	139	80.35
2003	12	6.94	151	87.28
2004	22	12.72	173	100.00

Table 3

Distribution by target country

The number of sample firms announcing cross-border M&As in a particular target country is shown below.

Country	Frequency	%
Argentina	6	3.47
Canada	62	35.84
France	2	1.16
Germany	16	9.25
Israel	9	5.20
Netherlands	7	4.05
Sweden	4	2.31
United Kingdom	67	38.73

Table 4

Distribution by Early Movers, Followers, and Late Movers

The distribution of Early Movers, Followers, and Late Movers among the sample firms announcing cross-border M&As is shown below.

Announcing Firm	Frequency	%
Early Mover	32	18.50
Follower	108	62.43
Late Mover	33	19.08

Table 5**Descriptive statistics for announcing firm sample and industry-related rival portfolio**

Panel A provides the mean and median descriptive for firms announcing cross-border M&As.

Panel B provides similar statistics for the industry rival firm portfolios of the announcing sample firms.

Panels C and D provide rival firm statistics for rival firms that have cross-border M&A announcements themselves and rivals that do not have any cross-border M&A announcements, respectively.

Panels E and F provide rival firm statistics for rival firms that become subsequent bidders themselves and rival firms that do not become subsequent bidders, respectively.

Panels G and H provide rival firm statistics for rival firms that become subsequent bidders with no previous announcements and with previous announcements, respectively.

Key Variables	Mean	Median	Number reporting
Panel A: Announcing Firms			
HCD			
Transaction Value (in millions)	264.7955376	58.752	173
Exchange Rate Volatility	0.055388523	0.039266492	173
Net Income (in millions)	262.4674855	23.566	173
Cash Flow (in millions)	405.1683099	59.703	173
Sales (in millions)	1714.977786	662.187	173
Research and development (in millions)	299.3869	18.296	173
Advertisement (in millions)	61.12714	0	173
Total assets (in millions)	2945.394624	915.431	173
Research and development / Sales	0.104491	0.075011	173
Advertisement / Sales	0.006562	0	173
Profitability (Net Income / Total Assets)	0.033003882	0.044789873	173
Size (ln(total assets))	6.700464279	6.819394993	173
Relative Size (Transaction Value / Size)	0.156824705	0.093146519	173
ROE	8.9495	9.982	173
CAR	-0.00719	-0.0039	173
Panel B: Industry Rivals - All Rivals			
Net Income (in millions)	370.1479	16.321	1354
Cash Flow (in millions)	532.2839	53.8	1343
Sales (in millions)	2083.385	486.484	1354
Research and development (in millions)	223.3235	19.605	1354
Advertisement (in millions)	35.92305	0	1354
Total assets (in millions)	3612.424	759.639	1353
Research and development / Sales	0.158183	0.112893	1354
Advertisement / Sales	0.008223	0	1354
Profitability (Net Income / Total Assets)	-0.00535	0.04816	1353
Size (ln(total assets))	6.561352	6.632843	1353
ROE	2.83758	9.786	1354
Rival CAR	-0.00348*	-0.00164**	1426
Announcing Firm CAR	-0.00288	-0.00075	1426

Table 5

Descriptive statistics for announcing firm sample and industry-related rival portfolio (cont.)

Panel A provides the mean and median descriptive for firms announcing cross-border M&As.
Panel B provides similar statistics for the industry rival firm portfolios of the announcing sample firms.
Panels C and D provide rival firm statistics for rival firms that have cross-border M&A announcements themselves and rivals that do not have any cross-border M&A announcements, respectively.
Panels E and F provide rival firm statistics for rival firms that become subsequent bidders themselves and rival firms that do not become subsequent bidders, respectively.
Panels G and H provide rival firm statistics for rival firms that become subsequent bidders with no previous announcements and with previous announcements, respectively.

Key Variables	Mean	Median	Number reporting
Panel C: Industry Rivals - Matched within-sample			
Net Income (in millions)	375.9977	14.751	1215
Cash Flow (in millions)	535.003	52.877	1204
Sales (in millions)	1995.251	464.41	1215
Research and development (in millions)	228.2555	20.2	1215
Advertisement (in millions)	36.28071	0	1215
Total assets (in millions)	3603.406	763.485	1214
Research and development / Sales	0.165132	0.123852	1215
Advertisement / Sales	0.008224	0	1215
Profitability (Net Income / Total Assets)	-0.00805	0.04864	1214
Size (ln(total assets))	6.567752	6.637881	1214
ROE	1.82179	9.784	1215
Rival CAR	-0.00381**	-0.00179**	1287
Announcing Firm CAR	-0.00284	-0.00075	1287
Panel D: Industry Rivals - Matched out-of-sample			
Net Income (in millions)	319.014	27.757	139
Cash Flow (in millions)	508.7308	56.664	139
Sales (in millions)	2853.763	600.111	139
Research and development (in millions)	180.2127	17	139
Advertisement (in millions)	32.79673	0	139
Total assets (in millions)	3691.187	744.323	139
Research and development / Sales	0.097445	0.056258	139
Advertisement / Sales	0.008213	0	139
Profitability (Net Income / Total Assets)	0.018226	0.046656	139
Size (ln(total assets))	6.700135	6.612475	139
ROE	11.71653	10.576	139
Rival CAR	-0.00044	0.00136	139
Announcing Firm CAR	-0.00334	0.0002	139

