Do Serial Acquirers Bite Off More Than They Can Chew?

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ABSTRACT

We show that post-merger integration costs, significantly reduce serial acquirers' long-term performance. This reduction in performance occurs after controlling for Tobin's Q, Managerial ability, and Overconfidence. Due to relatively lower integration costs, serial acquirers begin an acquisition series by outperforming single acquirers. The integration costs induced by multiple acquisitions in an acquisition series result in serial acquirers' underperforming single acquirers and ultimately precipitating the end of an acquisition series. Our findings underscore the need for serial acquirers to plan their post-merger integration to minimize the loss in shareholder's wealth.

Keywords: Serial acquirers, Mergers and Acquisitions, Post-Merger Integration,
         CEO Overconfidence

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Introduction

Although prior research provides ample evidence that, on average, acquisitions destroy acquirers' shareholder wealth, many firms continue to engage in multiple acquisitions that exhibit a pattern of declining cumulative abnormal returns (*CARs*) over successive acquisitions (Fuller, Netter, and Stegemoller, 2002; Karolyi and Taboada, 2015). Previous research offers the two main explanations: diminishing attractiveness of the firm's investment opportunity set (Klasa and Stegemoller, 2007) and overconfident CEOs who tend to overestimate the quality of their acquisitions (Billett and Qian, 2008; Doukas and Petmezas, 2007).[1] The performance of serial acquirers is also impacted by disruptions related to financing, customer and supplier relations, cultural differences between acquirer and target firms, and human resources, collectively referred to as post-merger integration costs. While the importance of post-merger integration has been recognized among scholars in management and practitioners, it has received less attention in explaining serial acquirers' declining long-term performance.[2] This research is a step in that direction.

Post-merger integration (hereafter, *PMI*) costs are only gradually reflected in acquirers' long-term abnormal stock performance.[3] Detecting the effect of *PMI* related costs is challenging as the long-term performance contains the effects of learning and organization ability (Aktas et al., (2011, 2013); Li, Qui, and Shen, 2018), quality of the investment opportunities (Klasa and Stegemoller, 2007), and the negative effects of CEO overconfidence (Billett and Qian, 2008), among other factors. In addition, one must avoid the problem of overlapping returns that arise from future acquisition announcements.

Prior studies that examine the impact of *PMI* costs either focus exclusively on announcement period returns (Kengelbach et al, 2012, Morillon, 2020), assume that the announcement period returns are an unbiased predictor of the long-term returns (Aktas et al., 2009), or provide conflicting evidence on the effect of learning versus *PMI* costs using time between successive deals as a metric of frequency of acquisitions (Aktas et al., 2009; Kengelbach et al., 2012). Instead of focusing on time between successive deals, we use the number of acquisitions and relative size of targets acquired in the prior 24 months as proxies for acquisition frequency.[4] To isolate the effect of *PMI* costs on long-term stock performance, we use the managerial ability index developed in Demerjian, Lev, and McVay (2012) to control for the positive effects of learning and the management group's prior trading behavior on their own

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[1] Aktas et al. (2009, 2011) provide another interesting explanation involving rational but risk-averse CEOs who learn from their prior deals. Such CEOs tend to evaluate future deals with higher precision. The decreased uncertainty in valuation causes them to bid more aggressively, resulting in a greater wealth transfer from acquirers to target firms.

[2] See Shrivastava (1986), Meyer (2008), and Hitt, Hoskisson, and Ireland (1990) for studies in the management discipline and Kengelbach et al (2012) and Aktas et al (2013) for evidence related to serial acquirers. For practioners involvement, see https://www.mckinsey.com/business-functions/m-and-a/how-we-help-clients/integration#, and https://www.bcg.com/en-gb/capabilities/mergers-acquisitions-transactions-pmi/post-merger-integration.

[3] See (Renneboog & Vansteenkiste, 2019) for a recent survey of the mergers and acquisitions literature.

[4] To detect the costs related to post-merger integration, we follow Klasa and Stegemoller (2007) and define a serial acquirer as an acquiring firm that consummates multiple acquisitions within a window from -24 months to +24 months surrounding the current acquisition. Thus, a single acquirer is an acquiring firm that does not consummate any other acquisition within a window from -24 months to +24 months surrounding the current acquisition. Our definition ensures that the initial period of hiatus avoids investor bias in assessing the likelihood of an acquirer to be a serial acquirer.

firm's shares to control for overconfidence.[5] Unlike findings in earlier studies (Kengelbach et al., 2012; Billet and Qian, 2008), we find that serial acquirers begin an acquisition series by outperforming single acquirers due to relatively lower integration costs. As an acquisition series progresses, serial acquirers' long-term performance is significantly eroded by post-merger integration costs. Due to the number of acquisitions consummated in the preceding 24-months, and to a lesser extent, the cumulative deal size, the integration costs cause serial acquirers to underperform single acquirers and ultimately end an acquisition series.

Our sample of 14,746 consists of domestic mergers and acquisitions with announcement dates between 1984 and 2016. We classify 4,986 acquisitions as single and 9,760 acquisitions as part of 3,080 serial acquiring series. Using a logit specification, we find that the likelihood of an acquirer to become a serial acquirer is positively related to market reaction on acquisition announcement and the acquirers' stock returns over the year leading up to the first acquisition in an acquisition series. Importantly, managerial ability or overconfidence does not affect the likelihood of an acquirer becoming a serial acquirer.

To understand why some firms stop their acquisition program after consummating their first acquisition, we use a sub-sample of 4,986 single acquirers' acquisitions and 3,080 serial acquirers' first acquisitions in an acquisition series and compare their stock performance. Stock performance is measured by the average abnormal buy-and-hold returns during a 5-day window around the announcement date (hereafter, *ANN_BHAR*) and during the 24-month period after deal completion (hereafter, *LONG_BHAR*). We find that *ANN_BHAR* (*LONG_BHAR*) of a single acquirer's deal is significantly lower at the 10% level (at 1% level) than that of the first acquisition of a serial acquirer.[6] Single acquirers who consummate targets with a larger market capitalization are found to perform significantly worse (at 1% level) due to higher costs of assimilating a larger target firm to form a combined entity. Our results provide an economic reason for acquirers to continue making acquisitions.[7]

Next, we examine the impact of acquisition history on acquirers' stock performance. Prior studies characterize acquisition history in terms of time between two successive deals (Hayward, 2002; Aktas et al., (2009, 2011, 2013); Kengelbach et al., 2012), deal count (Kengelbach et al., 2011; Billet and Qian, 2008), the number of acquisitions consummated in a given period (Kengelbach et al., 2011; Malmendier, Moretti, and Peters, 2018), and deal size (Kengelbach et al., 2011). In addition to the above measures, acquisition history has also been characterized in terms of acquisition patterns (Macias, Rau, and Stouraitis, 2016; Morillon, 2020). Based on our definition of an acquisition series, we use the number of acquisitions made in the previous 24 months (hereafter, *PRE_24_NUM*) and cumulative deal size (hereafter, *PRE_24_RELATIVE_SIZE*) to represent acquisition history.

