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The Effects of Foreign Acquisitions on the Value of Industry Peers

Umit Yilmaz
Georgetown University McDonough School of Business and Ozyegin University Faculty of Business
uy7@georgetown.edu

Abstract

This article studies how industry peers' stock prices respond when another firm in the industry is acquired by a foreign firm. The average stock price reactions of industry peers in horizontal foreign acquisitions around deal announcements are significantly negative. Peers' returns are more negative in growing, less specialized, and competitive industries. Moreover, the negative stock price reactions of industry peers are related to future decreases in their operating performance. Overall, these results suggest that foreign acquisitions have strong competitive effects for the industry peers of U.S. target companies.

I. Introduction

The United States has been one of the world's largest recipients of foreign direct investment (FDI) in recent decades.[1] Cross-border acquisitions have been the main driving force behind the increase in FDI, and have accounted for a sizable portion of total U.S. takeover activity (UNCTAD (2021)).

Several studies investigate the valuation consequences of cross-border takeovers for the bidder, the target, and the combined entity (see, e.g., Harris and Ravenscraft (1991), Morck and Yeung (1992), Eun, Kolodny, and Scheraga (1996), Eckbo and Thorburn (2000), Bris and Cabolis (2008), Ferreira, Massa, and Matos (2009), Chari, Ouimet, and Tesar (2010), and Frésard, Hege, and Phillips (2017)). The evidence mainly suggests that stock price reactions around acquisition announcements are positive and significant for the target and the combined entity, and marginally positive or negative for the bidder. These wealth gains typically arise due to synergy and efficiency gains, as well as revenue enhancement through increased market share. Whereas foreign takeovers are important events for the firms involved, they also have significant effects on peer firms by reshaping industry structures

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[1]According to estimates by the United Nations Conference on Trade and Development (UNCTAD), FDI in the United States peaked in 2015, reaching $468 billion. Note that FDI includes green-field investment in new assets in a foreign country and the purchase of preexisting foreign assets.

and boundaries and by rebalancing the relative bargaining power within industries.[2] The objective of this article is to provide novel insights into the competitive effects of foreign acquisitions on industry peers in the United States. To do so, I follow a long tradition in the literature that begins with Eckbo (1983) and Stillman (1983), and I rely on changes in peers' stock prices to measure the adjustments in industries' competitive forces that stock market investors anticipate when foreign deals are announced.[3]

The literature has proposed three theories to describe the stock price response of industry peers around takeovers. The "anticipation" theory focuses on investors' anticipation of future takeovers in the industry (e.g., Song and Walkling (2000)). If observing a takeover increases the probability of observing another takeover in the same industry in the short term, this should affect peers' stock prices. The "collusion" theory posits that the disappearance of a rival reinforces the bargaining power of the remaining competitors vis-à-vis suppliers and clients, which should facilitate collusion among them (e.g., Eckbo (1983)). Finally, the "competition" theory posits that takeovers improve the efficiency of target companies, which could result in more intense industry competition (e.g., Eckbo (1983)). The collusion and anticipation theories predict positive peers' stock price reactions around takeover announcements, while the competition theory's predictions are negative. By and large, the literature focuses predominantly on domestic acquisitions and documents positive peers' stock price reactions around acquisition announcements (see, e.g., Eckbo (1983), Stillman (1983), Song and Walkling (2000), Fee and Thomas (2004), Shahrur (2005), DeBodt and Roll (2014), Servaes and Tamayo (2014), Bernile and Lyandres (2019), and Fathollahi, Harford, and Klasa (2022)).

Compared to domestic acquisitions, foreign takeovers have different impacts on industry dynamics and competitive balance. Several studies provide evidence that domestic acquisitions are associated with an increase in industry concentration and average markups (e.g., Blonigen and Pierce (2016), Grullon, Larkin, and Michaely (2019)). Thus, it appears that domestic acquisitions are associated with lower competition within an industry. However, it is unclear whether foreign takeovers should have a similar effect on industry competitiveness. Foreign acquisitions could intensify the competitive landscape by creating stronger competitors. In particular, foreign takeovers allow the combined company to have access to larger product markets and the opportunity to realize synergies (e.g., Yeaple (2003), Di Giovanni (2005), and Alquist et al. (2016)), which will weaken the future prospects of industry rivals. FDI theories suggest that foreign firms need to possess certain competitive advantage to deal with the difficulties of entering and operating in a different business environment and culture, as well as managing operations in

[2]For instance, foreign takeovers can lead to a redistribution of innovative assets and labor (e.g., Phillips and Zhdanov (2012), Bena and Li (2014), and Tate and Yang (2016)) and alleviate financing constraints of target firms (Erel, Jang, and Weisbach (2015)), Alquist, Mukherjee, and Tesar (2016)), and thereby affect targets' competitors.

[3]For instance, Daimler-Benz's acquisition bid to acquire Chrysler for about $35 billion on May 7, 1998, was expected to strengthen Chrysler's competitiveness by allowing the company to access German engineering prowess. Upon news of the proposed acquisition, the stock price of Chrysler increased sharply by 9.6%, whereas the stock price of General Motors declined by 2.4% and of Ford by 0.3%.

different geographic areas (e.g., Caves (1971), Hymer (1976)). Because these firms tend, by necessity, to be strong competitors in their industries, the firms they acquire benefit from that strength and gain advantage over their rivals. Moreover, some micro-evidence shows that multinational firms tend to transfer technology and management practices to their overseas affiliates (e.g., Branstetter, Fisman, and Foley (2006), Bloom, Sadun, and Van Reenen (2012), and Guadalupe, Kuzmina, and Thomas (2012)). Many of the technology, marketing characteristics, and industry specializations that have been internalized by the foreign acquirer are incorporated into goods produced by target firms (e.g., Caves (1971), Hymer (1976), and Frésard et al. (2017)). Consequently, merging firms become stronger competitors with production on a global scale and greater access to capital, technology, and know-how, which can in turn disturb the competitive balance and depress industry peers' profits. In the end, if these competitive effects dominate, the stock price reactions of industry peers should be negative on average around announcements of foreign acquisitions.

I employ a large sample of 1,588 horizontal cross-border acquisition transactions (i.e., transactions that involve firms in the same 4-digit SIC industries) from 1990 to 2020. The sample includes all economically relevant foreign acquisition transactions of U.S. private and public target firms (deals above $10 million). I observe changes in stock prices for 5,465 distinct publicly listed peers, which amount to 123,686 unique stock price reactions around deal announcements. Using an event-study methodology, I find that peers' stock prices respond negatively when a horizontal cross-border deal is announced in their industry. Over the 10-day period surrounding the announcement date, the average peers' cumulative abnormal return (CAR) is −0.95% and the median is −0.69%, and both are statistically significant. The negative stock price reaction of peers is pervasive and occurs for more than 54% of the deals in the sample. It is also highly robust and economically large, and holds with different event windows across different subsamples and years. Aggregated across all deals in the sample, the total change in peers' stock market capitalization induced by foreign transactions amounts to $1.26 trillion (in 2015 dollars).

The negative wealth effect experienced by industry peers around horizontal foreign deals is consistent with the long-standing idea that acquisitions generate stronger competitors (e.g., Bradley, Desai, and Kim (1983)). Under the competition hypothesis, the strategic combination of assets between two firms operating in different countries allows merging firms to realize synergies along various dimensions (e.g., through productivity gains, realization of technological complementarities and economies of scale, access to financing, or cost savings).[4] The newly created entity can thus expand its market share in a way that weakens the prospects of its product market rivals, such as through predatory pricing, the scaling of technology, or extending its industry specialization. Overall, the average negative stock market reactions observed for industry peers in the sample support this hypothesis.

To gain more insights into whether the negative wealth effect for peers is consistent with the competition hypothesis, I analyze how the stock price reactions

[4]See Betton, Eckbo, and Thorburn (2008) for the various sources of synergy gains in acquisitions.

of peers vary with their characteristics, as well as with the acquirer and industry specificities. I provide a collection of results that, overall, support this hypothesis. First, I show that across all deals, peers' CARs are more negative (ranging between −0.54% and −0.66%) for the group of peers that exhibit MTB ratios that are above the median of their industry–year. Thus, investors anticipate that foreign acquisitions are significantly more detrimental to peers with higher growth potential. Remarkably, these results hold under various types of demanding fixed-effects structures. For example, they hold when I compare market reactions across peers in a given industry (using industry–year fixed effects) or for a given deal (using deal fixed effects). They also hold when I include peer fixed effects, which indicates that market reactions for a given firm vary as firms' growth profiles change over time. Second, peers' CARs are more negative for smaller firms, but statistical significance is lower compared with the differential market reactions observed for firms with high MTB ratios. Third, focusing on transactions with publicly listed acquirers for which I have financial information, I find that foreign acquisitions generate more negative stock price reactions for industry peers when acquirers are larger. This evidence suggests that negative competitive effects for peer firms are more pronounced when the acquirer has access to more financial resources or to a larger market. Fourth, by exploiting variation in industry characteristics, I find that the value loss of high-growth peers around cross-border acquisitions is on average larger in growth-intensive industries, such as those with large R&D spending or high-technology industries.

Next, I investigate whether peers' CARs vary with differences in industry specialization between acquiring and target firms. Frésard et al. (2017) show that acquirers from more specialized industries are more likely to purchase foreign targets that are less specialized in the same industries, through which acquirers can deploy mobile intangible advantages (e.g., know-how or management skills) overseas (e.g., Caves (1971), Hymer (1976), and Morck and Yeung (1992)). Importantly, they also document that both acquirers' and targets' wealth gains are higher when differences in industry specialization are large. I find that differences in industry specialization between acquirers and target firms are negatively related to peers' abnormal returns. This evidence lends further support to the competitive effects that are more harmful for firms operating in less specialized industries, since these firms are more likely to lose their competitive edge.

In the last part of the article, I perform several tests to explore whether anticipation or collusion effects could explain the variation in peers' CARs compared to competitive effects. First, I analyze the joint dynamics of horizontal foreign and domestic acquisitions to assess whether the timing of foreign deals is informative about future acquisitions (i.e., whether foreign takeovers affect investors' anticipation that peers will be acquired in the near future). I find that the intensity of foreign acquisitions in a given quarter (in number and dollars) does not predict higher or lower future foreign or domestic acquisitions. In addition, I document that peers' CARs are unrelated to the likelihood of peers' becoming takeover targets within a year from the current deal. These findings suggest that the anticipation effect is unlikely to explain the variation in the stock price reactions of industry peers around foreign takeovers.

Second, I analyze the consequences of foreign transactions for peers' future real and financial outcomes. The competition view predicts that peers' value losses around foreign transactions arise because their competitive position weakens relative to the merging firms. This weakening should manifest itself in a deterioration of the prospects of peers' fundamentals in the years following the transaction. In line with this argument, I document that in the years following the deal, the sales growth, return on assets, and MTB ratio of peers that exhibit negative CARs are significantly lower than those of peers that react positively to the deal announcement. Third, I investigate whether peers' CARs are related to the competitive structure of their industries (e.g., Song and Walkling (2000)). I use three proxies to capture competitive forces (e.g., industry concentration or average markups), and find that peers' CARs are more negative around acquisitions that occur in highly competitive industries. Fourth, I explore how peers' abnormal returns are correlated with those of target firms. If a synergy-driven foreign transaction results in a stronger competitor, the announcement returns of industry peers should be negatively related to those of targets. I find that this is indeed the case, which is consistent with the competition channel.

Finally, I analyze peers' stock price reactions around announcements of deal withdrawals. If the observed initial peers' CARs reflect the competitive implications of the transactions, we should observe significant and opposite stock price reactions around withdrawals (e.g., Malmendier, Opp, and Saidi (2016)). Consistent with this argument, I find that peers' CARs are on average positive and significant around the announcement date of deal withdrawals. Taken together, the results suggest that perceived changes in competitive balance dominate any signals of favorable industry conditions conveyed through cross-border acquisitions.

This article contributes to the literature in several ways. First, it adds to the literature that studies the valuation effects of acquisitions on rivals, customers, and suppliers (see, e.g., Eckbo (1983), Stillman (1983), Akhigbe and Martin (2000), Song and Walkling (2000), Fee and Thomas (2004), Shahrur (2005), DeBodt and Roll (2014), Servaes and Tamayo (2014), Bernile and Lyandres (2019), Fathollahi et al. (2022), and Derrien, Frésard, Slabik, and Valta (2023)). Despite ample evidence on the intra-industry valuation effects of domestic acquisitions, there is scant evidence on the intra-industry wealth effects of cross-border takeovers. This work contributes to this literature by examining how industry peers' stock prices respond around horizontal foreign acquisitions.[5] While this literature documents positive peers' CARs around domestic M&As, I show that average peers' CARs are robustly negative in horizontal cross-border deals.[6] My findings advance the literature by shedding new light on wealth transfers and capital reallocations around foreign takeovers within industries.

[5]Akhigbe and Martin (2000) study the effects of foreign acquisitions using a small sample of 165 (horizontal and non-horizontal) deals announced between 1984 and 1996 and document a positive stock price reaction of rivals around foreign acquisition announcements. However, their article differs to varying degrees from this study in the sample period, the way they select foreign deals, the identification of peer firms, and the way they calculate returns.