Table 5**Descriptive statistics for announcing firm sample and industry-related rival portfolio (cont.)**

Panel A provides the mean and median descriptive for firms announcing cross-border M&As.

Panel B provides similar statistics for the industry rival firm portfolios of the announcing sample firms.

Panels C and D provide rival firm statistics for rival firms that have cross-border M&A announcements themselves and rivals that do not have any cross-border M&A announcements, respectively.

Panels E and F provide rival firm statistics for rival firms that become subsequent bidders themselves and rival firms that do not become subsequent bidders, respectively.

Panels G and H provide rival firm statistics for rival firms that become subsequent bidders with no previous announcements and with previous announcements, respectively.

Key Variables	Mean	Median	Number reporting
Panel E: Industry Rivals - Subsequent Bidders			
Net Income (in millions)	373.769	13.692	601
Cash Flow (in millions)	522.8843	39.643	598
Sales (in millions)	1729.431	328.51	601
Research and development (in millions)	222.8342	17.2	601
Advertisement (in millions)	29.53249	0	601
Total assets (in millions)	3073.554	492.315	601
Research and development / Sales	0.204412	0.119659	601
Advertisement / Sales	0.007908	0	601
Profitability (Net Income / Total Assets)	0.0239	0.05804	601
Size (ln(total assets))	6.361874	6.199119	601
ROE	6.3625	9.982	601
Rival CAR	-0.00335	-0.00212*	665
Announcing Firm CAR	-0.01227***	-0.00937***	665
Panel F: Industry Rivals - No Subsequent Bidders			
Net Income (in millions)	367.2578	21.313	753
Cash Flow (in millions)	539	70.633	745
Sales (in millions)	2365.89	635.045	753
Research and development (in millions)	223.714	37.5	753
Advertisement (in millions)	41.02362	0	753
Total assets (in millions)	4043.091	907.326	752
Research and development / Sales	0.121286	0.11176	753
Advertisement / Sales	0.008474	0	753
Profitability (Net Income / Total Assets)	-0.02872	0.04194	752
Size (ln(total assets))	6.75676	6.810502	752
ROE	0.02416	9.415	753
Rival CAR	-0.0036	-0.00112	761
Announcing Firm CAR	0.005312	0.004446***	761

Table 5**Descriptive statistics for announcing firm sample and industry-related rival portfolio (cont.)**

Panel A provides the mean and median descriptive for firms announcing cross-border M&As.

Panel B provides similar statistics for the industry rival firm portfolios of the announcing sample firms.

Panels C and D provide rival firm statistics for rival firms that have cross-border M&A announcements themselves and rivals that do not have any cross-border M&A announcements, respectively.

Panels E and F provide rival firm statistics for rival firms that become subsequent bidders themselves and rival firms that do not become subsequent bidders, respectively.

Panels G and H provide rival firm statistics for rival firms that become subsequent bidders with no previous announcements and with previous announcements, respectively.

Key Variables	Mean	Median	Number reporting
Panel G: Industry Rivals - Subsequent Bidders without Previous Bids			
Net Income (in millions)	69.2843	8.137	458
Cash Flow (in millions)	140.5702	19.1575	458
Sales (in millions)	639.561	170.538	458
Research and development (in millions)	51.5041	12.7795	458
Advertisement (in millions)	4.399587	0	458
Total assets (in millions)	1056.421	300.178	458
Research and development / Sales	0.22772	0.106385	458
Advertisement / Sales	0.007989	0	458
Profitability (Net Income / Total Assets)	0.01207	0.05655	458
Size (ln(total assets))	5.775905	5.704298	458
ROE	5.773	9.381	458
Rival CAR	-0.00319	-0.00218*	522
Announcing Firm CAR	-0.01176***	-0.0097***	522
Panel H: Industry Rivals - Subsequent Bidders with Previous Bids			
Net Income (in millions)	1348.971	154.896	143
Cash Flow (in millions)	1773.597	536.312	140
Sales (in millions)	5220.065	1506.555	143
Research and development (in millions)	771.5698	198.677	143
Advertisement (in millions)	110.0281	0	143
Total assets (in millions)	9534.019	4233.277	143
Research and development / Sales	0.129761	0.150403	143
Advertisement / Sales	0.007647	0	143
Profitability (Net Income / Total Assets)	0.06178	0.07293	143
Size (ln(total assets))	8.238611	8.350732	143
ROE	8.2498	16.094	143
Rival CAR	-0.00392	-0.00204	143
Announcing Firm CAR	-0.01412	-0.00671*	173