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[5] While measuring overconfidence, we use the trading behavior of management groups due to their collective involvement in M&A decisions. Consequently, our overconfidence measure reflects managerial overconfidence rather than CEO overconfidence as in Billet and Qian (2008).

[6] To mitigate the influence of overlap of acquisitions following the first acquisition, we compute *LONG_BHAR* using a calendar time window starting the day after the completion of the first acquisition to the event date: either announcement date or effective date of the second acquisition within an acquisition series, whichever comes first within a 24-month post-acquisition period.

[7] Few studies examine the relative performance of a single versus a potential serial acquirer at the start of an acquisition series. Guest et al. (2004) and Billet and Qian (2008) do not observe a significant difference in the long-term performance and announcement period performance, respectively. Our results are consistent with Macias, Rau, and Stouraitis (2006) who find that acquirers continue making more acquisitions if the market reaction is positive.

After controlling for Tobin's Q, managerial ability, and overconfidence, we find that, at the time of announcement, *PMI* costs are related only to the cumulative deal size during the 24 months preceding the current announcement. As mentioned in Renneboog and Vansteenkiste (2019), we find that the long-term performance is negatively related to both measures of acquisition history. These findings attest to the underestimation of *PMI* costs at the time of announcement. As expected, we find that stock performance reacts positively to managerial ability index and negatively to overconfidence, regardless of the proxy used for acquisition frequency (Cui and Leung, 2020).

To understand whether *PMI* costs are responsible for ending an acquisition series, we examine the stock performance of the final acquisitions in an acquisition series. We compare the stock performance of a single acquirer's transaction and that of a serial acquirer's final deal. The results show that *LONG_BHAR* of a serial acquirer's last acquisition of an acquisition series is significantly lower (at the 1% level) than that of a single acquirer's transaction. Using the overall sample, we find that a serial acquirer's last acquisition of an acquisition series is significantly lower than all other acquisitions for both *ANN_BHAR* and *LONG_BHAR*. As noted earlier, we continue to observe a similar underestimation of *PMI* costs at the time of announcement. These results hold after controlling for Tobin's Q, managerial ability, and overconfidence. Overall, our results indicate that higher costs due to post-merger integration contribute to the declining performance of serial acquirers over an acquisition series and ultimately precipitate the end of an acquisition series.[8]

We contribute to the serial acquirer literature in two important ways. First, we show that post-merger integration costs are a significant factor that negatively impacts shareholders' wealth. As in prior studies, we use the number of past acquisitions and the cumulative relative size of targets as proxies for post-merger integration efforts (Kengelbach et al., 2012; Malmendier, Moretti, and Peters, 2018). The two distinguishing features of our study are: (a) we control for Tobin's Q, overconfidence, managerial ability, and variables that are known to be correlated with prior acquisition activity and acquisition performance, and (b) in addition to short-term performance, we examine long-term performance because the effects of post-merger integration only gradually become available (Renneboog and Vansteenkiste, 2019). We show that the short-term market reaction does not fully reflect the long-term loss in shareholders' wealth due to post-merger integration costs.

Second, we examine the short and long-term performance of serial acquirers at the time of the first acquisition, within acquisition series, and the last acquisition, in relation to the performance of single acquirers. In contrast to prior studies (Guest, Cosh, Hughes, & Conn, 2004; Ismail, 2008; Kengelbach et al, 2012; Billett and Qian, 2008), we show that serial acquirers outperform single acquirers at the time of the first acquisition. The long-term performance of serial acquirers declines as they accumulate a history of acquisitions. Although CEO hubris and managerial ability are shown to be significant factors that influence performance, the decline in long-term performance is significantly related to the number of past acquisitions and the cumulative relative size of targets.

Section 2 contains a summary of the related literature and hypotheses. Section 3 contains the description of our sample and univariate results. We present our main analysis in Section 4 and make our concluding remarks in Section 5.

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[8] We tested the regressions using non-overlapping returns to compute *LONG_BHAR*. The coefficient on *PRE_24_RELATIVE_SIZE* loses significance but the *PRE_24_NUM* retains the same level of significance.

Related Literature and Hypotheses

Our research examines whether the costs that arise during the post-merger integration phase significantly affects acquirers' shareholder wealth. A simple Google search using the phrase 'post-merger integration' indicates the presence of an entire industry that stands ready to guide acquirers through the post-merger phase. Graebner, Heimeriks, Huy, and Vaara (2017) point out that a literature review identified over 300 articles related to post-merger integration since 1985. A common starting point for an acquirer to engage in M&A activity is to present an 'Investment Thesis' to the board of directors, the management team, and employees to maintain transparency and obtain feedback. Successful serial acquirers have been shown to invest large amounts of leadership time and money in advance of any deal.[9] If serial acquirers consummate multiple (possibly large market capitalization) acquisitions in a short period, they may not have the necessary resources to successfully plan and integrate target companies.

Admittedly, we are not aware of any direct measures of the costs associated with post-merger integration. This is because the process of integration involves many aspects of a business that come together: strategic, financial, social, and organizational culture, to name a few. Malmendier, Moretti, and Peters (2018) use industry relatedness, relative size, and hostility of the takeover as proxies of post-merger integration costs to explain winners' poor performance. Using a global sample of 20,959 M&A transactions, Kengelbach et al. (2012) find that a longer waiting time between two consecutive transactions and reduced relative deal size are important factors that mitigate integration costs. In terms of the proxies we use, these translate to making fewer acquisitions and involving targets with relatively smaller market capitalization. There are two important factors that impact the costs during the integration phase. An overconfident management group may misjudge their ability and consummate more acquisitions than an acquirer can assimilate.[10] In contrast, an able management team is likely to facilitate smoother integration to form the combined entity. To isolate the effects from post-merger integration costs, we control for management's overconfidence and managerial ability in our tests related to post-merger integration. We develop our hypotheses regarding the impact of post-merger integration costs on acquirers' shareholder wealth in the following contexts: a) at the start of an acquisition series, (b) when acquirers accumulate a history of acquisitions, and (c) at the end of an acquisition series.