[6]Recently, Derrien et al. (2023) show that the stock price reactions of industry peers around horizontal domestic acquisitions are positive when targets are public, in line with findings in the literature, but negative when they are private because acquiring managers favor private targets when public firms are overvalued.

Second, this study provides the first large-scale evidence on the competitive effects of foreign takeovers in the United States. Mounting evidence demonstrates that the competitive structure of industries in the United States has changed considerably in recent decades. In particular, industries are becoming significantly more concentrated (e.g., Grullon et al. (2019)) and increasingly, a few firms enjoy dominant positions (e.g., Autor, Dorn, Katz, Patterson, and Van Reenen (2020), De Loecker, Eeckhout, and Unger (2020)). Since these structural changes partly occur through M&As (e.g., Blonigen and Pierce (2016)), my findings provide valuable insights into the competitive role and implications of foreign takeovers. The evidence suggests that acquisitions by foreign companies have an impact on the industry landscape that significantly differs from that of domestic acquisitions. Furthermore, my results shed light on the motivations for FDI in the United States, as well as on theories arguing that FDI can either benefit or adversely affect competitors.

The remainder of the article is organized as follows: Section II develops testable hypotheses. Section III describes the data, sample, and variables. Section IV presents the main results. Section V explores economic mechanisms, and Section VI concludes.

II. Hypothesis Development

Several non-mutually exclusive phenomena can affect the value of peers when a foreign acquisition is announced and, in turn, their stock price reaction. In particular, any acquisition changes the structure of the industry and can affect competition. The first possible effect is an "anticipation" effect, which suggests that a foreign acquisition might convey information about the likelihood of further takeover activity in the industry in the near future (e.g., Song and Walkling (2000)). Under this hypothesis, peers' stock prices could rise on an acquisition announcement if the stock market infers that industry participants are undervalued or that peers could realize efficiency gains through future acquisitions of their own.[7]

The literature has also proposed a "collusion" effect to explain peers' stock price reactions around acquisitions (e.g., Eckbo (1983)). When a competitor is acquired, the number of firms declines in the takeover industry, which reinforces the bargaining power of the remaining firms vis-à-vis customers and suppliers, and thereby facilitates collusion among them. If this effect dominates, the stock price reactions of peers should be positive on average around acquisition announcements. However, the prospect of collusion is extremely low in cross-border takeovers, because a foreign acquisition leaves the number of firms unchanged through the replacement of a target with a foreign acquirer or a combined entity. Therefore, there are a priori fewer reasons to expect that foreign acquisitions will generate results consistent with collusion.

[7]Two conditions are essential for the anticipation effect to hold. First, that the acquisition of a firm increases the probability of its peers to be acquired in the near future, because acquisitions typically occur in waves (e.g., Harford (2005)). And second, that these acquisitions lead to an increase in the value of targets because they are acquired at a premium.

Also, a "competitive" effect suggests that acquisitions might improve the efficiency of the target, which in turn could strengthen the competitive position of the combined company and weaken that of its rivals (e.g., Eckbo (1983)). Foreign acquisitions allow merging firms to have access to larger product markets and to realize synergies (e.g., Yeaple (2003), Di Giovanni (2005), and Alquist et al. (2016)), which have the potential to undermine the future prospects of product market rivals. Thus the emergence of a more-efficient combined firm following a foreign acquisition may result in more intense industry competition, and thereby trigger a negative stock price effect for rivals at the time of acquisition announcements. Several studies provide evidence on the beneficial effects of foreign ownership on firm efficiency, productivity, technological achievements, corporate governance, value creation, and liquidity provision (see, among others, Harris and Ravenscraft (1991), Doms and Jensen (1998), Aitken and Harrison (1999), Ferreira and Matos (2008), Arnold and Javorcik (2009), Aggarwal, Erel, Ferreira, and Matos (2011), Chen (2011), Chari, Chen, and Dominguez (2012), and Alquist et al. (2016)). Moreover, FDI theories suggest that firms need to have substantial competitive advantage to more than offset the inherent disadvantage of operating abroad, including managing geographically dispersed operations and conducting business in unfamiliar cultures and environments (e.g., Caves (1971), Hymer (1976)). Relatedly, Neary (2007) points out that firms with a cost advantage are more likely to acquire assets in markets with a comparative cost disadvantage. Additionally, Nocke and Yeaple (2007) find that foreign takeovers are driven by firms' desire to utilize the country-specific capabilities of the acquired firm. Thus, advantages that are exploited through FDI (e.g., economies of scale and scope, managerial talent, or technological expertise) give the merging firms a competitive advantage over their rivals, which reduces their valuations.

Furthermore, several studies provide evidence that multinational firms transfer technology and management practices to their foreign affiliates (e.g., Branstetter et al. (2006), Bloom and Van Reenen (2010), and Guadalupe et al. (2012)). Thus, the industry specialization and many of the technological and marketing characteristics that have been internalized by the foreign bidders are incorporated into goods produced by the target (see, e.g., Caves (1971), Hymer (1976), and Frésard et al. (2017)). Thus, the merging firms gain a competitive advantage over domestic competitors, since world-scale production allows the new entity to reduce its prices. Additionally, Aitken and Harrison (1999) argue that foreign multinationals have lower marginal costs due to some firm-specific advantages, which enables them to attract demand away from their competitors. Thus, foreign firms have the potential to undercut domestic producers on both price and quality, and thereby have an adverse impact on their wealth.

The preceding discussions suggest that foreign acquisitions have a significant effect on the value of industry peers. The first hypothesis to be tested is:

Hypothesis 1. The impact of foreign acquisitions on the value of industry peers is significantly negative if the competitive effects dominate anticipation and/or collusion effects.

Previous research documents that foreign acquisitions are more frequent in growth-intensive industries than domestic acquisitions (see, e.g., Harris and Ravenscraft (1991), Yeaple (2003)). Foreign acquisitions can reduce frictions that affect the ability of target firms to invest and to realize their growth opportunities (see, e.g., Erel et al. (2015), Alquist et al. (2016)). For example, small firms are known to be subject to financial constraints, which can limit their investment in physical assets or R&D. This phenomenon is more pronounced for firms in growth industries, in which both investment needs and uncertainty about the success of investments are more pronounced than in established industries. In growth industries, the acquisition of one of many rivals that suffers from financing constraints may alleviate the constraints for the firm in question and reinforce its ability to develop at the expense of its peers. Thus, I predict that growing firms should be more vulnerable to the acquisition of one of their industry rivals, and in particular in growing industries, in which firms compete to fund their high investment needs and establish their market shares and technology. This discussion leads to the following hypothesis:

Hypothesis 2. The impact of foreign acquisitions on the value of industry peers is stronger in growth-intensive industries.

My last hypothesis concentrates on the value effect of differences in industry specialization between foreign acquirers and peer firms. The internalization theory suggests that the economic value associated with foreign takeovers increases with the ability of an acquirer to deploy mobile intangible advantages on foreign assets (see, e.g., Caves (1971), Hymer (1976), and Frésard et al. (2017)). Thus, foreign acquirers from more specialized industries are more likely to weaken the competitive positions of industry rivals and strengthen that of the target by improving its productivity. This suggests that acquisitions are much more detrimental to industry peers when a foreign acquirer is from a more specialized industry. On this ground, I postulate the following hypothesis:

Hypothesis 3. The stock market reactions of industry peers increase with differences in industry specialization between acquirer and peer firms.

III. Data, Sample, and Variables

A. Data Sources and Sample Construction

I obtain data on cross-border M&A transactions in the United States from Thomson's Security Data Corporation's (SDC) Merger and Corporate Transactions database. The sample includes all foreign deals (public and private) announced between 1990 and 2020 and completed by the end of 2020. I only keep deals in which the acquirer takes formal control of the target (i.e., deals in which the acquirer owns more than 50% of the target's shares after the transaction). I exclude all transactions in the financial or utility industries and transactions in which the target or the acquirer is a government agency. Similar to Netter, Stegemoller, and Wintoki (2011) and Erel, Liao, and Weisbach (2012), I exclude leveraged buyouts (LBOs),

spinoffs, recapitalizations, self-tender offers, exchange offers, repurchases, partial equity stakes, acquisitions of remaining interest, privatizations, and buybacks.[8] Since the article examines how cross-border transactions are related to industry competition, I focus on horizontal deals, which I define as deals that occur between firms in the same 4-digit SIC industry.[9] In addition, since I need transactions that have potential effects on industry-level characteristics, I only keep foreign deals with a transaction value of at least $10 million. Moreover, I exclude deals that occur in industries with fewer than three public firms to ensure that some competition remains in the industry after the transaction. The final sample includes 1,588 transactions from 47 countries. Appendix Table A.1 describes the selection procedure.

Table 1 presents information by country of origin on the number and value of acquisitions of U.S. firms. The top six foreign countries whose firms acquired U.S. targets over the period 1990–2020 are Canada, the United Kingdom, Australia, France, Germany, and Japan.

Figure 1 shows the number and total value (in billions of dollars) of cross-border transactions into the United States by foreign firms over the years 1990–2020. We observe increased foreign acquisitions in 1997–2000, in 2004–2007 (the period preceding the financial crisis), and in 2014–2016, in both the number and value of deals.

Next, I identify peer firms (i.e., firms that operate in the same industry as the target firm). To do so, for each deal, I obtain the 4-digit SIC code of the target from SDC. I consider industry peers to be all firms that are active in the CRSP database when the cross-border deal is announced and that have the same 4-digit SIC code as the target. I exclude stocks that are not actively traded (i.e., stocks with fewer than 100 return observations in the estimation period (251 days to 21 days before the deal announcement)) and stocks with missing returns between 5 days before and 5 days after the transaction. Applying these filters yields a sample of 5,465 unique peers and 123,686 deal-peer observations. For industry peers and target firms, I obtain daily stock prices and values of the value-weighted market index from the CRSP. I complement this data set with the size (SMB), value (HML), and momentum (MOM) factors from Kenneth French's website. I also add peer-level accounting data from Compustat and acquirer-level accounting data from Worldscope.

In subsequent tests, I employ variables that capture the characteristics of the deal, the peers, and the publicly listed acquirers involved in the transaction. All of these variables are defined in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. I present summary statistics of the main variables at the deal level in Table 2.

The summary statistics are in line with the previous literature. The public target dummy, which equals 1 when the target is public and 0 otherwise, is 18.2%. The public acquirer dummy, which equals 1 when the acquirer is public and 0 otherwise,

[8]I also drop transactions from countries that are considered to be tax havens (as defined by the OECD (2008)): the Bahamas, Bermuda, British Virgin Islands (United Kingdom), Cayman Islands, Cook Islands, Cyprus, Isle of Man, Jersey, Liechtenstein, Marshall Islands, Mauritius, Netherlands Antilles, Panama, and U.S. Virgin Islands.

[9]Previous studies provide evidence that horizontal takeovers generate more operating synergies than diversifying mergers (see, e.g., Maksimovic and Phillips (2001)).

TABLE 1

Number and Value of Horizontal Acquisitions of U.S. Targets by Foreign Firms over the Period 1990–2020

Table 1 provides a breakdown of transactions by the acquirer country. The first column lists the name of the acquirer country. The second column presents the number of transactions. The third column shows the fraction of total transactions accounted for by the acquirer country. The fourth column presents the total nominal transaction value in millions of USD. The final column shows the average nominal transaction value in millions of USD by the acquirer country.

Acquirer Country	No. of Transactions	Percentage of Total Transactions	Nominal Transaction Value	Average Transaction Value
Canada	398	25.06	143,009.86	359.32
United Kingdom	347	21.85	271,180.22	781.50
Australia	83	5.23	15,805.90	190.43
France	83	5.23	84,207.27	1,014.55
Germany	62	3.90	101,086.87	1,630.43
Japan	62	3.90	34,640.38	558.72
Israel	54	3.40	72,949.45	1,350.92
Switzerland	53	3.34	29,028.93	547.72
Republic of Ireland	51	3.21	70,550.78	1,383.35
Sweden	42	2.64	14,355.73	341.80
Netherlands	41	2.58	36,538.51	891.18
India	37	2.33	4,408.35	119.14
China	25	1.57	9,882.74	395.31
Belgium	24	1.51	72,287.40	3,011.97
Spain	24	1.51	17,495.87	728.99
Italy	21	1.32	17,561.05	836.24
Hong Kong	18	1.13	5,879.32	326.63
South Korea	17	1.07	11,721.75	689.51
Mexico	16	1.01	15,378.77	961.17
Norway	16	1.01	11,605.71	725.36
Denmark	14	0.88	4,529.51	323.54
Singapore	13	0.82	5,489.96	422.30
Luxembourg	12	0.76	11,036.91	919.74
Taiwan	11	0.69	1,685.60	153.24
Brazil	10	0.63	4,154.12	415.41
Finland	6	0.38	445.33	74.22
Iceland	6	0.38	1,787.53	297.92
South Africa	6	0.38	399.95	66.66
Malaysia	4	0.25	962.07	240.52
New Zealand	4	0.25	630.79	157.70
Argentina	3	0.19	1,991.67	663.89
Austria	3	0.19	175.70	58.57
Qatar	3	0.19	877.50	292.50
Russian Federation	3	0.19	1,458.48	486.16
Chile	2	0.13	527.00	263.50
Greece	2	0.13	28.50	14.25
Thailand	2	0.13	438.00	219.00
Belarus	1	0.06	20.00	20.00
Colombia	1	0.06	760.00	760.00
Costa Rica	1	0.06	11.00	11.00
Croatia	1	0.06	211.90	211.90
Egypt	1	0.06	59.90	59.90
Hungary	1	0.06	40.00	40.00
Indonesia	1	0.06	18.00	18.00
Poland	1	0.06	188.02	188.02
Portugal	1	0.06	33.70	33.70
Romania	1	0.06	65.30	65.30
Total	1,588	100.00	1,077,601.30	23,321.19

is 80.9%. Thus, transactions with private targets and public acquirers clearly dominate the sample.