Table 6

Univariate Analysis for Bidder Firms

Panel A. Mean and Median CARs

	All Bidder Firms (N=173)		Early Movers (N=32)		Pioneers (N=12)		Followers (N=108)		Late Movers (N=33)	
Window	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
(-1,+1)	-0.677	-0.31	-2.084	-2.226 *	-0.03043	-0.1086	-0.928	-0.284	1.508	1.015
(0,+1)	-0.431	-0.531	-1.859	-1.095 **	-0.03172	-0.00971	-0.503	-0.558	1.192	0.69

Panel B. Sub-samples by Type of Bidder Firms and Research & Development

ALL							
Window							ttest
(-1,+1)	HI R&D	0.5136	0.2604	LOW R&D	-0.842	-0.425	0.51
(0,+1)	N = 21	-0.012	-0.744	N = 152	-0.489	-0.408	0.2
EM							
(-1,+1)	HI R&D	-0.03043	-0.01086	LOW R&D	-1.509	-3.119	-0.47
(0,+1)	N = 12	-0.03172	-0.00971	N = 20	-1.072	-1.202	-0.72
Followers							
(-1,+1)	HI R&D	0.081993	0.025231	LOW R&D	-1.465 *	-0.566	1.37
(0,+1)	N = 6	0.066665	0.03414	N = 102	-0.925	-0.61	1.18
LM							
(-1,+1)	HI R&D	-0.00632	0.0026	LOW R&D	1.7223	1.3037	-0.54
(0,+1)	N = 3	-0.00725	-0.01088	N = 30	1.3833	0.7069	-0.48

Panel C. Differences in Means

Window	EM vs F and LM vs EM		F vs EM		Pioneers		Pioneers		EMResLOW
	LM	and F	and LM	EM vs LM	EM vs F	LM vs F	vs F	vs LM	vs LM
(-1,+1)	1.03	0.49	-1.64	-1.81 *	-0.65	1.44	0.79	-1.79 *	-1.34
(0,+1)	1.08	0.15	-1.26	-1.64	-0.79	1.02	1.03	-1.85 *	-1.04

Panel D. Differences in Means by Research & Development

Window		Mean	Median	Mean	Median	ttest
(-1,+1)	EMall	-2.084	-2.226 *	LMResLOW	1.7223	1.3037
(0,+1)	N = 32	-1.859	-1.095 **	N = 30	1.3833	0.7069
(-1,+1)	EMResHI	-3.043	-1.086	LMResLOW	1.7223	1.3037
(0,+1)	N = 12	-3.172	-0.971	N = 30	1.3833	0.7069
(-1,+1)	EMResHI	-3.043	-1.086	LMResHI	-0.632	0.26
(0,+1)	N = 12	-3.172	-0.971	N = 3	-0.725	-1.088
(-1,+1)	EMResLOW	-1.509	-3.119	LMResLOW	1.7223	1.3037
(0,+1)	N = 20	-1.072	-1.202	N = 30	1.3833	0.7069

Panel E. Sub-sample of Bidder Firms when Cultural Distance is High.

Window		Mean	Median	Mean	Median	ttest
(-1,+1)	EM	-4.685 ***	-4.425	Follower	-1.312	-0.232
(0,+1)	N = 4	-2.222	-2.265	N = 19	-0.509	-1.047
(-1,+1)	EM	-4.685 ***	-4.425	LM	5.1083 *	6.8785
(0,+1)	N = 4	-2.222	-2.265	N = 5	0.703	-0.241
(-1,+1)	LM	5.1083 *	6.8785	Follower	-1.312	-0.232
(0,+1)	N = 5	0.703	-0.241	N = 19	-0.509	-1.047

Table 7

Univariate Analysis for Rival Firms

A. Rival Means and Medians

Window	All Rival Firms (N=1426)		Rivals to Early Movers (N=227)		Rivals to Followers (N=902)		Rivals to Late Movers (N=297)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
(-1,+1)	-0.348 *	-0.164 **	-0.356	-0.255	-0.537 **	-0.301 ***	0.229	0.371
(0,+1)	-0.239	-0.287 ***	-0.174	-0.590 *	-0.434 **	-0.520 ***	0.304	0.255