Start of an acquisition series: Single versus Serial Acquirers' Performance

To understand the economic reason for some acquirers to continue making further acquisitions, we need to compare the performance of single versus serial acquirers at the time of the serial acquirers' first acquisition in an acquisition series. To our knowledge, the two studies that examine the first acquisition in an acquisition series find that single acquirers either outperform serial acquirers (Kengelbach et al., 2012) or perform similar to each other (Billet and Qian, 2008). Both these studies make their inferences based on announcement period declining cumulative abnormal returns. Because *PMI* costs are gradually reflected in long-term performance, it is not clear if the announcement period returns fully capture the *PMI* costs. We

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[9] https://www.bcg.com/en-us/publications/2014/mergers-acquisitions-unlocking-acquisitive-growth

[10] Using the options-based measure of CEO overconfidence introduced by Malmendier and Tate (2005), Kaplan, Sorensen, and Zakolyukina (2020) show that overconfident CEOs have lower analytical skills and cognitive ability, are worse listeners and feedback seekers: qualities that are necessary during the post-merger integration phase.

examine the impact of serial acquirers' first acquisition by examining the long-term buy-and-hold abnormal returns. Other studies provide an overall performance comparison between single versus serial acquirers but not the first acquisition of a serial acquirer in an acquisition series. Considering that serial acquirers experience declining cumulative abnormal returns (*CARs*) over successive acquisitions, it is not surprising that many studies find that, on average, single acquirers outperform serial acquirers (Guest, Cosh, Hughes, and Conn (2004); Ismail, 2008; and Kengelbach et al., 2012).

Some studies find there is an economic motivation for acquirers to become serial acquirers. Bradley and Sundaram (2006) find that the buy-and-hold return to a portfolio of frequent acquirers of relatively small targets was over 130% higher than the return to a portfolio of infrequent acquirers of relatively large targets during the decade of the 1990s. The finding in Bradley and Sundaram (2006) that serial acquirers outperform single acquirers when they consummate smaller targets is indicative of the lower costs incurred by serial acquirers during the post-merger integration phase. Using U.K. data, Rovit and Lemire (2003) find that serial acquirers, regardless of economic cycles, were 1.7 times more successful than those firms who were not as frequent, (i.e., between 1 - 4 deals). However, these studies do not address the first acquisition in an acquisition series.

Our definition of an acquisition series is best suited to test the impact of relative size (and hence *PMI* costs) of the first acquisition. First, in the absence of no acquisition activity in the preceding 24-months, the definition ensures that the performance serial acquirers' first acquisition in an acquisition series is not influenced by integration costs associated with a history of acquisitions. Second, because investors do not know if an acquirer will continue making acquisitions after the first acquisition, the announcement period reaction or the non-overlapping, buy-and-hold returns during the 24-months after the first acquisition is not influenced by investor's expectations based on prior acquisition activity or announcements of acquisitions after the first acquisition.[11] Based on the findings in Bradley and Sundaram (2006), we conjecture that acquiring firms that incur higher costs of integrating a target (possible with a larger in market capitalization) may be deterred from making further acquisitions. For example, they may become single acquirers, while others go on to make more acquisitions (i.e., serial acquirers) due to their relatively lower costs of post-merger integration. We state our first hypothesis below:

H1: All other things being equal, the stock performance of a single acquirer underperforms the first acquisition of a serial acquirer in an acquisition series. The underperformance is more pronounced when targets are relatively larger in market capitalization.

Acquisition History: Organizational Learning and Post-Merger Integration

Using organizational learning theory, Hayward (2002) points out that learning may not be effective if the time between two successive deals is very short or very long. A very short interval is not conducive for assimilating experience that can be transferred to enable better performance of the next deal. A very long interval may result in a loss of organizational memory. Aktas et al. (2013) apply Hayward (2002)'s theory to model the impact of learning on the net effect of synergies and *PMI* costs and provide evidence that, regardless of very short or very long-time interval between two successive deals, learning gains (i.e., synergies net of *PMI* costs)

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[11] Loderer and Martin (1990) point out that partial anticipation by investors causes estimation bias and makes it difficult to interpret both short and long-term performance.

accrue to acquirers' shareholders. Acquirers with more experience become skillful in identifying targets, performing pre-merger due diligence, and managing post-merger integration efficiently, resulting in positive firm performance (Aktas, de Bodt, & Roll, 2011, 2013; Haleblian & Finkelstein, 1999; Kengelbach et al., 2012). In support of the learning model, Haleblian and Finkelstein (1999) find an overall U-shaped relation between acquirers' stock performance during the announcement period and acquisition experience.

In the presence of organizational learning, the acquirer learns to harness synergies and manage post-merger integration efficiently. Thus, the positive effect of learning should be observed in higher abnormal buy-and-hold returns following the current acquisition. Because *PMI* costs are expected to be negligent in the presence of learning, once managerial ability (i.e., proxy for learning) is controlled, we should not expect the measures of acquisition history to impact the abnormal buy-and-hold returns.

H2a: All other things being equal, after controlling for managerial ability the abnormal stock performance of an acquirer is not related to the acquirer's acquisition activities during the prior 24-month period.

Hayward (2002) mentions that learning is likely to be impaired if prior acquisitions are too similar or dissimilar to each other. Although, our measures of acquisition history do not specify the similarity of prior acquisitions, we expect the effect of learning impairment to be reflected in poor performance. A serial acquirer who consummates too many acquisitions in a short period may not have enough time and resources to assimilate each target firm into a combined entity.[12] It is estimated that more than 50% of all transactions fail due to deficiencies in post-merger integration and that larger and many deals made in a short time adversely affects firm performance (Alexandridis, Fuller, Terhaar, & Travlos, 2013; Habeck, Kröger, & Träm, 2000; Shrivastava, 1986).[13]

Using the learning theory in Hayward (2002) to explain the declining performance of successive deals made by serial acquirers, Aktas et al (2009) show that when rational (risk averse) CEOs learn from their prior deals, they tend to value their next target with more precision. The lower uncertainty causes them to bid aggressively, resulting in a greater wealth transfer from acquirers to target firms. The underlying premise of the Aktas (2009, 2011) studies depend on Bayesian updating of priors, implying that investors' reaction to deal announcement is an unbiased predictor of potential synergies and *PMI* costs.

Renneboog & Vansteenkiste (2019) point out that announcement period reaction does not fully capture the effect of *PMI* costs. Because prior research on learning only examines announcement period returns, it is likely that the *PMI* costs have been underestimated. Consequently, we use long-term buy-and hold abnormal returns to examine the effect of *PMI* costs.