B. Peers' Announcement Returns

The main variable of interest is the stock price reaction of industry peers when a foreign acquisition is announced. I compute abnormal returns for industry peers over the 2 days (−1 to +1), 6 days (−3 to +3), and 10 days (−5 to +5) around the

FIGURE 1

Foreign Acquisitions over the Years 1990–2020

Figure 1 displays the number (left axis) and total deal value (right axis, in billions of dollars) of horizontal foreign acquisitions of U.S. target firms over the years 1990–2020. Data on foreign acquisitions announcements are retrieved from Thomson One Banker.

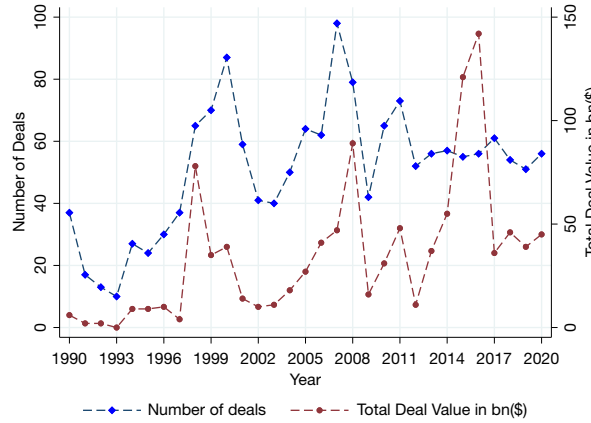


TABLE 2

Sample Summary Statistics

Table 2 presents summary statistics of the main variables used in the test. The peers' characteristics are averaged at the deal level. All the variables are defined in Appendix B. The sample includes all cross-border M&A deals announced and completed between 1990 and 2020.

Variable	No. of Obs.	Mean	Median	Std. Dev.	p10	p90
log(NUMBER_OF_DEALS)	1,588	1.483	1.340	0.728	0.693	2.485
log(VALUE_OF_DEALS)	1,588	10.318	10.516	0.845	9.231	11.363
log(TRANSACTION_VALUE)	1,588	4.629	4.314	1.673	2.708	7.137
PUBLIC_ACQUIRER	1,588	0.809	1.000	0.394	0.000	1.000
PUBLIC_TARGET	1,588	0.182	0.000	0.386	0.000	1.000
Peer characteristics						
log(TOTAL_ASSETS)	1,588	5.950	5.827	1.212	4.431	7.568
MTB_RATIO	1,588	1.747	1.572	0.978	0.630	3.192
CASH_TO_ASSET_RATIO	1,588	0.231	0.199	0.161	0.052	0.498
LEVERAGE	1,588	0.232	0.216	0.112	0.101	0.381
Public acquirer characteristics						
log(TOTAL_ASSETS)	1,038	6.944	6.792	1.994	4.487	9.634
MTB_RATIO	1,038	1.936	1.197	2.604	0.459	3.642
CASH_TO_ASSET_RATIO	1,038	6.359	0.115	77.865	0.022	2.132
LEVERAGE	1,038	2.211	0.211	8.071	0.002	2.135

announcement of each foreign transaction in their (4-digit SIC code) industry. Abnormal returns are the difference between realized and expected returns, computed with a 4-factor model that includes market, SMB, HML, and MOM factors. The estimation period spans from 251 days to 21 days before the deal announcement. I winsorize abnormal returns at the 1st and 99th percentiles to avoid problems with outliers, and cumulate abnormal returns over the relevant window to obtain CARs.

Table 3 presents summary statistics for the stock price reactions of peer firms around acquisition announcements for all deals in Panel A, deals with public targets in Panel B, and deals with private targets in Panel C. Each panel reports results for

TABLE 3
Peers' CARs

Table 3 presents cumulative abnormal returns (CARs, in %) of industry peers (based on 4-digit SIC codes) around the announcement date of a horizontal foreign transaction in their industry. The sample includes all cross-border M&A deals announced and completed between 1990 and 2020. The table shows three measures of peers' CARs. The measures vary in the length of the window over which the stock price reaction is calculated (announcement date −1 day to +1 day, announcement date −3 days to +3 days, or announcement date −5 days to +5 days). I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. Each measure is presented separately for all industry peers (i.e., at the peer-deal level) and for equal-weighted portfolios including all industry peers for each deal. Panel A presents the statistics for all deals. Panel B presents the statistics for deals in which the target is public. Panel C presents the statistics for deals in which the target is privately held. The means at the peer-deal (deal) level is the estimate of the constant from a regression with no explanatory variables, and significance is calculated by clustering standard errors at the deal (4-digit SIC industry) level. The significance of medians is obtained with a sign test. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

CARs	Unit of Obs.	No. of Obs.	Mean	Median	Std. Dev.	p10	p90
Panel A. CARs for Peers of Full Sample							
CAR(−1, 1)	Peer-deal	123,686	−0.236***	−0.273***	5.847	−6.808	6.306
	Deal	1,588	−0.117***	−0.118***	1.532	−1.787	1.508
CAR(−3, 3)	Peer-deal	123,686	−0.570***	−0.522***	8.755	−10.623	9.322
	Deal	1,588	−0.339***	−0.279***	2.393	−2.973	2.231
CAR(−5, 5)	Peer-deal	123,686	−0.952***	−0.688***	11.048	−13.804	11.490
	Deal	1,588	−0.626***	−0.474***	3.257	−4.143	2.831
Panel B. CARs for Peers of Public Targets							
CAR(−1, 1)	Peer-deal	25,237	−0.215**	−0.246***	5.735	−6.697	6.281
	Deal	289	−0.128*	−0.211*	1.713	−1.953	1.834
CAR(−3, 3)	Peer-deal	25,237	−0.475***	−0.450***	8.707	−10.683	9.544
	Deal	289	−0.427***	−0.407***	2.523	−3.075	2.410
CAR(−5, 5)	Peer-deal	25,237	−0.861***	−0.631***	10.896	−13.727	11.739
	Deal	289	−0.839***	−0.764***	3.292	−4.475	2.543
Panel C. CARs for Peers of Privately Held Targets							
CAR(−1, 1)	Peer-deal	98,449	−0.242***	−0.280***	5.876	−6.832	6.315
	Deal	1,299	−0.114***	−0.109***	1.489	−1.761	1.448
CAR(−3, 3)	Peer-deal	98,449	−0.594***	−0.539***	8.767	−10.608	9.270
	Deal	1,299	−0.320***	−0.248***	2.363	−2.952	2.197
CAR(−5, 5)	Peer-deal	98,449	−0.976***	−0.703***	11.087	−13.824	11.424
	Deal	1,299	−0.579***	−0.448***	3.248	−4.126	2.881

the three window sizes (−1 to +1 days, −3 to +3 days, and −5 to +5 days). For each window size, I report two sets of results: One in which the unit of observation is each peer in each cross-border transaction (peer-deal level) and one with equal-weighted portfolios that contain all peers of each target firm, in which the unit of observation is thus the cross-border transaction (deal level). The literature typically uses the portfolio method, because it eliminates concern regarding correlations across peer returns at the deal level. I also consider individual peer returns, since the goal is to explore the determinants of individual peer's stock price reaction, and especially the cross-sectional variation among peers of the same deal. To account for possible correlations of peers' returns in this context, I obtain the mean peers' CARs and the associated standard errors by running OLS regressions of peers' CARs on a constant term and clustering standard errors at the deal level. For all returns, I also report medians and estimate their statistical significance using a sign test.

Panel A of Table 3 shows that peers' stock price reactions are negative and significantly different from 0 on average for individual peers and for peers' portfolios in the full sample. This conclusion holds across the three windows, while the magnitude of the CARs tends to increase with the length of the time window, with

the mean varying from −0.117% to −0.952% and the median from −0.118% to −0.688%. Panel A also shows that peers' CARs exhibit large standard deviations (between 6% and 11% for individual peers' returns and between 2% and 3% for portfolios). However, all average CARs and median CARs are negative and statistically significant at the 1% level. In addition, as shown in Panels B and C of Table 3, the observed negative peers' CARs are irrespective of the public status of the target firms.

The estimated CARs are large at the level of individual peer firms. When I estimate the aggregate value implications for all peers and for all foreign transactions, I obtain a total value of about −$1.26 trillion.[10] This corresponds to the value destroyed for industry peers by cross-border transactions. The goal of the subsequent tests is to explain this phenomenon.

Next, I use univariate tests as a first attempt to explain variations in peers' CARs. To do so, I split the sample by the public versus private status of targets and acquirers involved in the transactions, as well as by year to detect potential time trends in peers' returns.[11]

Panel A of Table 4 reports peers' CARs (at the peer-deal level and at the deal level) for several subgroups of observations. The first two lines provide statistics on peers' CARs in deals with public versus private acquirers. Both groups of deals are associated with negative average peers' CARs, irrespective of the measure I consider. Transactions in which the target company is private are also associated with negative peers' returns of similar magnitudes. Row 3 of the table focuses on the CARs in transactions with public acquirers and public targets. In these deals, the peers' reactions have a significantly negative mean (−0.68% at the peer-deal level and −0.71% at the deal (portfolio) level). Median CARs are also significantly negative at the peer-deal level and at the deal level. Other combinations of the public versus private status of acquirers and targets all lead to negative peers' CARs.

Panel B of Table 4 presents statistics on peers' CARs by year (at the peer-deal level) between 1990 and 2020. Overall, the sign of the average peers' CARs fluctuates over time, and is significantly negative in 13 years and positive but insignificant in 4 years, with no clear trend. The 2 years characterized by large negative average peers' CARs are 2000 (−4.77%) and 2018 (−2.06%). Median CARs provide a slightly more consistent picture, since most of them are significantly negative, while only 1 year exhibits significantly positive median CARs.

IV. The Determinants of Peers' CARs

A. Empirical Setting and Variables

The descriptive statistics in the previous section show that for many subsamples of foreign transactions, peers' returns are negative. In this section, I exploit the large cross-sectional variation in the sample to shed light on the mechanism

[10]I compute the aggregate value by multiplying the estimated CAR of each peer in each deal by its market capitalization (in 2015 U.S. dollars) and then taking the sum across all observations in the sample.

[11]In the subsequent analyses, I use the wider 10-day window around the announcement date; however, the results are robust to using different window size sets.