B. Differences in Means

Window	EM vs AllOther	LM vs AllOther	F vs AllOther	EM vs LM	EM vs F	LM vs F
(-1,+1)	-0.02	1.74 *	-1.45	-1.17	0.43	1.75 *
(0,+1)	0.22	2.18 **	-1.85 *	-1.19	0.69	2.22 **

C. Level of Hofstede's Cultural Distance (HCD)

Window		Mean	Median		Mean	Median	ttest
(-1,+1)	HCD HI	-1.676 ***	-0.570 ***	HCD LOW	-0.208	-0.113	-2.39 **
(0,+1)	N = 136	-1.412 ***	-0.779 ***	N = 1290	-0.115	-0.218 ***	-2.55 **
	HCD HI			HCD LOW			
(-1,+1)	EM	-3.314 **	-2.10 ***	EM	-0.131	0.005	-2.40 **
(0,+1)	N = 16	-1.882 *	-1.145	N = 211	-0.045	-0.531	-1.51
(-1,+1)	F	-1.843 **	-0.418 **	F	-0.385	-0.281 **	-1.83 *
(0,+1)	N = 94	-1.280 *	-0.575 *	N = 808	-0.336	-0.520 ***	-1.27
(-1,+1)	LM	-0.065	0.631	LM	0.2575	0.3594	-0.25
(0,+1)	N = 26	-1.598 **	-0.873 *	N = 271	0.487 *	0.282 **	-2.28 **
	ttest						
Window	EM vs F	EM vs LM	LM vs F	EM vs F	EM vs LM	LM vs F	
(-1,+1)	-1.05	-2.03 **	1.33	0.58	-0.74	1.39	
(0,+1)	-0.49	-0.23	-0.31	0.75	-1.26	2.37 **	

Table 7

Univariate Analysis for Rival Firms (cont.)

D. Previous Rival Announcement (PBD)

Window		Mean	Median	Mean		Median	ttest
(-1,+1)	No PBD	-0.285	-0.162	PBD	-0.403	-0.176 *	0.33
(0,+1)	N = 657	-0.132	-0.415 *	N = 769	-0.33	-0.249 ***	0.66
(-1,+1)	No PBD: EM	-0.129	-0.163	PBD: EM	-1.560 *	-0.636	1.53
(0,+1)	N = 191	-0.063	-0.59	N = 36	-0.767	-0.555	1.07
(-1,+1)	No PBD: F	-0.447	-0.218	PBD: F	-0.610 *	-0.379 **	0.34
(0,+1)	N = 408	-0.295	-0.436 *	N = 494	-0.549 *	-0.617 ***	0.61
(-1,+1)	No PBD: LM	0.3462	0.5512	PBD: LM	0.2009	0.371	0.11
(0,+1)	N = 58	0.7846	0.3997	N = 239	0.1878	0.2096	0.59
ttest							
Window	EM vs F	EM vs LM	LM vs F	EM vs F	EM vs LM	LM vs F	
(-1,+1)	0.63	-0.36	0.61	-1.08	-1.92 *	1.69 *	
(0,+1)	0.5	-0.81	1.05	-0.35	-1.58	2.03 **	

E. No PBD; Subsequent Bidder Announcement (SBD)

Window		Mean	Median	Mean		Median	ttest
(-1,+1)	No SBD	-0.044	0.136	SBD	-0.349	-2.18 *	0.47
(0,+1)	N = 139	0.094	-0.44	N = 518	-0.193	-0.356 **	0.52
(-1,+1)	No SBD: EM	2.362	-0.047	SBD: EM	-0.487	-0.163	1.90 *
(0,+1)	N = 24	1.37	-0.599	N = 167	-0.269	-0.59	0.94
(-1,+1)	No SBD: F	-0.365	0.047	SBD: F	-0.47	-0.281	0.14
(0,+1)	N = 87	0.063	-0.415	N = 321	-0.392	-0.468 **	0.75
(-1,+1)	No SBD: LM	-1.11	0.842	SBD: LM	1.7053	0.0464	-1.11
(0,+1)	N = 28	-0.905	0.083	N = 30	2.3615 *	0.3997 **	-1.69 *
ttest							
Window	EM vs F	EM vs LM	LM vs F	EM vs F	EM vs LM	LM vs F	
(-1,+1)	1.90 *	1.51	-0.4	-0.03	-1.17	1.16	
(0,+1)	0.74	1.01	-0.62	0.26	-2.04 **	2.29 **	

Table 7

Univariate Analysis for Rival Firms (cont.)