Billot and Qian (2008) show that overconfident CEOs tend to consummate many deals and their hubris results in poor long-term performance. A working paper by Kaplan, Sorensen, and Zakolyukina (2020) find that overconfident CEOs lack general ability that we expect will be useful in mitigating *PMI* costs. Consequently, after controlling for managerial ability and CEO overconfidence, we expect the gradual effect of higher *PMI* costs due to the acquirer's

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[12] Because of the complexities involved in integration, many consulting firms provide their services to acquiring firms. For example, see https://www.mckinsey.com/business-functions/m-and-a/how-we-help-clients/integration#, and https://www.bcg.com/en-gb/capabilities/mergers-acquisitions-transactions-pmi/post-merger-integration.
[13] See Hitt et al. (1990) and Meyer (2008) for issues related to the implicit costs of *PMI*.

acquisition activities during the prior 24-month period to result in poor long-term performance. We state the alternate hypothesis below:

H2b: All other things being equal, after controlling for managerial ability and overconfidence, the abnormal stock performance of an acquirer is negatively related to the acquirer's acquisition activities during the prior 24-month period.

End of an acquisition series

The declining performance of successive acquisitions in an acquisition series implies that the last few acquisitions perform worse than prior acquisitions. Klasa and Stegemoller (2007) find that the abnormal returns during the one year surrounding the first acquisition is significantly higher than the middle acquisitions. The performance during the year after the last acquisition is significantly negative (at the 1% level). They show that a contraction of investment opportunities causes later acquisitions in a series to perform worse. Using deal order to denote acquisition history, Billet and Qian (2008) and Doukas and Petmezas (2007) find that deals made by acquirers with more history of acquisitions perform relatively worse. They find evidence that points to CEOs' self-attribution bias as a cause for the deterioration of acquisition performance.

We argue that *PMI* costs are also an important reason for the declining performance of serial acquirers. Financial media cites the cost of post-merger integration as a reason for poor performance and one of the top mistakes that companies make (Finkelstein 2016). If acquirers underestimate these costs, they are likely to exhaust all their available resources and reach the end of an acquisition series. In such an instance, the last few acquisitions in an acquisition series should experience stronger underperformance compared to other acquisitions in an acquisition series. Li, Qui, and Shen (2018) show that acquirers with a lower organization capital manage post-merger cost and synergies poorly and achieve significantly lower post-merger operating and stock performance, than acquirers with higher organization capital acquirers. Based on the findings in earlier studies, we state our third hypothesis:

H3: All other things being equal, the stock performance after the last acquisition in an acquisition series is worse compared single acquirers due to higher post-merger integration costs.

Data and Variable Definition

Data

The sample of acquisitions comes from the Securities Data Company's (SDC) U.S. Mergers and Acquisitions Database. We select domestic mergers and acquisitions with effective dates between 1984 and 2016.[14] We require that (1) the acquirers are publicly traded U.S. companies on the AMEX, Nasdaq, or NYSE and are covered by CRSP and Compustat during the event window, (2) the acquisitions must not be spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, or privatizations, (3) the transaction is completed, (4) the acquirers owned 100% of the shares of the target after deal consummation, (5) the target or acquirer must not be an American depository receipt (ADR), Real Estate Investment Trust (REIT), or closed-end fund, (6) the deal has

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[14] We exclude acquisitions consummated in 2017 and 2018, but we use that information to determine whether an acquirer is a single or serial acquirer, as our definitions require looking at subsequent M&A activities.

transaction value reported with a transaction value less than 1% of acquirer's value[15], and (7) the number of days between the announcement and completion dates is greater or equal to zero. To measure CEO overconfidence, we use the insider trading data from Thomson Reuters Insider Filing Data Feed (IFDF), which includes all insider trades reported to the SEC. We limit our sample with CEO overconfidence measure to common stocks (CRSP share code of 10 and 11) that are traded on the NYSE, AMEX, or NASDAQ from 1986 to 2016. Following Lakonishok and Lee (2001), we remove transactions with less than 100 shares, transactions with prices more than 20% different from the CRSP closing price, and transactions with more than 20% of shares outstanding traded. In addition, to eliminate trivial transactions, we only include transactions with Thomson Financial data item cleanser equal to "R" or "H", which indicate that the transaction is verified or Thomson Financial has a high degree of confidence in the transaction. The managerial ability index developed by Demerjian, Lev, and McVay (2012) is obtained from Prof. Demerjian's personal website.[16]

Table 1, Panels A and B show the distribution of single transactions and acquisitions within an acquisition series by year and by industry sector.[17] See Table 1 in the Appendix. All tables are in the appendix.

Table 1, Panel A shows that the overall sample consists of 14,746 acquisitions. Of these, 4,986 acquisitions are transactions by single acquirers and the remaining 9,760 acquisitions are part of 3,080 acquisition series consummated by serial acquirers. Table 1, Panel B shows that there are multiple-acquisition activities across all industry sectors; 48.75% of the acquisitions in the sample are concentrated in the manufacturing sector and 26.02% in services sector. Overall, the distributions of acquisitions across industries are similar for single and serial acquirers. Table 2 indicates that there is a total of 3,080 acquisition series containing 9,760 serial acquisitions. See Table 2 in the Appendix.

The number of acquisition series range from 1,624 series containing 2 acquisitions each (52.7% of total number of series) to 56 series containing 11 or more acquisitions each (1.8% of total number of series). The mean (median) length of an acquisition series ranges from 10.29 (9.43) months for a series containing two acquisitions to 6.89 (7.15) years for a series containing 11 or more acquisitions. It takes a serial acquirer an average of less than 3.15 (4.63) years to consummate six (nine) or less acquisitions, i.e., an average of two acquisitions per year.

Variable Definition

Primary Variables of Interest

We denote a single acquirer (*SINGLE*) using an indicator variable equal to one if a firm makes no other acquisitions during a period of 24-months prior to and after the current acquisition consummation date, and zero if it is a serial acquirer. The dummy variable *SERIAL* is equal to one if an acquirer is not a single acquirer, and zero otherwise. In addition, the dummy variable *SERIES_START* (*SERIES_END*) is equal to one if the acquisition is the first (last) acquisition in an acquisition-series by a serial acquirer, and zero otherwise. Following Malmendier et al. (2018), we define two variables that capture the acquisition history during 24-

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15 Following Moeller, Schlingemann, and Stulz (2004), the acquirer's value is defined as the sum of the market value of equity, long-term debt, debt in current liabilities, and the liquidating value of preferred stock.

[16] https://peterdemerjian.weebly.com/managerialability.html

[17] We use the Fama and French (1997) 12 industry classification scheme.

month period preceding a current acquisition. The variable *PRE_24_NUM* denotes the number of acquisitions consummated in prior 24 months of the current acquisition. The variable *PRE_24_RELATIVE_SIZE* denotes the sum of the relative sizes of acquisitions consummated in prior 24 months of the current acquisition. These two variables that describe acquisition history serve as proxies that induce costs related to post-merger integration.