TABLE 4

Peers' CARs by Subsamples of Deals and by Year

Table 4 presents peers' CARs (in %) for different subsamples around the announcement date of a horizontal foreign transaction in their industry. The sample includes all cross-border M&A deals announced and completed between 1990 and 2020. Peers' CARs are calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. Each measure is presented separately for all industry peers (i.e., at the peer-deal level) and for equal-weighted portfolios including all industry peers for each deal. Panel A presents the statistics for different subsamples based on targets' and acquirers' public status. Panel B shows mean and median peers' CARs by year (the unit of observation is peer firms). The means at the peer-deal (deal) level is the estimate of the constant from a regression with no explanatory variables, and significance is calculated by clustering standard errors at the deal (4-digit SIC industry) level. The significance of medians is obtained with a sign test. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Peers' CARs (−5, 5) by Subsamples

Deal Char.	Unit of Obs.	No. of Obs.	Mean	Median	Std. Dev.	p10	p90
Public acquirer	Peer-deal	106,778	−0.958***	−0.682***	11.174	−13.985	11.643
	Deal	1,284	−0.671***	−0.532***	3.199	−4.204	2.791
Private acquirer	Peer-deal	17,069	−0.916***	−0.700***	10.188	−12.553	10.459
	Deal	304	−0.436**	−0.198*	3.489	−4.054	2.831
Public acquirer–public target	Peer-deal	21,516	−0.679***	−0.501***	10.990	−13.664	12.009
	Deal	248	−0.713***	−0.498***	3.235	−4.143	2.848
Public acquirer–private target	Peer-deal	85,262	−1.028***	−0.726***	11.219	−14.076	11.532
	Deal	1,036	−0.661***	−0.539***	3.192	−4.262	2.791
Private acquirer–public target	Peer-deal	3,749	−1.905***	−1.301***	10.250	−14.108	9.612
	Deal	41	−1.600***	−1.482***	3.567	−4.493	1.598
Private acquirer–private target	Peer-deal	13,320	−0.637**	−0.532**	10.153	−12.084	10.759
	Deal	263	−0.255	−0.043	3.448	−3.966	2.902

Panel B. Peers' CARs (−5, 5) by Year

Year	No. of Obs.	No. of Deals	Mean	Median	Std. Dev.	p10	p90
1990	1,158	37	−1.256***	−1.116***	9.223	−12.261	9.162
1991	321	17	−0.356	−0.473	9.157	−11.087	9.861
1992	359	13	−1.424	−1.251***	11.040	−12.949	9.742
1993	519	10	−2.033	−1.708***	9.335	−13.000	8.037
1994	1,037	27	−0.691**	−0.582***	9.297	−11.128	9.940
1995	896	24	0.081	0.038	8.965	−10.504	9.970
1996	1,787	30	0.365	0.217	10.091	−11.675	12.009
1997	3,020	37	−0.708**	−1.126***	10.895	−13.373	12.758
1998	5,833	65	−0.813***	−0.881***	11.239	−13.987	12.737
1999	5,830	70	−1.309***	−1.287***	13.524	−17.711	14.907
2000	10,110	87	−4.765***	−4.084***	15.718	−24.659	14.234
2001	6,254	59	0.496	0.293*	14.874	−17.855	18.513
2002	3,364	41	−1.142**	−0.936***	12.248	−15.822	13.378
2003	3,648	40	−0.581	−0.667***	10.486	−12.677	11.504
2004	4,179	50	−0.721	−0.409**	9.553	−12.098	9.949
2005	6,343	64	−0.131	−0.291***	8.851	−10.178	10.013
2006	5,428	62	−0.307	−0.376***	8.416	−9.914	9.261
2007	8,046	98	−0.536**	−0.448***	8.671	−10.479	9.292
2008	6,216	79	−0.418	−0.226*	12.253	−15.698	13.850
2009	4,314	42	−1.384***	−1.394***	12.274	−15.746	12.970
2010	4,768	65	−1.050**	−0.820***	8.937	−11.597	8.946
2011	4,915	73	−0.405	−0.377**	9.022	−10.710	9.917
2012	3,918	52	−0.389	−0.516***	9.443	−10.648	9.977
2013	4,323	56	0.194	−0.133	8.371	−8.797	9.979
2014	4,870	57	−1.036*	−0.681***	9.141	−11.792	8.770
2015	4,550	55	−0.270	−0.297**	9.568	−10.811	10.349
2016	3,560	56	−0.550	−0.255**	9.284	−10.947	9.714
2017	4,258	61	−0.014	−0.112	8.777	−9.441	9.761
2018	3,622	54	−2.059***	−1.210***	9.510	−13.614	8.338
2019	2,870	51	−0.594	−0.273*	9.929	−12.299	10.477
2020	3,531	56	−1.611***	−1.435***	11.261	−14.687	11.288

through which cross-border acquisitions affect peers' CARs. To do so, I continue the exploration of the determinants of peers' CARs in a multivariate setting, asking which peer, acquirer, and deal characteristics affect peers' CARs. I employ three specifications that use different sets of fixed effects to absorb unobserved factors that are constant across groups of firms and may affect the value of listed firms when

the acquisition of one of their peers is announced. The first natural set of fixed effects I consider is at the level of the industry (4-digit SIC code) and the year. The competitive effects I analyze are likely to vary across industries and over time, and time variations are likely to differ across industries. Adding industry × year fixed effects allows me to control for differences between different industries over time. In these tests, the interpretation is within groups of firms in the same industry and the same year.

The next specification uses the same industry × year fixed effects and adds peer fixed effects. This allows me to absorb time-invariant firm-level characteristics that can explain the stock price reaction of a given firm in a series of transactions that involve peers of the firm in question. In these tests, the focus is on how variations in right-hand-side variables around their mean for the peer firm affect the stock price reactions of the peer firm.

Finally, I employ a third specification in which I use deal fixed effects. Unlike the previous specification, which allows me to analyze how time-series changes at the firm level explain changes in the firm's stock price reactions, this specification compares, for each deal, the CARs of all the peers of the acquired company as a function of their characteristics. The interpretation of these tests is how differences between peers explain variations in their CARs around the announcement of foreign acquisitions.

All tests include peer characteristics, which are the focus of the analysis. I consider four characteristics of peer firms: the MTB ratio, size (log of total assets), cash-to-assets ratio, and leverage, all calculated at the end of the year ending before the acquisition considered. Specifications that use industry × year fixed effects, and industry × year and peer fixed effects also include deal characteristics (these variables are absorbed by the fixed effects in the specification in which I use deal fixed effects): the logarithm of the number of cross-border deals in the same 4-digit SIC code as the target firm in the year preceding the acquisition and the logarithm of the total value of these deals. These two variables capture the intensity of the cross-border M&A market in the industry of the target firm in the year preceding the acquisition. I also control for the logarithm of the value of the transaction and include two indicator variables: The first variable captures the status of the target (public or private) and the second variable captures the status of the acquirer (public or private).

Finally, I run two separate regressions in which I add four variables that capture the characteristics of the acquiring company in specifications that use industry × year fixed effects and industry × year and peer fixed effects (again, these characteristics are absorbed by deal fixed effects in the corresponding specification). The reason I run separate regressions with these variables is that information on acquirers is missing whenever the acquirer is a private company. The four acquirer characteristics I consider are the same as for peer firms: the MTB ratio, size, cash-to-assets ratio, and leverage. Since information on the acquirer is available only when the acquirer is a publicly traded firm, the PUBLIC_ACQUIRER dummy variable disappears in these tests.

For peer and acquirer characteristics, I compute dummy variables whose values depend on whether the variable takes a high or low value relative to the median firm. For peer characteristics, I sort peers into above and below the median

for every deal. For acquirer characteristics, I sort acquirers into above and below the median within the same 4-digit SIC code at the end of the year preceding the acquisition. The reason for using dummy variables instead of continuous variables is that when I interact these variables in subsequent tables, they simplify the interpretation of the findings. Moreover, dummy variables are less subject to non-linearities that can influence the results. In all tests, I calculate standard errors using clustering at the 4-digit SIC code level, but the results are robust to using alternative clustering at the peer or deal level instead.

B. Results

Table 5 presents the results of the multivariate tests.

TABLE 5

Peers' CARs and Deal, Peer, and Acquirer Characteristics

Table 5 reports OLS regressions of peers' CARs (in %) on deal, peer, and acquirer characteristics for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. The five columns present regressions with different fixed-effect specifications. $I \times Y$ indicates industry × year fixed effects (in columns 1 and 4). Columns 2 and 5 include industry × year and peer fixed effects (indicated with an "P"). In column 3, regressions include deal fixed effects only. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
HIGH_MB_PEER	−0.649***	−0.648***	−0.660***	−0.606***	−0.541***
	(−3.28)	(−6.09)	(−3.26)	(−2.84)	(−3.83)
LARGE_SIZE_PEER	1.241***	−0.070	1.236***	1.267***	0.041
	(7.05)	(−0.43)	(7.16)	(6.14)	(0.29)
HIGH_CASH_PEER	−0.030	0.010	−0.034	−0.015	0.056
	(−0.37)	(0.13)	(−0.45)	(−0.12)	(0.47)
HIGH_LEVERAGE_PEER	−0.364**	−0.230	−0.364**	−0.306	−0.170
	(−2.36)	(−1.19)	(−2.35)	(−1.04)	(−0.56)
HIGH_MB_ACQUIRER				0.149	0.082
				(1.13)	(0.41)
LARGE_SIZE_ACQUIRER				−0.124*	−0.445***
				(−1.85)	(−4.03)
HIGH_CASH_ACQUIRER				−0.043	−0.041
				(−0.31)	(−0.27)
HIGH_LEVERAGE_ACQUIRER				0.079	−0.027
				(0.24)	(−0.08)
log(NUMBER_OF_DEALS)	0.191	0.181		−0.005	−0.459
	(1.53)	(1.45)		(−0.01)	(−0.89)
log(VALUE_OF_DEALS)	−0.242	−0.337		−0.163	−0.150
	(−0.93)	(−1.17)		(−0.38)	(−0.30)
log(TRANSACTION_VALUE)	−0.116**	−0.116**		−0.078	−0.114***
	(−2.23)	(−2.16)		(−1.54)	(−2.65)
PUBLIC_TARGET	0.434	0.438			
	(1.02)	(1.01)			
PUBLIC_ACQUIRER	0.364	0.369			
	(0.77)	(0.76)			
Fixed effects	$I \times Y$	$I \times Y$ and P	Deal	$I \times Y$	$I \times Y$ and P
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.027	0.036	0.051	0.029	0.036

The results are broadly consistent with the univariate analysis in the previous section.[12] PUBLIC_TARGET and PUBLIC_ACQUIRER dummies are both positive but statistically insignificant, which indicates that peers' CARs are unrelated to the public status of the target and acquirer firms. The coefficients on log(NUMBER_OF_DEALS) and log(VALUE_OF_DEALS) are both statistically insignificant, which suggests that peers' CARs do not appear to depend on the intensity of cross-border takeover activity in the industry in the year preceding the current transaction. One concern could be that average negative peers' CARs are driven mostly by small transactions. These transactions might matter less for aggregate value creation than large transactions, which typically involve public targets and public acquirers. We saw earlier that the aggregate value loss for peers is substantial over the entire sample period, which suggests that negative peers' returns are not concentrated in small firms and small transactions. In line with this view, the coefficient on log(TRANSACTION_VALUE) is consistently negative in all four specifications, and on average statistically significant. If anything, the effect of foreign acquisitions on the value of peers is more negative for larger deals.

Some acquirer characteristics also affect peers' stock price reactions. When the acquirer is larger, the peer's CAR is significantly more negative. This finding suggests that the negative valuation effects of foreign acquisitions on peer firms are more pronounced when the acquirer has access to more financial resources or to a larger market.

Turning to peer characteristics, the MTB ratio of the peer is an important determinant in its CAR. The effect of having a high MTB ratio relative to firms in the same industry and year is associated with a strong negative CAR. The effect is economically large (between −0.5% and −0.6%, depending on the specification) and statistically significant at the 1% level in all specifications. This suggests that the acquisition of a peer firm is much more detrimental to a firm with high growth opportunities. This evidence supports the argument that the competitive effects of foreign acquisitions are more negative for firms in the early stages of their life cycle. In these stages, firms are more likely to be financially constrained at a time when investing to realize growth options is crucial for their future development.[13] In addition, peers' CARs are, on average, more negative for smaller and highly leveraged peers, which suggests that financially constrained peers incur more negative competitive effects due to their limited ability to make investments to address competitive threats (e.g., Stulz (1990)).[14]

Next, I explore this possibility in greater detail by asking whether the phenomena shown in previous tests are stronger in industries characterized by greater growth opportunities. I use three industry-level measures of growth opportunities.

[12]In untabulated tests, I obtain similar results when I run the same tests but double-cluster standard errors at the 4-digit SIC industry level and at the announcement–year level.

[13]As shown in Appendix Table A.2, I reach similar conclusions when I use sales growth instead of MTB ratio to identify peers with high growth opportunities.

[14]Appendix Table A.3 shows that the main conclusions regarding peer and acquirer characteristics hold when I use continuous instead of binary variables. Also, as shown in Appendix Table A.4, the conclusions hold when I sort industry peers into four groups (quartiles) based on their characteristics and express all coefficients relative to the lower quartile (bottom 25%, q1).

First, I use the research and development intensity of the industry, measured by the average R&D level in Compustat in the 4-digit SIC code industry. Second, I use the classification proposed by the National Science Foundation to identify high-technology industries. Third, I measure the industry's growth opportunities using the average MTB ratio of firms in the industry. For all of these measures, except high- versus low-technology industries, I define high-growth-opportunity industries as those above the median. The R&D intensity and the MTB ratio are calculated every year, so that a given industry can move from the high-to the low-growth-opportunity category from 1 year to the next.