F. Rival Means and Medians

Window	Rivals are Early Movers (N=287)		Rivals are Followers (N=761)		Rivals are Late Movers (N=239)		External Rivals (N=139)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
(-1,+1)	-0.714	-0.263 **	-0.336	-0.152 *	-0.127	-0.165	-0.044	0.136
(0,+1)	-0.799 **	-0.460 ***	-0.191	-0.232 **	0.087	-0.262	0.094	-0.44

G. Differences in Means

Window	EM vs External	LM vs External	F vs External	EM vs LM	EM vs F	LM vs F
(-1,+1)	-0.84	-0.11	-0.46	-0.88	-0.72	0.4
(0,+1)	-1.36	-0.01	-0.52	-1.61	-1.43	0.64

H. Differences in Means by Research & Development (Res0 = Level of R&D of Bidder Firm)

Window		Mean	Median	Mean	Median	ttest	
(-1,+1)	EMR Res0low	-0.544	-0.176	EMR Res0hi	-2.175 **	-0.855 **	1.62
(0,+1)	N =257	-0.818 *	-0.421 ***	N = 30	-0.639	-0.861	-0.26
(-1,+1)	FR Res0low	-0.337	-0.141	FR Res0hi	-0.329	-0.921	-0.01
(0,+1)	N =678	-0.17	-0.165 *	N = 83	-0.36	-0.719	0.32
(-1,+1)	LMR ResD0low	0.211	0.061	LMR Res0hi	-3.016 **	-1.721 *	2.13 **
(0,+1)	N =214	0.245	-0.168	N = 25	-1.268	-0.442	1.18
(-1,+1)	OtherR Res0low	-0.437	0.078	OtherR Res0h	3.2079	1.4709	-1.94 *
(0,+1)	N =124	-0.196	-0.466	N = 15	2.4875	0.3968	-1.06
Res0low							
Window	EM vs External	LM vs External	F vs External	EM vs LM	EM vs F	LM vs F	
(-1,+1)	-0.13	0.82	0.16	-1.06	-0.36	1	
(0,+1)	-0.95	0.66	0.05	-1.77 *	-1.39	0.9	
Res0hi							
Window	EM vs External	LM vs External	F vs External	EM vs LM	EM vs F	LM vs F	
(-1,+1)	-2.40 **	-2.55 **	-1.64	0.5	-1.62	-1.73 *	
(0,+1)	-1.22	-1.37	-1.12	0.5	-0.36	-0.78	

I. Differences in Means by Research & Development (ResR = Level of R&D of Rival Firm)

Window		Mean	Median	Mean	Median	ttest	
(-1,+1)	EMR ResRlow	-0.850 *	-0.168 *	EMR ResRhi	-0.48	-0.395	-0.33
(0,+1)	N =182	-0.988 **	-0.484 ***	N =103	-0.45	-0.215	-0.61
(-1,+1)	FR ResRlow	-0.294	-0.129	FR ResRhi	-1.111	-0.947	0.74
(0,+1)	N =724	-0.173	-0.167 *	N = 33	-0.567	-0.683	0.43
(-1,+1)	LM ResRlow	-0.075	-0.028	LMR ResRhi	-0.476	-0.568	0.29
(0,+1)	N =208	0.103	-0.213	N = 31	-0.02	-0.503	0.1
(-1,+1)	OtherR ResRlow	-0.533	0.524	OtherR ResRh	1.791	0.8986	-1.17
(0,+1)	N = 35	-0.56	-0.536	N = 21	1.468	-0.554	-1.02
ResRlow							
Window	EM vs External	LM vs External	F vs External	EM vs LM	EM vs F	LM vs F	
(-1,+1)	-0.25	0.35	0.22	-1.11	-1.07	0.4	
(0,+1)	-0.42	0.61	0.44	-1.87 *	-1.90 *	0.61	
ResRhi							
Window	EM vs External	LM vs External	F vs External	EM vs LM	EM vs F	LM vs F	
(-1,+1)	-1.28	-1.05	-1.72 *	0	0.46	0.36	
(0,+1)	-1	-0.73	-1.05	-0.27	0.1	0.38	