Performance variables

Following Oler (2008) and Savor and Lu (2009), we use buy and hold returns and matching firms to examine acquirers' stock performance. To measure a benchmark return, we construct the industry, size, and book-to-market portfolios. We first group firms that had no acquisitions in the prior three years in the same industry into five size portfolios. We then select the best matches on book-to-market from the same size quintile as the acquirer's matching firms. We select up to 24 firms for each acquirer and then select the top four firms as a matching portfolio. Instead of holding a matching portfolio unaltered throughout the examination period, we update each acquirer's matching portfolio every year at the beginning of July. Abnormal buy-and-hold returns are computed by subtracting the average buy-and-hold returns of the acquirer's top four matching firms from the acquirer's buy-and-hold returns over the same holding period. Let $\overline{R_{i,t}}$ denote the mean return of the acquirer i's matching portfolio at time t and $R_{i,t}$ denotes the raw returns of the acquiring firm i at time t. The abnormal buy-and-hold returns is computed for a holding period t_1 to t_2, as follows:

$$BHAR_{t1,t2}^i = \prod_{t=t1}^{t2}\left(1 + R_{i,t}\right) - \prod_{t=t1}^{t2}\left(1 + \overline{R_{i,t}}\right) \tag{1}$$

To compute announcement period abnormal buy-and-hold returns (*ANN_BHAR*), we assume a 5-day announcement period window surrounding the event date, i.e., $t_2 - t_1 = 5$ days. Based on our definition of a serial acquiring series, the long-term abnormal buy-and-hold returns (*LONG_BHAR*) is computed for $t_2 - t_1 = 24$ months following the completion of an acquisition. To avoid excluding delisted acquirers, we follow Beaver, McNichols, and Price (2007)'s recommendation on including delisting returns.

3.2.3 *Control Variables*

Following Harford (2012), we include several control variables that are standard in the literature (Fuller, Netter, & Stegemoller, 2002; Moeller, Schlingemann, & Stulz, 2005). Specifically, we include cash, market-to-book ratio, Tobin's Q, NOA, prior 12-months price run up, relative size of the target, accruals, leverage, relative size of the target, and stock acquisition, if the target is a public company and the acquirer and target are from different industries. The construction of these variables is defined in Appendix-A. Several studies have shown that CEOs' self-attribution causes them to consummate poor quality targets resulting in destroying shareholder wealth. To estimate the extent of loss in shareholder wealth due to post-merger integration, we control for CEO overconfidence. Following Ataullah, Vivian, and Xu (2018) and Billett and Qian (2008), we measure CEO overconfidence with net purchase ratio (NPR), which is based on the extent of CEOs' trading of their own companies' shares. The net purchase ratio of acquirer i before acquisition announcement j is defined as

$$NPR_{ij} = \frac{Purchase_{ij} - Sale_{ij}}{Purchase_{ij} + Sale_{ij}}$$

where Purchase$_{ij}$ (Sale$_{ij}$) is the total number of shares purchased (sold) by the CEO of an acquirer *i* during the six months (180 days) before the announcement of an acquisition *j*. Following Billet and Qian (2008), we apply a time-series control and calculate adjusted NPR (NPR_ADJ) by subtracting the *NPR* measured from days [−360_−180) from the NPR measured from days [−180, 0) before the announcement date. Kaplan, Sorensen, and Zakolyukina (2020) show that, in general, overconfident CEOs are short on ability. CEOs who have a well thought out plan, who listen to feedback, are good at communicating their vision to various stakeholders, can process complex business situations, and have the ability to act fast, are likely to minimize the costs related to post-merger integration. We control for managerial ability by using the ability index created by Demerjian, Lev, and McVay (2012).

Descriptive Statistics and Univariate Comparisons

Table 3, Panel A presents the descriptive statistics for the full sample. The mean *LONG_BHAR* is -7.7% with p<0.001, suggesting that, on average, acquirers underperform in the post-acquisition period. The mean value of the serial acquirer dummy is 0.662, indicating approximately 66.2% of the acquisitions are made by serial acquirers. See Table 3 in the Appendix.

Table 3, Panel B contains the univariate statistics of the various characteristics of single and serial acquirers. The average *LONG_BHAR* of the first acquisition by a serial acquirer is significantly greater (at the 1% level) than that of a single acquirer (column Difference (2-1)). In contrast, the average *LONG_BHAR* after the last acquisition is significantly lower (at the 1% level) than the first acquisition by either a serial or a single acquirer's transaction (column Difference (4-3) and column Difference (4-1)). This declining performance over the span of an acquisition series is well-documented in the literature.

The average relative deal size of single transactions (29.5% in column (1)) is significantly larger than those by serial acquirers (19.6% in column (2)). This result suggests that single acquirers concentrate their resources on one relatively larger target, while serial acquirers disperse their resources to multiple target companies. As in Klasa and Stegemoller (2007), we find that Tobin's Q is significantly higher at the beginning of an acquisition series than at the end (-0.078 in column Difference (4-3)). Serial acquirers are relatively larger than single acquirers measured by *LOG_MARKET_CAP* (0.593 in column Difference (2-1)). Comparing at the beginning of an acquisition series, a serial acquirer has large market cap towards the end of the series (0.272 in column Difference (4-3)). On average, serial acquirers have significantly lower *CASH*, higher *ACCRUALS*, greater *MOMENTUM* of stock returns during a 12-month period prior to an acquisition announcement, and more *LEVERAGE* than single acquirers (in column Difference (2-1)).

At the time of the first acquisition, CEO overconfidence measured by the average net purchase ratio (*NPR*) is significantly greater for serial acquirers than single acquirers (column Difference (3-1)). There is no significant difference in *NPR* for a serial acquirer at the time of the first and at the time of the last acquisition. In terms of *NPR_ADJ*, the CEO overconfidence is significantly lower for the last acquisition relative to the first acquisition of a serial acquirer. There is no significant difference in CEO ability between single or serial acquirers. Comparing with single acquirers, serial acquirers make fewer *STOCK* offers, engage in smaller (*RELATIVE_SIZE*) target deals, and acquire more *PRIVATE* targets (column Difference (2-1)).

Multivariate Analysis

Analysis of the First Acquisition in an Acquisition Series

We start our analysis by first examining the factors that induce an acquirer to become a serial acquirer. According to our definition of an acquiring series, there are no acquisitions consummated by an acquirer during the 24 months preceding the first acquisition. Consequently, the investors do not know whether an acquirer will be a single or serial acquirer. We use the following logit specification:

$$SERIAL_{i,j} = \alpha + \beta_i ANN\_BHAR + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j} \quad (2)$$

where, *SERIAL* is an indicator variable equal to one if an acquirer is a serial acquirer, and zero otherwise, and *X'* and *Y'* denote controls for acquirer and deal characteristics, respectively. The results are reported in Table 4, Panel A. See Table 4 in the Appendix.