The results are reported in Table 6. In Panel A, the industry characteristic I consider is the industry-level R&D. In Panel B, I compare high- and low-tech industries. In Panel C, the measure of industry-level growth is industry-level MTB ratio. In each test, a dummy variable equal to 1 for high-growth industries is interacted with all the peer variables used in the previous table. I use the same

TABLE 6

Peers' CARs and Industry Characteristics

Table 6 reports OLS regressions of peers' CARs (in %) on peer and industry characteristics for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. Panel A shows coefficients on interactions with a high R&D dummy variable. Panel B shows coefficients on interactions with a high-tech industry dummy variable. Panel C shows coefficients on interactions with a high MTB industry dummy variable. Deal characteristic variables are the same as in Table 5, but coefficients on these variables are not reported. Columns 4 and 5 include acquirer control variables, namely a high MTB ratio, large size, high leverage, and cash acquirer dummy as well as the corresponding interactions. In each panel, the five columns present regressions with acquirer and peer variables and different fixed-effect specifications. $I \times Y$ indicates industry × year fixed effects (in columns 1, 2, 3, and 5). Columns 2 and 5 also include peer fixed effects (indicated with an "*P*"). In column 3, regressions include deal fixed effects only. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. R&D Intensive Industry

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
HIGH_MB_PEER	−0.247*	−0.475***	−0.249*	−0.272**	−0.541***
	(−1.80)	(−3.71)	(−1.82)	(−2.12)	(−3.56)
LARGE_SIZE_PEER	0.666***	0.034	0.673***	0.514***	0.042
	(6.35)	(0.15)	(6.45)	(2.97)	(0.14)
HIGH_CASH_PEER	−0.190**	0.004	−0.183**	0.124	0.265*
	(−2.30)	(0.04)	(−2.20)	(1.05)	(1.90)
HIGH_LEVERAGE_PEER	−0.289**	−0.381**	−0.283**	0.096	−0.341*
	(−2.54)	(−2.37)	(−2.46)	(0.55)	(−1.82)
HIGH_R&D × HIGH_MB_PEER	−0.532**	−0.219	−0.543**	−0.417	0.005
	(−2.13)	(−1.22)	(−2.14)	(−1.45)	(0.02)
HIGH_R&D × LARGE_SIZE_PEER	0.753***	−0.125	0.736***	0.971***	0.006
	(5.26)	(−0.53)	(5.18)	(5.32)	(0.02)
HIGH_R&D × HIGH_CASH_PEER	0.228**	0.012	0.212**	−0.138	−0.250
	(2.10)	(0.10)	(2.01)	(−0.86)	(−1.36)
HIGH_R&D × HIGH_LEVERAGE_PEER	−0.081	0.197	−0.089	−0.508	0.200
	(−0.37)	(0.73)	(−0.41)	(−1.40)	(0.49)
Acquirer controls	No	No	No	Yes	Yes
High R&D × acquirer controls	No	No	No	Yes	Yes
Deal characteristics	Yes	Yes	No	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	Deal	$I \times Y$	$I \times Y$ and P
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.027	0.035	0.051	0.029	0.036

(continued on next page)

TABLE 6 (continued)
Peers' CARs and Industry Characteristics

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
Panel B. High-Tech Industry					
HIGH_MB_PEER	−0.203*	−0.436***	−0.208*	−0.277*	−0.511***
	(−1.78)	(−4.05)	(−1.81)	(−1.90)	(−3.86)
LARGE_SIZE_PEER	0.598***	−0.093	0.604***	0.475**	−0.072
	(5.89)	(−0.38)	(6.01)	(2.44)	(−0.19)
HIGH_CASH_PEER	−0.159*	0.067	−0.152*	0.189*	0.407***
	(−1.79)	(0.76)	(−1.72)	(1.90)	(4.33)
HIGH_LEVERAGE_PEER	−0.241**	−0.365***	−0.234**	0.204*	−0.183
	(−2.48)	(−3.03)	(−2.42)	(1.74)	(−1.58)
HIGH_TECH × HIGH_MB_PEER	−0.574**	−0.262*	−0.582**	−0.394	−0.026
	(−2.49)	(−1.67)	(−2.46)	(−1.38)	(−0.12)
HIGH_TECH × LARGE_SIZE_PEER	0.822***	0.030	0.808***	0.981***	0.129
	(5.68)	(0.10)	(5.67)	(4.54)	(0.32)
HIGH_TECH × HIGH_CASH_PEER	0.176	−0.071	0.162	−0.224	−0.413**
	(1.48)	(−0.54)	(1.40)	(−1.35)	(−2.35)
HIGH_TECH × HIGH_LEVERAGE_PEER	−0.145	0.170	−0.153	−0.631*	0.002
	(−0.70)	(0.65)	(−0.74)	(−1.90)	(0.00)
Acquirer controls	No	No	No	Yes	Yes
High tech × acquirer controls	No	No	No	Yes	Yes
Deal characteristics	Yes	Yes	No	Yes	Yes
Fixed effects	*I* × *Y*	*I* × *Y* and *P*	Deal	*I* × *Y*	*I* × *Y* and *P*
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.027	0.035	0.051	0.029	0.036
Panel C. High MB Industry					
HIGH_MB_PEER	−0.354**	−0.483***	−0.355**	−0.497***	−0.746***
	(−2.45)	(−4.06)	(−2.44)	(−3.12)	(−4.27)
LARGE_SIZE_PEER	0.663***	0.112	0.672***	0.533***	0.095
	(4.62)	(0.39)	(4.58)	(3.79)	(0.49)
HIGH_CASH_PEER	−0.144	0.030	−0.134	0.294	0.475
	(−1.38)	(0.32)	(−1.28)	(1.15)	(1.42)
HIGH_LEVERAGE_PEER	−0.434***	−0.553***	−0.429***	0.018	−0.330*
	(−3.14)	(−3.15)	(−3.10)	(0.11)	(−1.85)
HIGH_MB × HIGH_MB_PEER	−0.363	−0.203	−0.376	−0.125	0.240
	(−1.44)	(−1.20)	(−1.45)	(−0.40)	(0.91)
HIGH_MB × LARGE_SIZE_PEER	0.714***	−0.214	0.697***	0.888***	−0.060
	(3.33)	(−0.68)	(3.21)	(4.39)	(−0.25)
HIGH_MB × HIGH_CASH_PEER	0.160	−0.020	0.142	−0.325	−0.469
	(1.30)	(−0.16)	(1.17)	(−1.01)	(−1.21)
HIGH_MB × HIGH_LEVERAGE_PEER	0.099	0.395	0.092	−0.383	0.184
	(0.38)	(1.38)	(0.35)	(−1.04)	(0.48)
Acquirer controls	No	No	No	Yes	Yes
High MB × acquirer controls	No	No	No	Yes	Yes
Deal characteristics	Yes	Yes	No	Yes	Yes
Fixed effects	*I* × *Y*	*I* × *Y* and *P*	Deal	*I* × *Y*	*I* × *Y* and *P*
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.027	0.035	0.051	0.029	0.036

controls and fixed effects as in Table 5 and only present coefficients for rival and acquirer characteristics, both alone and interacted with the high-growth-opportunity industry dummy variable in the interest of space.

The results reported in Table 6 show large differences in peer reactions between high- and low-growth-opportunity industries. In all regressions, the coefficient on HIGH_MB_PEER is still significantly and economically negative. The interaction of this variable with the indicator variable that captures industry-level

growth opportunities (HIGH_R&D, HIGH_TECH, and HIGH_MB) is negative and statistically and economically significant in many specifications. Thus, the acquisition of peers hurts firms with high growth opportunities on average, and even more so in industries that grow faster. In the same vein, the coefficient on LARGE_SIZE_PEER alone is on average positive and statistically significant in about half of the specifications. Its interaction with the growth industry dummy is also positive and statistically significant in about half of the specifications. On average, this indicates that the acquisition of a peer is negative news for small-size firms in high-growth industries. In growing industries, smaller peers are more likely to lose their competitive edge and suffer from extra competition from the merging firms, since foreign acquisitions tend to weaken their competitive position and ability to realize their growth opportunities.

C. Peers' CARs and Differences in Industry Specialization

Next, I investigate whether peers' CARs vary with the difference in industry specialization between acquirers and peers. Frésard et al. (2017) document that the premium acquirers pay and the economic gains realized in foreign transactions are positively associated with firms' ability to deploy mobile intangible advantages (e.g., know-how or skills) abroad. The difference in industry specialization can impact not only the acquired firm, but also peers that are economically linked to it and compete with it in product markets. On this ground, the expected change in peer value triggered by foreign acquisitions should be related to the difference in industry specialization between the acquirer and its peers.

Following Frésard et al. (2017), I construct two main measures of industry specialization: SP(SALES) is specialization based on total sales, and SP(EMP) is specialization based on total employment, where the market share of a given country–industry–year is measured as the ratio of its sales (or employment) to worldwide sales (employment) in that industry. I obtain data on sales and employment from Worldscope. The variable of interest, ΔSP, is the difference in industry specialization (in a given industry and year) between the acquirer and the peer. To test whether the difference in industry specialization between the acquirer and the peer's country in a given transaction is related to the peer's market reactions, I then regress CARs on the difference in specialization between the acquirer and peer industries (ΔSP); I also include peer, deal, acquirer characteristics, and industry and year fixed effects. The peer, deal, and acquirer characteristics are similar to those used in previous tests.

Table 7 presents the results. Notably, the estimated coefficients on ΔSP are negative and highly significant in all four specifications and with both measures of specialization.[15] These estimates confirm that the negative expected change in peers' value associated with foreign acquisitions increases with differences in industry specialization between the acquirer country and the United States. The results are economically substantial. In particular, a 1-standard-deviation increase in ΔSP is associated with around a 0.2-percentage-point lower return for industry

[15]While I show that the ΔSP variable is also an important determinant of peers' CARs in this table, I run separate tests because when I include it in the main specification of Table 5, the number of observations declines due to missing data for some industries in foreign countries.

TABLE 7

Peers' CARs and Differences in Industry Specialization

Table 7 reports OLS regressions of peers' CARs (in %) on difference in industry specialization for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. The variable of interest, ΔSP, is the difference in industry specialization (in a given industry and year) between the acquirer country and the United States. I consider two measures of specialization, one based on sales (SP(SALES)) in columns 1–4 and one based on employment (SP(EMP)) in columns 5–8. Columns 1, 3, 5, and 7 include industry × year fixed effects (indicated with "$I \times Y$"). Columns 2, 4, 6, and 8 include industry × year and peer fixed effects (indicated with an "P"). Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)							
	SP(SALES)				SP(EMP)			
	1	2	3	4	5	6	7	8
ΔSP	−0.165***	−0.164***	−0.173***	−0.159***	−0.138***	−0.138***	−0.195***	−0.189***
	(−3.83)	(−3.73)	(−3.92)	(−3.97)	(−5.35)	(−5.31)	(−6.35)	(−6.34)
HIGH_MB_PEER	−0.640***	−0.628***	−0.595***	−0.531***	−0.641***	−0.632***	−0.566***	−0.497***
	(−3.13)	(−5.62)	(−2.78)	(−3.75)	(−3.28)	(−6.00)	(−2.61)	(−3.40)
LARGE_SIZE_PEER	1.229***	−0.069	1.235***	0.011	1.229***	−0.065	1.238***	0.024
	(7.25)	(−0.45)	(6.08)	(0.07)	(7.21)	(−0.42)	(6.28)	(0.16)
HIGH_CASH_PEER	−0.041	−0.023	−0.029	0.037	−0.028	0.000	−0.058	0.034
	(−0.57)	(−0.35)	(−0.25)	(0.32)	(−0.41)	(0.00)	(−0.55)	(0.33)
HIGH_LEVERAGE_PEER	−0.350**	−0.203	−0.285	−0.159	−0.347**	−0.204	−0.302	−0.177
	(−2.21)	(−1.02)	(−1.01)	(−0.55)	(−2.19)	(−1.04)	(−1.12)	(−0.64)
Acquirer controls	No	No	Yes	Yes	No	No	Yes	Yes
Deal characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	$I \times Y$	$I \times Y$ and P	$I \times Y$	$I \times Y$ and P	$I \times Y$	$I \times Y$ and P
No. of obs.	89,769	89,071	65,463	64,650	88,280	87,585	64,687	63,879
Adj. R^2	0.028	0.036	0.029	0.037	0.027	0.036	0.030	0.037

peers.[16] This evidence supports the view that foreign takeovers allow target firms to obtain access to acquirers' specialized advantages, which undermines the prospects of their product market rivals.

V. Exploring Economic Mechanisms

In previous sections, I provide a collection of results that, overall, support the competition hypothesis. The goal of the subsequent tests is to explore whether anticipation or collusion effects could explain the variation in peers' announcement returns relative to competitive effects. To do so, I run a series of tests. First, I investigate whether peers' stock price reactions are related to the anticipation of future acquisition activity, such as a change in the likelihood that peers will become targets in the near future. Second, I ask whether observed peers' CARs are related to future observed real effects. For example, the competition view predicts that when peers' CARs are negative, the sales growth of these firms should decline in the years following the deal on average. Third, I check whether peers' CARs depend on the competitive structure of their industry, since competitive effects are likely to be weaker in industries that are already highly concentrated. Fourth, I analyze whether peers' abnormal returns are correlated with those of the targets involved in the transactions. If peers' CARs reflect competitive effects, they should be negatively

[16]Frésard et al. (2017) document that a 1-standard-deviation rise in ΔSP is associated with a 0.2-percentage-point higher acquirer announcement return and a 2.1-percentage-point higher target announcement return.

correlated with targets' gains. Finally, I investigate how peers' stock prices respond around the announcement of deal withdrawals, since investors who act in anticipation that a foreign deal will have detrimental competitive effects on rivals should react in the opposite direction when the deal is canceled.