Table 8**Announcing Firm Regression**

Variable	Model 1		Model 2		Model 3		Model 4	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	-0.0644	-2.61***	-0.06518	-2.64***	-0.07302	-2.85***	-0.06575	-2.53**
HCD	-0.00644	-0.55	-0.00699	-0.59	-0.00407	-0.34	-0.00604	-0.52
R&D	0.05687	1.98**	0.0571	1.99**	0.02073	0.97	-0.03051	-1.24
Cash	0.03258	2.44**	0.03365	2.51**	0.03253	2.39**	0.03309	2.51**
Rsize	0.08549	2.09**	0.08369	2.05**	0.08149	1.96*	0.0836	2.06**
Profit	-0.03528	-0.78	-0.02525	-0.55	-0.03492	-0.77	-0.03143	-0.72
Std	0.12334	1.31	0.12475	1.32	0.09851	1	0.11209	1.19
EM	-0.00668	-0.33	-0.00733	-0.36				
EM*R&D	-0.0743	-1.78*	-0.1108	-2.12**				
EM*R&D*HCD			0.29514	1.17				
LM					0.02522	1.39		
LM*R&D					-0.04431	-0.2		
LM*R&D*HCD					-0.06827	-0.03		
Follower							-0.01447	-1.01
Follower*R&D							0.2804	3.2***
Follower*R&D*HCD							-0.45531	-1.98**
Expansion	0.02268	1	0.02299	1.01	0.02677	1.15	0.03412	1.51
N	173		173		173		173	
Adj. R2	6.49%		6.69%		4.37%		10.34%	
F-Statistic	2.33**		2.23**		1.79*		2.98***	

Table 9**Announcing Firm Regression – Including PRIOR variable**

Variable	Model 1		Model 2	
	Coeff	t-Stat	Coeff	t-Stat
Intercept	-0.0953	-2.71***	-0.0840	-3.32***
HCD	0.0170	1.17	-0.0055	-0.47
R&D	0.0291	1.22	0.2548	3.01***
R&D*HCD			-0.4638	-2.01**
Cash	0.0366	2.38**	0.0325	2.43**
Rsize	0.0673	1.52	0.0845	2.06**
Profit	-0.0549	-1.11	-0.0101	-0.22
Std	-0.0749	-0.52	0.0971	1.02
EM	-0.0394	-1.8*	-0.0030	-0.15
EM*R&D			-0.3087	-3.26***
EM*R&D*HCD			0.7716	2.25**
LM	0.0200	1.11	0.0272	1.52
LM*R&D	0.0313	1.11	-0.2810	-1.2
LM*R&D*HCD	0.0301	1.74*	0.3905	0.17
Expansion	0.0313	1.11	0.0381	1.66*
PRIOR	0.0301	1.74*		
N	121		173	
Adj. R2	7.30%		9.79%	
F-Statistic	1.96**		2.33***	

Table 10

Rival Firm Regression

Panel A Variables	Model 1		Model 2		Model 3	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	0.01445	1.63	0.01695	1.91*	0.01683	1.9*
CAR	0.12571	6.98***	0.13619	7.38***	0.13664	7.41***
HCD	-0.01037	-2.46**	-0.01048	-2.5**	-0.01042	-2.48**
R&D	-0.01407	-1.19	-0.04338	-2.62***	-0.04294	-2.66***
R&D*HCD	0.0137	0.26	0.07811	1.36	0.07536	1.33
Cash	-0.00232	-0.66	-0.00303	-0.86	-0.00283	-0.8
STD	0.08471	1.82*	0.08053	1.73*	0.07846	1.69*
Profit	-0.000563	-0.04	-0.00812	-0.55	-0.0087	-0.59
RProfit	0.00907	1.5	0.0091	1.51	0.00905	1.5
Expansion	-0.01323	-2.31**	-0.01386	-2.43**	-0.0137	-2.4**
Prior	-0.00802	-1.29	-0.00854	-1.38	-0.00858	-1.39
EM	0.0153	2.83***	0.01154	2.06**	0.01154	2.07**
EM*R&D			0.03864	2.51**		
EM*R&D*HCD					0.32662	2.61***
N	997		997		997	
Adj. R2	4.90%		5.41%		5.46%	
F-Statistic	5.67 ***		5.75 ***		5.79 ***	

Panel B Variables	Model 1		Model 2		Model 3	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	0.01524	1.69*	0.01836	2.03**	0.01816	2.01**
CAR	0.11374	6.56***	0.13119	7.14***	0.13127	7.15***
HCD	-0.00957	-2.25**	-0.00981	-2.32**	-0.00973	-2.3**
R&D	-0.00731	-0.64	-0.00223	-0.19	-0.04629	-2.6***
R&D*HCD	0.0048	0.09	0.09162	1.52	0.45964	2.74***
Cash	-0.00259	-0.73	-0.0038	-1.06	-0.00357	-1
STD	0.06675	1.39	0.06137	1.28	0.05881	1.23
Profit	0.01128	0.8	-0.00121	-0.08	-0.0015	-0.1
RProfit	0.00934	1.54	0.0094	1.56	0.00934	1.55
Expansion	-0.00817	-1.43	-0.0109	-1.89*	-0.01066	-1.85*
Prior	-0.00628	-1.01	-0.00731	-1.18	-0.00732	-1.18
Follower	-0.00719	-1.92*	-0.00433	-1.12	-0.00438	-1.14
Follower*R&D			-0.04555	-2.8***		
Follower*R&D*HCD					-0.3733	-2.85***
N	997		997		997	
Adj. R2	4.49%		5.15%		5.17%	
F-Statistic	5.25 ***		5.50 ***		5.53 ***	

Table 10

Rival Firm Regression (cont.)