We find that the likelihood of an acquirer to continue making further acquisitions is significantly positive (at the 5% level) related to the announcement period buy-and-hold abnormal returns, higher stock price run up during the prior 12-month period (*Momentum*), and if the target has relatively smaller in market capitalization (*RELATIVE_SIZE*). Interestingly, CEO overconfidence (*NPR* and *NPR_ADJ*), managerial ability (*MA_SCORE*), or investment opportunities (*Tobin's_Q*) are not significant determinants of whether an acquirer will become a serial acquirer.

Next, we examine the relative performance of single acquirers' deal versus serial acquirers' first acquisition in an acquisition series (Hypothesis H1). We use the regression specification in equation (3) and report the results in Table 4, Panel B.

$$Performance_{i,j} = \alpha + \beta_i SINGLE + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j} \quad (3)$$

where, *SINGLE* is an indicator variable equal to one if an acquirer is a single acquirer; other controls variables are similar in model (2). For the dependent variable denoted as *Performance*, we use *ANN_BHAR* for announcement period performance and *LONG_BHAR* for long-term performance. Hypothesis H1 predicts that the first acquisition of a serial acquirer outperforms that of a single acquirer's transaction, i.e., $\beta_i < 0$.

Table 4 Panel B shows multivariate regression results with a subsample of single acquisitions and serial acquirers' first acquisitions within an acquisition series. Table 4 Panel B, Models (1) and Model (3) show that the coefficient on *SINGLE* is -0.0044 (significant at 5% level) when the dependent variable is *ANN_BHAR* and is -0.1315 (significant at 1% level) when the dependent variable is *LONG_BHAR*. Therefore, the first acquisition for serial acquirers outperforms the first acquisition for single acquirers. To understand the reason for single acquirers' underperformance relative to serial acquirers, we interacted *SINGLE* with the *RELATIVE_SIZE* of the first acquisition. Model (4) shows that the coefficient on the interaction term is significantly negative (at the 5% level) when the dependent variable is *LONG_BHAR*. A single acquirer's long-term underperformance is exacerbated, when acquiring relatively larger targets.

Table 4, Panel C presents multivariate regression results using the overall sample of acquisitions to avoid look ahead problem. Column (1) contains the result for the announcement period performance (*ANN_BHAR*) of single acquirers' acquisitions (*SINGLE*) relative to all the acquisitions made by serial acquirers. Column (2) examines the announcement period performance of the first acquisition of a serial acquirer (*SERIES_START*) relative to all other acquisitions in the overall sample. Columns (3) and (4) present results for long-term performance

(*LONG_BHAR*) with the explanatory variables *SINGLE* and *SERIES_START*, respectively. In terms of a single acquirer's stock performance, the results in column (1) indicate that there is no significant difference between the announcement period stock performance for single acquirers' transactions and that of all acquisitions by serial acquirers, which is consistent with Billet and Qian (2008). Column (3) shows that the long-term performance (*LONG_BHAR*) of single acquirers' acquisitions is significantly lower (at 1% level) than the performance of all serial acquirers' transactions. Regarding a serial acquirer' first acquisition in an acquisition series, the results in columns (2) and (4) show that both the announcement period performance and the long-term performance of the first acquisition significantly outperform all other acquisitions in the overall sample. Based on our definition of an acquisition series, neither a single acquirer's deal nor the serial acquirer's first acquisition is preceded by an acquisition during a 24-month period. The superiority of a serial acquirers' performance indicates that relative to single acquirers, the serial acquirers have the incentive to continue making acquisitions.

A serial acquirer consummates at least one additional acquisition during the 24 months post-acquisition. The performance of such acquisitions is included in the computation of *LONG_BHAR*. If the serial acquirers' performance deteriorates after their first acquisition, then *LONG_BHAR* is biased downward because of overlapping returns. To remove the effect of overlapping returns, we also measure *LONG_BHAR* by computing returns over a period beginning on the consummation date of the first acquisition until the announcement or consummation of the second acquisition. Untabulated results for non-overlapping *LONG_BHAR* are consistent with results presented in Table 4 Panel B and Panel C. In summary, unlike findings in earlier studies, we show that the announcement period and long-term performance of the first acquisition of a serial acquirer outperforms that of single acquirers.[18] These results strongly support hypothesis H1.

Analysis of Acquisition History and Valuation Effects

An acquirer who continues to consummate acquisitions during the 24-month following the first acquisition in an acquisition series is defined as a serial acquirer. Each successive acquisition made by serial acquirers leaves a trail of acquisitions, i.e., acquisition history. Table 2 indicates that acquisition series can be of an average length as low as 10 months (involving two acquisitions) to more than six years (involving eleven or more acquisitions). To discern learning versus disruptions due to post-merger integration, we examine the impact of prior acquisition activity on stock performance. We use equation (4) below to test hypothesis H2:

$$Performance_{i,j} = \alpha + \beta_i History_{i,j} + X'_{i,t}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j} \quad (4)$$

where, the variable *History* represents the number of acquisitions (*PRE_24_NUM*) and the total relative size of the acquisitions (*PRE_24_RELATIVE_SIZE*) consummated during a 24-month period prior to the current acquisition; other controls variables are similar in models (2) and (3). Table 5 contains multivariate regression results for equation (4) regarding the impact of prior level and magnitude of acquisition activity on performance. Because the control variables are identical in the following regressions, we suppress them to highlight the findings in this study. See Table 5 in the Appendix.

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[18] Ismail (2008) finds that single acquirers outperform that of single acquirers during the announcement period. Billet and Qian (2005) do not find any significant difference between the announcement returns of serial and single acquirers. These authors examine the relative announcement period returns and not long-term performance. Our results are stronger because the long-term performance is consistent with the markets' expectations.

The momentum in acquisition consumption may indicate "learning by doing" and results in enhancing shareholder wealth. In contrast, if acquirers are not able to quickly integrate the combined entity, the acquisition momentum may disrupt operations and result in poor firm performance. In Table 5, Panels A and B contain results for announcement period returns and long-term performance, respectively. Table 5 Panel A indicates that *ANN_BHAR* is significantly negatively related to *PRE_24_NUM* in 2 out of 4 models and *PRE_24_RELATIVE_SIZE* in all the columns. After controlling for managerial ability and overconfidence (columns 3 and 5), the announcement period returns are not significantly affected by *PRE_24_NUM* but is significantly negatively related to *PRE_24_RELATIVE_SIZE* (columns 4 through 6). Consistent with earlier studies, we find that the investors react negatively to overconfidence as indicated by the significant negative coefficient on *NPR* and *NPR_ADJ* (at the 5% and 1% level, respectively). Although investors react positively to managerial ability, the coefficient is not statistically significant.