A. Peers' CARs and the Anticipation Effect

The anticipation view predicts that peers' stock price reactions to a deal announcement reflect an increased probability of being a target in the near future. Since acquisitions tend to happen in waves (e.g., Harford (2005)), the observed peers' CARs may occur because the timing of acquisitions is informative about future takeovers. Note, however, that the anticipation effect, which leads to positive peers' stock price reactions, is unlikely to explain the negative stock price reactions observed in my sample. The anticipation effect has the potential to mitigate the negative reactions, hence the need to explore this effect. To test this possibility, I analyze the joint dynamics of horizontal foreign and domestic acquisitions, following Derrien et al. (2023). To do so, I regress the (log) number (and value) of foreign or domestic acquisitions in a given industry-quarter on their lags (up to eight quarters), as well as industry and quarter fixed effects.

Figure 2 displays the estimated coefficients of these four regressions. In Graphs A and B of Figure 2, the coefficients on the lagged number (value) of foreign deals are in general positive (negative) and significant up to 1 lag, whereas the coefficients on the lagged number or value of domestic deals are positive and significant up to 1 lag. In Graphs C and D of Figure 2, the coefficients on the lagged number (value) of foreign deals are positive (negative) and significant up to 1 or 2 lags, whereas the coefficients on the lagged number or value of domestic deals are positive and significant up to 4 lags. Overall, the results in Figure 2 indicate that the intensity of foreign acquisitions in a given quarter (in number and dollars) does not appear to affect the probability of future takeovers, which suggests that the timing of foreign or domestic acquisitions is unlikely to explain the observed peers' CARs around horizontal foreign deals.

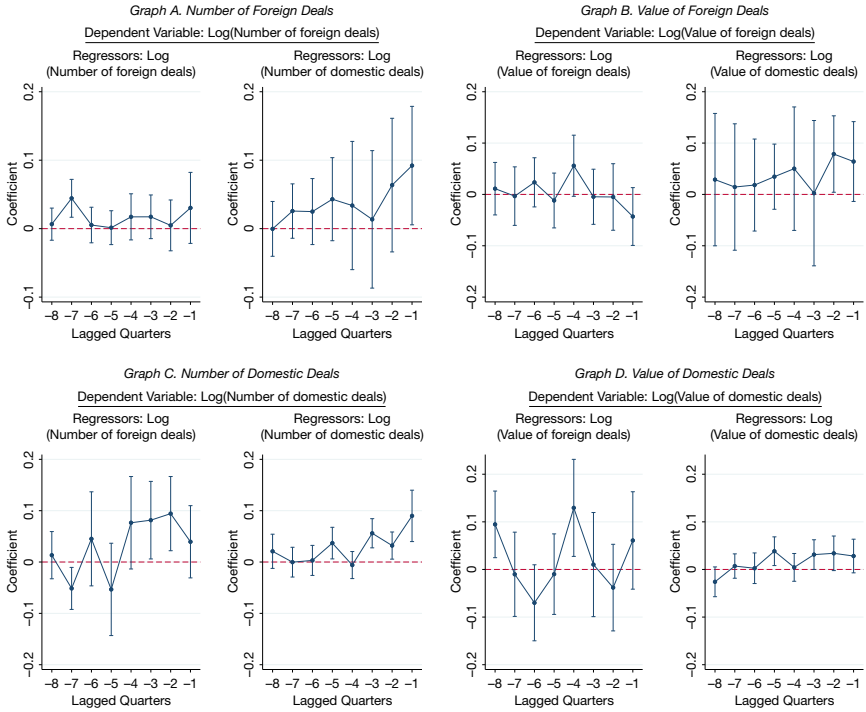
To further evaluate whether and how much of the peers' stock price reactions are explained by the anticipation of future takeovers, I investigate the correlation between peers' CARs around deal announcements and the probability of becoming takeover targets in the near future. I conjecture that if a particular peer's CAR occurs due to changes in investors' anticipation that it will be targeted by a foreign firm in the near future, the takeover probability should correlate with its CAR. To test this conjecture, I create a dummy variable equal to 1 if a peer becomes an actual ex post target by a foreign firm in the next 12 months, following Song and Walkling (2000) and Derrien et al. (2023). Table 8 presents the results. In all specifications, peers' CARs are positively but insignificantly correlated with the likelihood of being a target in the next 12 months. This finding indicates that peers that will become a target within a year do not have different CARs at the time foreign deals are announced in their industry.[17] Overall, the evidence suggests that the observed peers' CARs are largely unrelated to the anticipation of future takeovers.

[17]The conclusion remains unchanged if I compute takeover likelihood over 2 years instead of 1 year.

FIGURE 2

Foreign and Domestic Acquisition Waves

Figure 2 reports coefficient estimates from regressions of the number and value of foreign and domestic acquisitions in a given industry-quarter on lagged quarterly foreign and domestic acquisitions (in numbers and values), with lags of one to eight quarters. The dependent variable is the logarithm of the number or value of foreign (or domestic) deals. All regressions include 4-digit SIC industry and year-quarter fixed effects. The coefficient estimates in each graph are from the same regression. For example, Graph A shows the coefficient estimates of regressing the logarithm of the number of foreign deals on 8 lags of the logarithm of the number of foreign deals and 8 lags of the logarithm of the number of domestic deals. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The graphs report the point estimates and the 95% confidence interval.



B. Peers' Real and Financial Outcomes

The competition view predicts that peers' CARs are negative around deal announcements because foreign acquisitions signal tougher competition. If the competitive position of peers weakens relative to the new entity that emerges from the transaction, this weakening should manifest itself in a deterioration of peers' future outcomes.[18] To test this prediction, I split the sample of peers according to whether the CAR around the deal announcement is positive or negative and create a dummy variable equal to 1 for peers with negative CARs. Then I regress sales growth, return on assets, MTB ratio, profit margin, and sales-based market share between 3 years pre- and post-transaction on this dummy variable interacted with event time dummies. The regressions also include year and firm fixed effects.

[18]For instance, Frésard and Valta (2016) document that U.S. firms decrease their capital expenditures in response to increased foreign competition by using the reduction in import tariffs as a measure of the increase in foreign competition.

TABLE 8

Peers' CARs and the Anticipation of Future Acquisitions

Table 8 reports coefficient estimates from regressions of peers' CARs (in %) on the probability of becoming a takeover target over the next year for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. The independent variable of interest is the TAKEOVER_DUMMY, which is equal to 1 if peers become takeover targets within 1 year from the current deal, and 0 otherwise. All independent variables are described in Appendix B. Peer, deal, and acquirer characteristic variables are the same as in Table 5, but coefficients on these variables are not reported. All columns include industry × year fixed effects ($I \times Y$). Columns 2 and 4 also include peer fixed effects (indicated with an "*P*"). Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)			
	1	2	3	4
TAKEOVER_DUMMY	0.014	0.020	0.009	0.015
	(1.26)	(1.56)	(0.80)	(1.53)
Peer controls	Yes	Yes	Yes	Yes
Acquirer controls	No	No	Yes	Yes
Deal characteristics	Yes	Yes	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	$I \times Y$	$I \times Y$ and P
No. of obs.	93,132	92,336	66,377	65,550
Adj. R^2	0.013	0.011	0.014	0.008

Figure 3 displays the estimated coefficients of the regressions on the interaction terms between the negative CARs and event time dummies, as well as the 95% confidence intervals. Graphs A–E report the results for sales growth, return on assets, MTB ratio, profit margin, and market share, respectively. In the years following the deal, the sales growth of peers that exhibit negative CARs is significantly lower than the sales growth of peers that react positively to the deal announcement. For instance, in Graph A, the point estimate of the interaction term in year 1 is −0.022, which suggests that 1 year after the deal, the sales growth of firms with negative CARs is 2.2 percentage points lower compared to firms with positive CARs. The difference in sales growth between the two groups is significant at the 1% level between years 1 and 3, and at the 10% level in year 0. The difference in return on assets and MTB ratio between the two groups is also negative and significant at the 1% level in the years following the deal, whereas the difference in profit margin and sales-based market share is statistically insignificant in the years following the deal. Overall, these results indicate that observed peers' CARs appear to be largely related to future observed real effects, because the sales growth, return on assets, and MTB ratio of peers decline in the years following the deal.

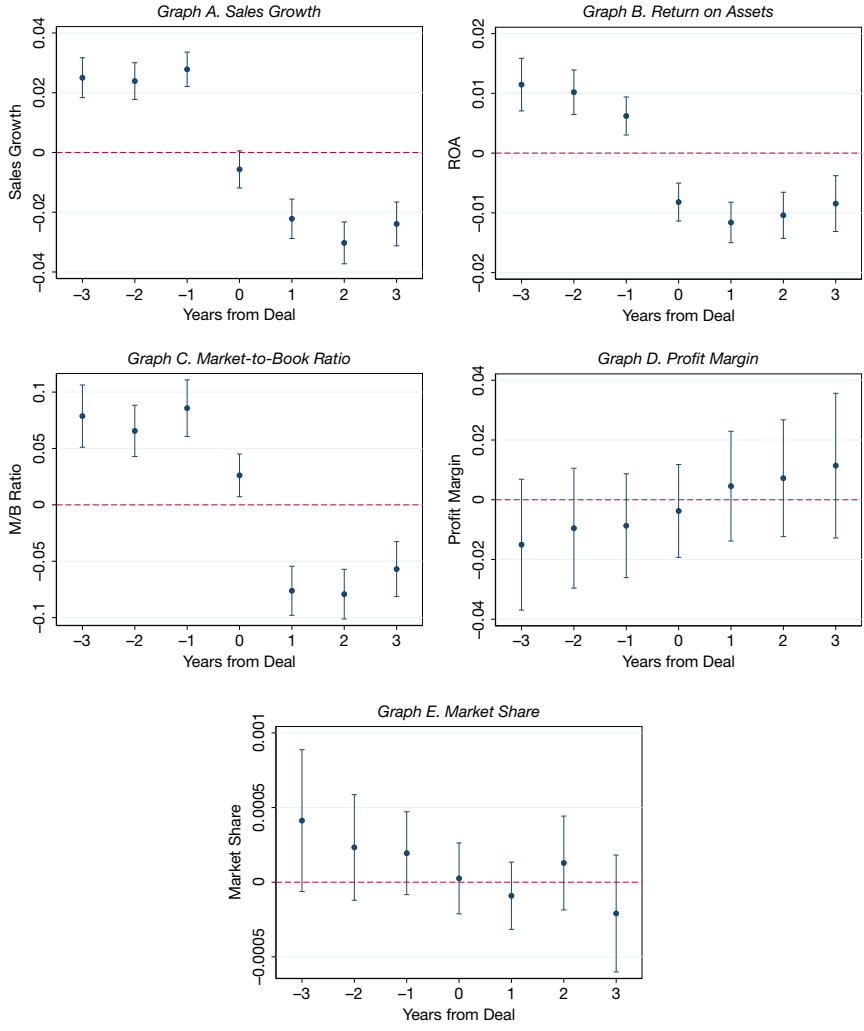
To further explore whether foreign acquisitions are associated with different ex post real and financial outcomes for industry peers, I regress several peer-level outcome variables on a dummy variable that equals 1 for the years 0, +1, and +2 around the deal announcement date.[19] I also include year and peer fixed effects in all specifications and express all coefficients relative to time $t = -1$. Similar to Servaes and Tamayo (2014) and Derrien et al. (2023), I conduct additional tests at industry level by considering the averages of every variable for each

[19]Appendix Table A.5 reports Pearson correlations between peers' CARs and related variables. While peers' CARs are positively correlated with return on assets, profit margin, and market share, they are negatively correlated with sales growth, MTB ratio, and R&D-to-sales ratio.

FIGURE 3

Real Outcomes for Peers with Negative and Positive CARs

Figure 3 shows sales growth, return on assets, MTB ratio, profit margin, and sales-based market share for peers with negative CARs relative to firms with positive CARs in the event time around foreign acquisitions in their industry. Specifically, the figure reports the estimated coefficients of a regression of each variable on event time dummies interacted with a dummy equal to 1 when CARs are negative and 0 otherwise, as well as the 95% confidence intervals. The regressions include year and firm fixed effects, and standard errors are clustered at the firm level.



industry–year observation. For industry-level tests, I include year and industry fixed effects in all specifications, and express all coefficients relative to time $t = -1$.