Panel C Variables	Model 1		Model 2		Model 3	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	0.02929	2.6***	0.03097	2.72***	0.03083	2.71***
CAR	0.1253	6.89***	0.14135	7.38***	0.1417	7.41***
HCD	-0.01028	-2.42**	-0.01051	-2.48**	-0.01045	-2.46**
R&D	-0.01403	-1.19	-0.00719	-0.57	-0.05205	-2.89***
R&D*HCD	0.01436	0.28	0.09837	1.63	0.4768	2.8***
Cash	-0.00238	-0.67	-0.00348	-0.97	-0.00324	-0.91
STD	0.08252	1.7*	0.07765	1.6	0.07542	1.55
Profit	0.000172	0.01	-0.01143	-0.73	-0.01201	-0.76
RProfit	0.00904	1.5	0.00912	1.51	0.00905	1.5
Expansion	-0.01287	-2.1**	-0.01511	-2.44**	-0.01491	-2.41**
Prior	-0.00789	-1.26	-0.00883	-1.41	-0.00887	-1.42
LM	-0.01458	-2.07**	-0.01326	-1.84*	-0.01331	-1.85*
LM*R&D			-0.01166	-0.42		
LM*R&D*HCD					-0.11346	-0.51
Follower	-0.01536	-2.83***	-0.01177	-2.09**	-0.0118	-2.1**
Follower*R&D			-0.04587	-2.76***		
Follower*R&D*HCD					-0.38277	-2.84***
N	997		997		997	
Adj. R2	4.81%		5.35%		5.39%	
F-Statistic	5.19 ***		5.02 ***		5.06 ***	

Table 11**Logistic Regression**

Variables	Model 1		Model 2		Model 3	
	Coefficient	Chi-Square	Coefficient	Chi-Square	Coefficient	Chi-Square
Intercept	0.52	2.35	-0.35	0.53	1.27	5.67 **
RCAR	2.63	5.41 **	3.21	5.55 **	3.50	4.25 **
CAR	-2.76	16.80 ***	-3.60	21.07 ***	-3.17	11.45 ***
HCD	0.06	0.17	0.22	1.47	-0.07	0.16
R&D	0.68	11.43 ***	1.16	16.77 ***	0.66	5.83 **
RR&D	-0.60	11.01 ***	-0.65	8.89 ***	-0.50	3.90 **
Expansion	0.85	14.48 ***	1.12	21.30 ***	0.74	5.08 **
STD	-5.90	9.04 ***	-5.87	7.39 ***	-7.24	6.84 ***
RSize	-0.17	22.03 ***	-0.13	9.06 ***	-0.16	9.88 ***
RProfit	1.59	22.41 ***	1.59	11.72 ***	1.76	10.57 ***
Prior			0.38	2.00		
PriorR					-0.43	2.26
N	1267		958		639	
Likelihood Ratio	115.4 ***		97.0 ***		69.1 ***	
Score	99.0 ***		85.8 ***		62.5 ***	
Wald	93.6 ***		79.7 ***		55.6 ***	

Footnotes

- 1 Hofstede's cultural typology is widely used in the social science literature, and the *Social Science Citation Index* by Thomson lists Geert Hofstede among the top 100 most cited authors. Sondergaard (1994, 2002) addresses common concerns about the cultural dimensions and finds validation in Hofstede's approach. Specifically, he finds that Hofstede's results were confirmed in replication studies by other researchers as well as in Hofstede's own 2001 publication, and that the dimensions are frequently being used as a paradigm in studies that involve cultural differences. A detailed description of the typology is available in the appendix of this paper.
- 2 Kogut and Singh (1988) point out that although this particular measure creates weights related to the index variance, there should be no theoretical correlation between any possible measurement errors and other independent variables.
- 3 Specifically, we divide geographic area into the following regions: Africa, Asia, Australia, Europe, North America, and South America. Our results do not differ significantly when we substitute PRIOR for experience in the target country only, experience in the same Hofstede area, or any previous international experience by the bidder firm.
- 4 We controlled for additional variables but found them not to be significant and, therefore, we dropped them from the models. Specifically, we also controlled for: *HOSTILE* (dummy variable that takes the value of one if the transaction was hostile, and zero if otherwise or if not indicated), *DEV* (dummy variable that takes the value of one if the target country is a developed country, and zero otherwise), *EXRATE* (relative strength of the target country's currency with respect to the U.S. dollar), and *SIZE* indicates bidder firm's size in the year prior to the cross-border M&A announcement, and it is measured by the natural logarithm of the firm's total assets. This information is found on Compustat.
- 5 Recessions occurred from July 1990 through March 1991, and from March 2001 through November 2001. All other time periods were expansions.
- 6 We also test Hypothesis 1a using a different indicator for Strategic Pioneers. Specifically, we look at early Movers that pay for the acquisition of the foreign target in cash. Carow et al. (2004) state that bidder firms that pay for the acquisition in cash are more likely to experience superior stock price performance. In our sample, the mean CARs for Early Movers that pay in cash are positive but not significant, and their median CARs are negative. Further, there is no significant difference between the mean CARs of Early Movers that pay in cash and all other firms that pay in cash.