While the announcement period results are indicative of expected costs of post-merger integration, the costs are realized only in the longer term and are reflected in the *LONG_BHAR* variable. Table 5, Panel B, contains the results that show the impact of acquisition history on the relative long-term performance. Results in column 2 indicate that the *LONG_BHAR* is significantly negatively related to the cumulative relative size of prior acquisitions, *PRE_24_RELATIVE_SIZE,* at the 5% level. We find that the magnitude of the coefficient on *PRE_24_RELATIVE_SIZE* is approximately at the same level of significance, after controlling for managerial ability. Consistent with Cui and Leung (2020), we find that managers exert a positive effect on the long-term performance after an acquisition, as shown by the significant positive coefficients on *MA_SCORE* in columns 3 and 4. This result indicates that the announcement period reaction underestimates the positive effect of managerial ability.

Prior studies (Billet and Qian, 2008; Doukas and Petmezas, 2007) show that the post-merger performance is more negative when the acquirer has made more acquisitions in the past, i.e., a higher deal order. To associate the negative performance with CEO overconfidence, Billet and Qian (2008) examine CEOs' net purchases of their own firm's stock prior to an acquisition and show that the loss in CEOs' wealth is more when the order is higher. Because the negative performance is more pronounced for higher deal orders, the loss in CEOs' wealth could be due to CEO overconfidence and not costs related to post-merger integration. Consistent with earlier studies, our proxies for overconfidence loads are significantly negatively between 1% and 5% levels in columns 5 through 8. After controlling for overconfidence, we still find that *LONG_BHAR* is significantly negatively related to both proxies for prior acquisition activity that induce costs related to post-merger integration.[19]

Our results indicate that the long-term valuation effect of multiple acquisitions (both number and relative value) is significantly negative. If serial acquirers had become more skillful in identifying valuable acquisitions due to their history of consummating multiple acquisitions, we would have observed an increase in shareholders' wealth following the current acquisition. Due to the negative wealth effects that persist even after controlling for investment opportunities (*TOBIN_Q*), managerial ability (*MA_SCORE*), and CEO overconfidence (*NPR* and *NPR_ADJ*),

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[19] Upon examining the factors that cause more acquisitions during an acquisition series, after placing the appropriate controls, we find that the number and relative size of the acquisitions made in the previous 24-months to be the significant determinants of acquisitions momentum.

the evidence indicates that post-merger integration costs partially explain serial acquirers' poor acquisition performance. Our results lend support to the alternate hypothesis H1A.[20]

Analysis of the Last Acquisition in an Acquisition Series

In this section, we examine the valuation effects following the last acquisition in an acquisition series.[21] Based on our definition of an acquisition series, a serial acquirer consummates the last acquisition in a series if no further acquisitions are consummated in the next 24 months after deal completion. Recall that single acquirers underperformed serial acquirers at the time of the latter's first acquisition in an acquisition series (column (4) in Table 4 Panel B). Using the subsample of a single acquisitions and serial acquirers' last acquisitions within acquisition series, we compare the performance of a single acquirer to that of a serial acquirer's final acquisition in an acquisition series with the regression specification in equation (2). In Table 6 Panel A, columns (1) and (4) contain results for announcement period returns and long-term performance, respectively. See Table 6 in the Appendix. Results in columns (1) and (2) indicate that the market reaction during the announcement period indicates that serial acquirers' (last) performance is not significantly different from that of single acquirers' performance. Column (4) shows that *SINGLE* acquirer dummy loads significantly and positively, which suggests, on average, the long-term performance of single acquirers is superior to that of the last acquisition in an acquisition series made by serial acquirers. At the time of their first acquisition, serial acquirers outperform single acquirers partly due to single acquirers' acquisition of relatively larger-sized targets (column (4) in Table 4 Panel B). We find that relative size of the current acquisition is not a significant factor determining serial acquirers' poor long-term performance based on the interaction terms in columns (2) and (5). The results in Table 6, Panel A are consistent with the findings in earlier studies and are presented here for comparison.

We now formally test hypothesis H3. The hypothesis states that the stock performance of the last acquisition in an acquisition series is worse compared to all other acquisitions. We use the regression specification as in equation (5) to first test the relative performance:

$$Performance_{i,j} = \alpha + \beta_i SERIES\_END_{i,j} + X'_{i,t}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j} \quad (5)$$

Columns (3) and (6) in Table 6 Panel A contain the results for equation (5), using *ANN_BHAR* and *LONG_BHAR* as performance variables, respectively. The coefficient on the *SERIES_END* dummy variable is negative and significant at 1% level and 5% level for *ANN_BHAR* and *LONG_BHAR*, respectively, indicating that serial acquirers in the final acquisition of an acquisition series underperform all other acquisitions.

To determine the effect of *PMI* costs, we examine the impact of acquisition history (*PRE_24_NUM* and *PRE_24_RELATIVE_SIZE*) on the stock performance of serial acquirers' last acquisition in acquisition series. Using a subsample of serial acquirers' last acquisition in acquisition series, Table 6 Panels B and C show regression results for equation (5) for *ANN_BHAR* and *LONG_BHAR*, respectively. As shown in Panel B column (2), the coefficient

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[20] We examine the above results by using non-overlapping *LONG_BHAR*. While *PRE_24_NUM* and *PRE_24_RELATIVE_SIZE* retain their negative sign in all the regressions, *PRE_24_NUM* significantly impacts *LONG_BHAR* at the 10% level after controlling for CEO overconfidence.

[21] The measure *LONG_BHAR* may contain the abnormal return performance of other acquisitions made during the 24-months prior to the last acquisition. Hence, we interpret *LONG_BHAR* as a performance measure of the last few acquisitions made in an acquisition series.

on *PRE_24_RELATIVE_SIZE* (-0.015) is negative and significant at 1% level, indicating that, at deal announcement, market views serial acquirers more negatively for the final acquisitions of an acquisition series, if there were large targets acquired in prior 24 months. Table 6 Panel C Model (1) indicates that the coefficient on *PRE_24_NUM* (-0.0344) is negative and significant at 1% level, indicating that, serial acquirers experience worse stock performance in the post-merger period with more acquisitions consummated in prior 24 months. The relative size is not a significant factor in determining post-merger integration costs. The significant effect of *PMI* costs on the long-term returns shows that these costs are only gradually realized and that the announcement period returns tend to underestimate these costs.

Prior research shows that acquirers' poor performance is partly due to CEO overconfidence. We control for overconfidence in Table 6 Panels B and C and report the results in columns (5) through (8). The results for announcement period reaction in Table 6 Panel B indicate that the coefficient on *PRE_24_RELATIVE_SIZE* has approximately the same magnitude and the coefficient remains significant at the 1% level. The long-term results in Table 6, Panel C indicates that the overconfidence variables impact performance negatively, with *NPR_ADJ* being significant at the 10% level. After controlling for CEO overconfidence, coefficient on *PRE_24_NUM* is significant at the 1% level, suggesting that costs due to post-merger integration significantly affects shareholder wealth. We do not observe relative size of prior acquisitions to be important in determining post-merger integration costs.