Panels A and B of Table 9 present the results at peer- and industry-level measures, respectively. In Panel A, I find that peers' sales growth, MTB ratio, and return on assets decline significantly in the years following the deal. The changes in sales-based market share are also negative and statistically significant in year 2. The changes in profit margin are positive but insignificant in the years following

TABLE 9
Real Outcomes for Industry Peers

Table 9 shows coefficient estimates from peer- and industry-level regressions of real outcome variables on dummy variables for the years 0, +1, and +2 around the deal announcement date. The coefficient estimates are relative to year $t = -1$. In Panel A, the dependent variable in columns 1–3 is sales growth, in columns 4–6 is MTB ratio, in columns 7–9 is return on assets, in columns 10–12 is profit margin, and in columns 13–15 is sales-based market share. All regressions at the peer level include firm and year fixed effects, and standard errors are adjusted for heteroscedasticity and clustered at the firm level. In Panel B, the dependent variable in columns 1–3 is average sales growth, in columns 4–6 is average R&D-to-sales, in columns 7–9 is average MTB ratio, in columns 10–12 is average return on assets, and in columns 13–15 is average profit margin. All regressions at industry level include industry and year fixed effects, and standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Peer-Level Outcome Variables

	Dependent Variable														
	Sales Growth			MTB Ratio			Return on Assets			Profit Margin			Market Share		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
YEAR_0	−0.029***			−0.097***			−0.011***			0.042			−0.010		
	(−10.11)			(−8.18)			(−8.21)			(0.62)			(−0.88)		
YEAR_ + 1		−0.043***			−0.145***			−0.014***			0.116			−0.017	
		(−10.40)			(−8.47)			(−6.49)			(1.02)			(−0.96)	
YEAR_ + 2			−0.051***			−0.136***			−0.016***			0.136			−0.039*
			(−11.63)			(−7.78)			(−6.17)			(0.97)			(−1.71)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	180,533	173,111	164,270	191,760	182,461	172,368	190,907	182,111	172,673	183,371	175,065	166,077	192,751	183,940	174,409
Adj. R^2	0.182	0.157	0.166	0.547	0.535	0.537	0.669	0.657	0.650	0.491	0.481	0.471	0.888	0.894	0.890

Panel B. Industry-Level Outcome Variables

	Dependent Variable														
	Sales Growth			R&D to Sales			MTB Ratio			Return on Assets			Profit Margin		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
YEAR_0	−0.021***			−0.082**			−0.070***			−0.036**			0.029		
	(−3.50)			(−2.07)			(−2.69)			(−2.03)			(1.33)		
YEAR_ + 1		−0.040***			−0.179**			−0.135***			−0.011***			0.029	
		(−5.41)			(−2.17)			(−3.86)			(−3.35)			(1.61)	
YEAR_ + 2			−0.048***			−0.193			−0.159***			−0.005			−0.002
			(−5.43)			(−1.52)			(−4.85)			(−1.29)			(−0.31)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	3,052	3,024	2,966	3,105	3,044	2,986	3,105	3,044	2,988	3,105	3,044	2,988	3,105	3,044	2,986
Adj. R^2	0.348	0.316	0.330	0.823	0.824	0.857	0.777	0.774	0.768	0.376	0.711	0.767	0.478	0.461	0.492

the deals, which suggests that foreign acquisitions do not appear to significantly harm or benefit customers, and also that they are unlikely to facilitate collusive behaviors among firms. The results at the industry-level analyses in Panel B are also consistent with the main findings at the peer-level.[20] Overall, the evidence suggests that foreign acquisitions are negatively related to industry peers' future fundamentals on average, consistent with the competition channel.

C. Peers' CARs and Industry Competitive Structures

I also investigate whether peers' CARs around foreign acquisitions vary with the competitive structure of their industry (e.g., Song and Walkling (2000)). The idea of this assessment is that if the observed stock price reaction of industry peers reveals information about the competitive implications induced by foreign acquisitions (e.g., the creation of stronger competitors or an overall change in market power), peers' announcement returns should depend on measures of competition in an industry. More precisely, since peers in highly competitive industries are already aggressively competing, the additional challenge from a foreign firm with net competitive advantage may trigger more negative peers' stock price reactions in such industries. On the other hand, the collusion hypothesis predicts that acquisitions may strengthen existing oligopolies and facilitate collusive behaviors among the remaining firms. However, the prospect of collusion is extremely low in cross-border takeovers, since foreign acquisitions leave the number of firms unchanged in the industry. The arrival of a stronger foreign bidder is very likely to change the competitive equilibrium, and harm peers in industry in which the pre-acquisition equilibrium is collusive. Thus, foreign acquisitions could generate more negative peers' CARs in highly concentrated industries by threatening their cartel stability.

To test whether peers' stock price reactions vary with the competitive structure of their industry, I regress peers' CARs on three time-varying measures of competition following Derrien et al. (2023). First, I use the sales-based Herfindahl–Hirschman index (HHI) for each 4-digit SIC industry as a proxy for the degree of industry concentration. Second, I use the industry-level profit margin as a measure of industry-level profitability (e.g., Nickell (1996)).[21] Finally, I use product market fluidity from Hoberg, Phillips, and Prabhala (2014), which captures potential competitive threats to the firm in its product market.[22]

Table 10 reports the results. The coefficients on industry HHI and profit margins are both positive and marginally significant in specifications without acquirer controls. This finding suggests that compared to a concentrated industry, foreign acquisitions trigger more negative peers' CARs in a highly competitive industry. Notably, the coefficient of product market fluidity is negative and highly significant in both specifications, suggesting that the announcement returns of

[20]Note that analyzing the evolution of outcome variables for the target firms is not feasible due to the lack of accounting data for targets, since many of them are delisted post-acquisition.

[21]A higher value of industry HHI and profit margin implies that the industry enjoys greater market power and therefore faces weaker competition.

[22]As described by Hoberg et al. (2014), fluidity measures the similarity between a firm's products and aggregate changes in competitors' products. A higher value of fluidity indicates that the firm's products are closer to its competitors, and therefore the competition is higher.

TABLE 10

Peers' CARs and Industry Competitive Structures

Table 10 reports OLS regressions of peers' CARs (in %) on proxies for product market competition for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. INDUSTRY_HHI is sales-based 4-digit SIC industry Herfindahl–Hirschman index. INDUSTRY_PROFIT_MARGIN is 4-digit SIC industry average of operating income divided by sales. PRODUCT_MARKET_FLUIDITY is the product market fluidity measure of Hoberg et al. (2014). All independent variables are described in Appendix B. All columns include year (Y) fixed effects. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)					
	1	2	3	4	5	6
INDUSTRY_HHI	0.066*	0.050				
	(1.72)	(1.25)				
INDUSTRY_PROFIT_MARGIN			0.102**	0.044		
			(2.21)	(1.17)		
PRODUCT_MARKET_FLUIDITY					−0.063***	−0.043***
					(−5.31)	(−2.83)
Peer controls	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer controls	No	Yes	No	Yes	No	Yes
Deal characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Y	Y	Y	Y	Y	Y
No. of obs.	93,150	66,395	93,150	66,395	90,548	64,559
Adj. R^2	0.019	0.020	0.019	0.020	0.020	0.021

industry peers following foreign acquisitions significantly depend on competitive forces. Consistent with the competition story, these results support the argument that foreign takeovers are more detrimental to firms operating in highly competitive industries and firms that are more exposed to product market threats and competition.

D. Peers' CARs and Targets' Announcement Returns

Next, I investigate how peers' abnormal returns are correlated with those of the public targets involved in transactions. Harris and Ravenscraft (1991) show that target wealth gains are significantly larger in cross-border takeovers than in domestic takeovers in the United States, which indicates that foreign buyers pay substantially higher premiums for targets than domestic buyers. I conjecture that if synergy-driven foreign transactions result in the creation of stronger competitors that could dampen the competitive position of rivals, the announcement returns of peers should be inversely related to those of targets. In other words, if the newly created firm obtains benefits at the expense of its peers, the stock prices of targets and peers should move in the opposite direction around the announcement of foreign takeovers. To test this conjecture, I calculate the CARs of public targets in the same way I calculate the CARs of industry peers. I then regress industry peers' CARs on the CARs of targets and include the usual peer, deal, and acquirer control variables, as well as different sets of fixed effects.

Table 11 presents the results. The coefficient on target CARs is negative and highly significant in all specifications. The economic magnitude of the coefficient is large, which indicates that a 1-percentage-point increase in target firms' abnormal

TABLE 11

Peers' CARs and Announcement Returns of Targets

Table 11 reports OLS regressions of peers' CARs (in %) on targets' CARs for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is peers' CAR(−5, 5). Peer and target CARs are calculated over the period announcement date −5 days to +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. Peer, deal, and acquirer characteristic variables are the same as in Table 5, but coefficients on these variables are not reported. All columns include industry × year fixed effects ($I \times Y$). Columns 2 and 4 also include peer fixed effects (indicated with an "P"). Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)			
	1	2	3	4
TARGET_CARs(−5,5)	−1.015***	−1.012***	−1.245***	−1.170***
	(−7.18)	(−6.85)	(−6.46)	(−6.17)
Peer controls	Yes	Yes	Yes	Yes
Acquirer controls	No	No	Yes	Yes
Deal characteristics	Yes	Yes	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	$I \times Y$	$I \times Y$ and P
No. of obs.	19,685	18,622	11,016	10,309
Adj. R^2	0.051	0.064	0.045	0.057

returns is associated with around a 1-percentage-point fall in their peers' abnormal returns. The negative relation between peers' and targets' announcement returns supports the view that investors expect foreign acquisitions to be detrimental for peers' future prospects by changing the competitive forces in the industry. Thus, this evidence suggests that targets' gains in synergy-driven foreign horizontal acquisitions come at the expense of industry peers, consistent with the competition hypothesis.

E. Peers' CARs Around Deal Withdrawals

Finally, I examine peers' stock price reactions around the announcements of deal withdrawals. The competition view suggests that the overall negative peers' CARs around the announcements of foreign acquisitions reflect the competitive implications of the transaction with respect to industry-wide changes. If peers' initial announcement returns are driven by the competitive effects of the transaction and not by anticipation effects, we should observe significant and opposite stock price reactions around withdrawal announcements (e.g., Malmendier et al. (2016)). To test this conjecture, I gather all withdrawn deals over the period 1990–2020 from the SDC. I then calculate the CARs for peers around withdrawal announcements in the same way I calculate the CARs around acquisition announcements.

Table 12 presents the results. At the peer-deal level, peers' stock price reactions are positive and statistically significant around deal withdrawal announcements. At the deal level, peers' CARs are also positive and marginally significant. Overall, the findings are consistent with the idea that observed negative peers' CARs reflect detrimental competitive effects of foreign acquisitions in the peer's industry. Collectively, the results indicate that foreign acquisitions have significant impacts on industry dynamics and competitive balance that differs from that of domestic acquisitions.

TABLE 12

Peers' CARs Around Deal Withdrawals

Table 12 presents cumulative abnormal returns (CARs, in %) of industry peers around withdrawal announcements of horizontal foreign deals in their industry. The sample includes all cross-border M&A deals announced but withdrawn between 1990 and 2020. The table shows three measures of peers' CARs. The measures vary in the length of the window over which the stock price reaction is calculated (announcement date −1 day to +1 day, announcement date −3 days to +3 days, or announcement date −5 days to +5 days). I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. Each measure is presented separately for all industry peers (i.e., at the peer-deal level) and for equal-weighted portfolios including all industry peers for each deal. The means at the peer-deal (deal) level is the estimate of the constant from a regression with no explanatory variables, and significance is calculated by clustering standard errors at the deal (4-digit SIC industry) level. The significance of medians is obtained with a sign test. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

CARs	Unit of Obs.	No. of Obs.	Mean	Median	Std. Dev.	p10	p90
CAR(−1, 1)	Peer-deal	6,537	0.294	−0.044	6.563	−6.590	7.070
	Deal	89	0.379	0.187	2.565	−1.923	2.773
CAR(−3, 3)	Peer-deal	6,537	0.669	0.0528	10.331	−10.177	11.610
	Deal	89	0.624	0.017	5.056	−3.012	4.825
CAR(−5, 5)	Peer-deal	6,537	0.467	−0.072	12.920	−13.385	14.643
	Deal	89	0.282	−0.099	6.301	−4.861	4.743

VI. Conclusion

This article explores the effects of horizontal foreign acquisitions on the publicly listed peers of U.S. target firms. I estimate this effect by calculating stock price reactions of industry peers in the 2-day, 6-day, and 10-day window centered on the announcement of cross-border M&A transactions. Unlike previous research on this topic, I find that on average, peers' CARs are significantly negative around foreign takeovers. The effect is economically large at the level of peers (−0.95%) and in aggregate ($1.26 trillion). The evidence indicates that foreign acquisitions have an impact on industry dynamics and competitive balance that differs markedly from that of domestic acquisitions.

The negative average stock market reactions of industry peers around horizontal foreign deals is consistent with a competition channel. Under this hypothesis, the acquisition of a target allows the combined company to have better access to financing and product markets and to realize synergies, which will weaken the future prospects of industry peers. Consistent with this view, stock price effects increase with relatively high MTB-ratio competitors, with larger acquirers, and with the difference in industry specialization between the acquirer and the peer country. Peers' returns are also more negative in growing, less specialized, and highly competitive industries. Moreover, the negative peers' stock price reactions are negatively related to future operating performance, as well as targets' gain. Collectively, the findings suggest that foreign acquisitions have strong competitive effects for the industry peers of the U.S. target companies, and that perceived changes in competitive balance dominate any signals of favorable industry conditions conveyed through these acquisitions.

Appendix A. Additional Tables and Figures

TABLE A.1
Sample Selection

Table A.1 presents the sample selection procedure. The second column shows the number of deals. The third column presents the average transaction value.