- 7 Our sample of rival firms consists of firms that have announcements themselves and firms that have no announcements at all. Rivals that have announcements fall either into the category of being themselves an Early Mover, Follower, or Late Mover.
- 8 Regressions of the mean 2-day CAR on the same explanatory variables are not shown but they indicate similar results.
- 9 Early Movers with high R&D appear to stay away from countries with highly different cultures and instead make acquisitions in countries with more moderate degrees of cultural distant.
- 10 This evidence is driven by rival firms that actually engage in cross-border M&As themselves. Our subsample of rivals that does not engage in M&As shows no significant differences between the type of bidder firm.
- 11 Given the statistically significant (at the 5-percent confidence level) relationship between the rival firm's CAR and its likelihood of becoming a subsequent bidder, we examine whether investors might have any insight about rival firms' subsequent cross-border acquisition intentions. Specifically, we are interest in testing if there is a statistical difference in rival CAR between subsequent early-movers and subsequent late-movers at the time of the initial bid of early-movers. The regression analysis, which is omitted in this paper, does not indicate the proposed statistical difference and we therefore reject Hypothesis 3e. According to our results, at the time of the initial bidder announcement, investors seem to not have enough information to differentiate between rivals that become early-movers, late-movers, or no subsequent bidders at all.

Appendix 1

Geert Hofstede's cultural dimensions as described on his Web site, <http://www.geert-hofstede.com>.

Power Distance Index (PDI) focuses on the degree of equality, or inequality, between people in the country's society. A High Power Distance ranking indicates that inequalities of power and wealth have been allowed to grow within the society. These societies are more likely to follow a caste system that does not allow significant upward mobility of its citizens. A Low Power Distance ranking indicates the society de-emphasizes the differences between citizen's power and wealth. In these societies equality and opportunity for everyone is stressed.

Individualism (IDV) focuses on the degree the society reinforces individual or collective achievement and interpersonal relationships. A High Individualism ranking indicates that individuality and individual rights are paramount within the society. Individuals in these societies may tend to form a larger number of looser relationships. A Low Individualism ranking typifies societies of a more collectivist nature with close ties between individuals. These cultures reinforce extended families and collectives where everyone takes responsibility for fellow members of their group.

Masculinity (MAS) focuses on the degree the society reinforces, or does not reinforce, the traditional masculine work role model of male achievement, control, and power. A High Masculinity ranking indicates the country experiences a high degree of gender differentiation. In these cultures, males dominate a significant portion of the society and power structure, with females being controlled by male domination. A Low Masculinity ranking indicates the country has a low level of differentiation and discrimination between genders. In these cultures, females are treated equally to males in all aspects of the society.

Uncertainty Avoidance Index (UAI) focuses on the level of tolerance for uncertainty and ambiguity within the society - i.e. unstructured situations. A High Uncertainty Avoidance ranking indicates the country has a low tolerance for uncertainty and ambiguity. This creates a rule-oriented society that institutes laws, rules, regulations, and controls in order to reduce the amount of uncertainty. A Low Uncertainty Avoidance ranking indicates the country has less concern about ambiguity and uncertainty and has more tolerance for a variety of opinions. This is reflected in a society that is less rule-oriented, more readily accepts change, and takes more and greater risks.

Long-Term Orientation (LTO) explains us the extent to which a society exhibits a pragmatic future oriented perspective rather than a conventional historic or short term point of view. Countries scoring high on this dimension are the Asian countries. These countries believe in many truths, have a long term orientation, easily accept change and have thrift for investment. Cultures scoring low on this dimension believe in absolute

truth, are conventional and traditional, have a short term orientation and a concern for stability. Most Western countries score fairly low on this dimension.