Selection Criteria	No. of Deals	Average Transaction Value ($m)
Cross-border deals announced between 1990 and 2020 and effective as of 2020 (except-tax haven countries)	23,325	399.68
Excluding deals in financial and utilities industries	20,684	368.21
Excluding privatizations	20,271	368.21
Excluding acquisitions of remaining interest, certain assets, self-tenders, exchange offers, buybacks, and recapitalizations	19,662	372.09
Excluding LBOs and MBOs	19,438	370.67
Excluding deals involving government agencies	19,396	370.71
Excluding minority acquisitions	19,310	372.29
Excluding non-horizontal deals with fewer than three peers	5,783	444.94
Excluding deals without transaction value or a transaction value below USD 10 million	1,588	678.59

TABLE A.2
Peers' CARs and High Growth Peers

Table A.2 reports OLS regressions of peers' CARs (in %) on deal, peer, and acquirer characteristics for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. HIGH_GROWTH_PEER is a dummy equal to 1 for all peers whose sales growth is above the median peer sales growth for a given deal. All independent variables are described in Appendix B. The five columns present regressions with different fixed-effect specifications. $I \times Y$ indicates industry × year fixed effects (in columns 1 and 4). Columns 2 and 5 include industry × year and peer fixed effects (indicated with an "P"). In column 3, regressions include deal fixed effects only. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
HIGH_GROWTH_PEER	−0.189***	−0.177**	−0.199***	−0.090*	−0.045
	(−4.04)	(−1.98)	(−4.60)	(−1.80)	(−0.68)
LARGE_SIZE_PEER	1.246***	−0.023	1.243***	1.271***	0.060
	(7.32)	(−0.13)	(7.41)	(6.10)	(0.40)
HIGH_CASH_PEER	−0.124**	−0.050	−0.129**	−0.074	0.020
	(−2.04)	(−0.73)	(−2.23)	(−0.60)	(0.17)
HIGH_LEVERAGE_PEER	−0.251**	−0.147	−0.249**	−0.233	−0.111
	(−2.02)	(−0.79)	(−2.02)	(−0.85)	(−0.38)
Acquirer controls	No	No	No	Yes	Yes
Deal characteristics	Yes	Yes	No	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	Deal	$I \times Y$	$I \times Y$ and P
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.027	0.035	0.050	0.028	0.035

TABLE A.3

Peers' CARs and Deal, Acquirer, and Peer Characteristics

Table A.3 reports OLS regressions of peers' CARs (in %) on deal, peer, and acquirer characteristics for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. The five columns present regressions with different fixed-effect specifications. $I \times Y$ indicates industry × year fixed effects (in columns 1 and 4). Columns 2 and 5 include industry × year and peer fixed effects (indicated with an "*P*"). In column 3, regressions include deal fixed effects only. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
PEER_MB_RATIO	−0.184***	−0.249***	−0.187***	−0.176***	−0.224***
	(−3.30)	(−4.25)	(−3.27)	(−3.35)	(−4.00)
PEER_log(TOTAL_ASSETS)	0.347***	0.026	0.346***	0.367***	0.005
	(6.61)	(0.25)	(6.72)	(6.30)	(0.04)
PEER_CASH_TO_ASSET_RATIO	0.536**	0.592	0.521***	0.430	0.562
	(2.49)	(1.10)	(2.64)	(1.31)	(0.80)
PEER_LEVERAGE	−0.570**	−0.156	−0.564**	−0.472**	−0.045
	(−2.52)	(−0.62)	(−2.54)	(−2.33)	(−0.17)
ACQUIRER_MB_RATIO				0.097	0.097
				(1.04)	(0.89)
ACQUIRER_log(TOTAL_ASSETS)				−0.142***	−0.143***
				(−3.44)	(−3.38)
ACQUIRER_CASH_TO_ASSET_RATIO				−0.000	−0.000
				(−0.06)	(−0.09)
ACQUIRER_LEVERAGE				−0.025*	−0.025*
				(−1.89)	(−1.79)
log(NUMBER_OF_DEALS)	0.098	0.104		−0.107	−0.152
	(0.58)	(0.60)		(−0.22)	(−0.31)
log(VALUE_OF_DEALS)	−0.219	−0.328		−0.018	−0.078
	(−0.88)	(−1.45)		(−0.08)	(−0.34)
log(TRANSACTION_VALUE)	−0.115**	−0.115**		−0.147**	−0.148**
	(−2.21)	(−2.14)		(−2.33)	(−2.28)
PUBLIC_TARGET	0.438	0.442			
	(1.03)	(1.01)			
PUBLIC_ACQUIRER	0.447	0.449			
	(0.96)	(0.95)			
Fixed effects	$I \times Y$	$I \times Y$ and P	Deal	$I \times Y$	$I \times Y$ and P
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.029	0.036	0.053	0.032	0.038

TABLE A.4

Peers' CARs and Deal, Acquirer, and Peer Characteristics (with Quartile Indicators)

Table A.4 reports OLS regressions of peers' CARs (in %) on deal, peer, and acquirer characteristics for cross-border M&A deals announced and completed between 1990 and 2020. The dependent variable is the CAR(−5, 5), calculated over the period announcement date −5 days to announcement date +5 days. I compute the CARs using a 4-factor model with the value-weighted market index and the HML, SMB, and MOM factors. All independent variables are described in Appendix B. The five columns present regressions with different fixed-effect specifications. $I \times Y$ indicates industry × year fixed effects (in columns 1 and 4). Columns 2 and 5 include industry × year and peer fixed effects (indicated with an "*P*"). In column 3, regressions include deal fixed effects only. Standard errors are adjusted for heteroscedasticity and clustered at the 4-digit SIC industry level. The *t*-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable: CAR (−5,5)				
	1	2	3	4	5
PEER_MB_RATIO_(Q4)	−1.022***	−1.423***	−1.021***	−1.239***	−1.569***
	(−3.13)	(−5.14)	(−3.13)	(−2.60)	(−3.35)
PEER_MB_RATIO_(Q3)	−0.298***	−0.542***	−0.296***	−0.377***	−0.591***
	(−3.18)	(−6.52)	(−3.18)	(−2.82)	(−6.48)
PEER_MB_RATIO_(Q2)	−0.038	−0.264*	−0.036	−0.168	−0.407***
	(−0.28)	(−1.66)	(−0.27)	(−1.14)	(−2.79)
PEER_log(TOTAL_ASSETS)_(Q4)	2.031***	0.123	2.030***	2.197***	0.116
	(7.03)	(0.47)	(7.06)	(5.92)	(0.40)
PEER_log(TOTAL_ASSETS)_(Q3)	1.620***	0.307	1.620***	1.752***	0.316
	(9.47)	(0.91)	(9.48)	(8.32)	(0.88)
PEER_log(TOTAL_ASSETS)_(Q2)	1.214***	0.499**	1.214***	1.238***	0.408
	(8.67)	(2.01)	(8.71)	(7.71)	(1.37)
PEER_CASH_TO_ASSET_RATIO_(Q4)	−0.017	0.235	−0.018	−0.094	0.200
	(−0.16)	(1.61)	(−0.17)	(−0.67)	(0.90)
PEER_CASH_TO_ASSET_RATIO_(Q3)	−0.076	0.012	−0.076	−0.055	0.061
	(−1.27)	(0.18)	(−1.27)	(−0.92)	(0.67)
PEER_CASH_TO_ASSET_RATIO_(Q2)	−0.063	0.070	−0.064	−0.132	0.013
	(−0.82)	(1.25)	(−0.82)	(−1.65)	(0.22)
PEER_LEVERAGE_(Q4)	−0.620***	−0.392	−0.622***	−0.527*	−0.327
	(−4.58)	(−1.60)	(−4.64)	(−1.78)	(−0.81)
PEER_LEVERAGE_(Q3)	−0.497***	−0.269	−0.500***	−0.428	−0.164
	(−2.85)	(−1.10)	(−2.87)	(−1.45)	(−0.47)
PEER_LEVERAGE_(Q2)	−0.230**	−0.038	−0.238***	−0.129	0.029
	(−2.44)	(−0.32)	(−2.58)	(−1.05)	(0.18)
Acquirer controls	No	No	No	Yes	Yes
Deal characteristics	Yes	Yes	No	Yes	Yes
Fixed effects	$I \times Y$	$I \times Y$ and P	Deal	$I \times Y$	$I \times Y$ and P
No. of obs.	93,150	92,354	93,137	66,395	65,568
Adj. R^2	0.030	0.036	0.053	0.031	0.037

TABLE A.5

Correlation Coefficients

Table A.5 reports Pearson correlation coefficients of peers' CARs with peers' real and financial outcome variables. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Pearson Correlation Matrix

	1	2	3	4	5	6	7
1. CAR(−5, 5)	1						
2. SALES_GROWTH	−0.0096**	1					
3. MB_RATIO	−0.0683***	0.1170***	1				
4. RETURN_ON_ASSETS	0.0793***	0.1190***	−0.3410***	1			
5. PROFIT_MARGIN	0.0170***	0.2060***	−0.1600***	0.3650***	1		
6. MARKET_SHARE	0.0253***	−0.0182***	−0.0948***	0.1760***	0.0631***	1	
7. R&D_TO_SALES	−0.0136***	−0.1930***	0.1580***	−0.3630***	−0.9590***	−0.0633***	1

Appendix B. Definition of Variables

CAR(−5, 5): Cumulative abnormal return between 5 days prior to the announcement and 5 days after the announcement of the deal. The predicted returns are calculated by estimating a 4-factor model including the Fama–French factors SMB, HML, and MOM on stock return data between 251 and 21 days before the deal. Source: CRSP, Kenneth French's website.

log(NUMBER_OF_DEALS): Logarithm of the number of deals during the last year in the same 4-digit SIC industry as the current deal. Source: SDC.

log(VALUE_OF_DEALS): Logarithm of the total transaction value of all deals during the last year relative to the deal. Source: SDC.

log(TRANSACTION_VALUE): Logarithm of the deal value. Source: SDC.

PUBLIC_ACQUIRER: A dummy variable equal to 1 if the acquirer is in Datastream during the acquisition year. Source: Datastream.

PUBLIC_TARGET: A dummy variable equal to 1 if the target is in CRSP during the acquisition year. Source: CRSP.

HIGH_MB_PEER: A dummy equal to 1 for all peers whose MTB ratio is above the median peer MTB ratio for a given deal. Source: Compustat/SDC.

LARGE_SIZE_PEER: A dummy equal to 1 for all peers whose logarithm of total assets is above the median peer logarithm of total assets for a given deal. Source: Compustat/SDC.

HIGH_CASH_PEER: A dummy equal to 1 for all peers whose cash-to-assets ratio is above the median peer cash-to-assets ratio for a given deal. Source: Compustat/SDC.

HIGH_LEVERAGE_PEER: A dummy equal to 1 for all peers whose total debt-to-assets ratio is above the median peer total debt-to-assets ratio for a given deal. Source: Compustat/SDC.

HIGH_MB_ACQUIRER: A dummy variable equal to 1 if the acquirer's MTB ratio is above the median peer MTB ratio in a given industry in a given year. Source: Worldscope/SDC.

LARGE_SIZE_ACQUIRER: A dummy variable equal to 1 if the acquirer's logarithm of total assets is above the median peer logarithm of total assets in a given industry in a given year. Source: Worldscope/SDC.

HIGH_CASH_ACQUIRER: A dummy variable equal to 1 if the acquirer's cash-to-assets ratio is above the median peer cash-to-assets ratio in a given industry in a given year. Source: Worldscope/SDC.

HIGH_LEVERAGE_ACQUIRER: A dummy equal to 1 if the acquirer's total debt-to-assets ratio is above the median peer total debt-to-assets ratio in a given industry in a given year. Source: Compustat/SDC.

HIGH_R&D: A dummy equal to 1 for all 4-digit SIC industries whose R&D-to-assets ratio is above the median R&D-to-assets ratio in a given year. Source: Compustat.

HIGH_TECH: Dummy equal to 1 if the target is in one of the following 3-digit SIC industries: 281–289, 291, 348, 351, 353, 355–357, 361, 362, 365–367, 371, 372, 376, 381, 384, 386, 737, 871, 873, 874. Source: National Science Foundation.

HIGH_MB: A dummy equal to 1 for all 4-digit SIC industries whose MTB ratio is above the median MTB ratio in a given year. Source: Compustat.

SP(SALES): Degree of specialization of an industry in a given country, computed as the share of the industry's sales in its country's total sales, divided by the average share of sales in the industry across all countries, aggregated across public firms in each country–industry. Source: Worldscope and own calculations.

SP(EMP): Degree of specialization of an industry in a given country, computed as the share of the industry's employment in its country's total employment, divided by the average share of employment in the industry across all countries, aggregated across public firms in each country–industry. Source: Worldscope and own calculations.

TAKEOVER_DUMMY: A dummy equal to 1 if the peer is a target of a deal that takes place within 1 year, and 0 otherwise. Source: SDC.

INDUSTRY_HHI: Sales-based 4-digit SIC industry Herfindahl–Hirschman index. Source: Compustat.

INDUSTRY_PROFIT_MARGIN: 4-digit SIC industry average of operating income (EBIT)/sales. Source: Compustat.

PRODUCT_MARKET_FLUIDITY: Product market fluidity measure of Hoberg et al. (2014). Source: https://hobergphillips.tuck.dartmouth.edu/.

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