We recognize that the post-merger integration costs may be mitigated and not significantly affect shareholders' wealth if managers' superior judgment and ability matter. Thus, we control for managerial ability and present the results in columns (3) and (4) in Table 6, Panel B and C. We find that managerial ability positively impacts the long-term performance (Panel C, columns (3) and (4)). After controlling for managerial ability, we find that the coefficient on *PRE_24_NUM* is -0.0338 (significant at 1% level) and *PRE_24_RELATIVE_SIZE* is -0.005 (significant at 10% level). These results underscore the importance of the number of prior acquisitions in determining post-merger integration costs. Overall, we find strong support for hypothesis H3.

6.0 Conclusion

Our study defines a single acquirer as a firm that consummates only one acquisition in an acquisition series that begins after a hiatus of a 24-month period of no acquisitions and ends when no further acquisitions are made for a 24-month period. In this context, we examine the relative performance of a single acquirer's acquisition with that of a serial acquirer's transaction. We find that a serial acquirer outperforms a single acquirer in terms of buy-and-hold abnormal returns during a 5-day window surrounding the announcement of the first acquisition in an acquisition series. The superior performance of the serial acquirer is also evident during the 24-months post-consummation of the first acquisition, even after removing the influence of overlapping returns from other acquisitions following the first acquisition during a 24-month period. We do not find overconfidence, managerial ability, or investment opportunities having significant predictive power in determining if an acquirer will become a serial acquirer.

After the initial acquisition, a serial acquirer accumulates a history of acquisitions in an acquisition series. We examine if acquisition history in terms of the number of acquisitions and relative size of targets have a significant impact on shareholders' wealth. We find that a greater number and relative size of the acquisitions made in the previous 24-months results in worse performance. These effects hold even after controlling for potential positive effects of managerial ability and the negative effects of overconfidence. We attribute the poor performance

to possible disruptions in post-merger integration due to acquisitions made in quick succession (Shrivastava, 1986).

Similar to earlier studies (Billett & Qian, 2008; Klasa & Stegemoller, 2007), we also find that the relative performance of the last acquisition of a serial acquirer is worse compared to all other acquisitions. However, the reasons for poor performance that we observe are not wholly due to the findings in earlier studies. Klasa and Stegemoller (2007) attribute the poor performance to lack of availability of profitable investment opportunities towards the end of an acquisition series, and Billet and Qian (2008) find evidence that points to CEOs' self-attribution bias. After controlling for investment opportunities and overconfidence, we find that the relatively poor long-term performance is largely due to the number of acquisitions and to a lesser extent, the relative size of the acquisitions consummated during a 24-month period preceding a current acquisition. The results highlight the importance of paying attention to the long-term effects of consummating multiple acquisitions and cautions serial acquirers not to bite more than they can chew.
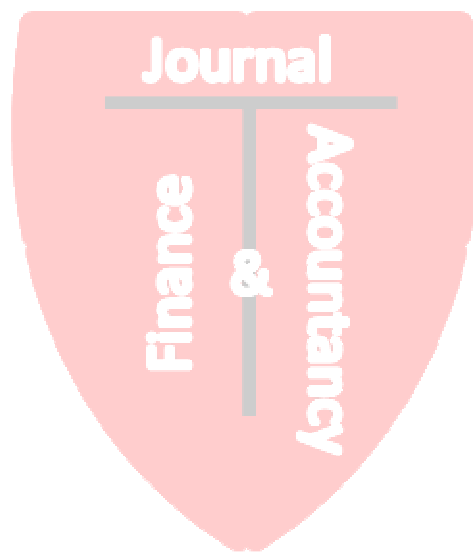
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APPENDIX

Variable Definitions

Name in the Table	Description
LONG_BHAR	Abnormal buy-and-hold abnormal returns during the 24-month period after the completion of the first acquisition
ANN_BHAR	Abnormal buy-and-hold abnormal returns during a 5-day window around the announcement date
SINGLE	If there is no other acquisition pre and post 24 months of current acquisition, then the dummy equals one.
SERIAL	If the acquisitions are not a single acquirer's transaction.
SERIES_START	If the acquisition is the first acquisition in an acquisition-series by a serial acquirer, then the dummy equals one.
SERIES_END	If the acquisition is the final acquisition in an acquisition-series by a serial acquirer, then the dummy equals one.
PRE_24_NUM	The number of acquisitions consummated in prior 24 months of current acquisition
PRE_24_RELATIVE_SIZE	Total relative sizes of acquisitions consummated in prior 24 months of current acquisition
NPR	The net purchase ratio of acquirer CEO's pre-acquisition announcement purchase of shares minus sales divided by the sum of purchases and sales, during the 180 days prior to the announcement date.
NPR_ADJ	This the adjusted NPR computed by subtracting the NPR measured during the period [-360 to -180) from the NPR measured during [-180, 0) days.
MA_SCORE	Managerial ability using the index developed in Demerjian et al. (2012)
STOCK_OFFER	If the transaction is a stock acquisition, then the dummy equals 1.
RELATIVE_SIZE	Deal Value reported by SDC divided by acquirer's market cap
PUBLIC	If the target company is a public company, then the dummy equals one.
DIFF_IND	If the acquirer and the target are from different industries, then the dummy equals one.
HOSTILE	If the acquisition is a hostile takeover transaction.
PRE_12_MOMENTUM	Buy-and-hold acquirer returns, accumulated from month -12 to the closest month-end at least 30 days before the announcement of the acquisition
LOG_MARKET_CAP	Acquirer market capitalization is measured as of the most recent month-end at least 30 days before the acquisition announcement.
MKBK	Acquirer's market capitalization divided by total book value of common equity (CEQ)
TOBIN_Q	Acquirer's Tobin's Q are defined as (Total Assets (AT) - Common Equity (CEQ)+Common Shares Outstanding (CSHO)*Price Close-Annual (PRCC))/Total Assets (AT)
CASH	Acquirer cash and short-term investments (CHE), scaled by total assets (AT).

NOA	NOA is defined following Nissim and Penman (2001, appendix), as: Net Financial Obligations (NFO) plus Common Equity (CSE) plus Minority Interest (MI), where: NFO = Financial Obligations (FO) less Financial Assets (FA) FO = debit in current liabilities (DLC) + total long-term debt (DLTT) + preferred stock (PSTK) – preferred stock in treasury (TSTKP) + preferred dividends in arrears (DVPA) FA = cash and short-term investments (CHE) + other investments and advances (IVAO) CSE = common equity (CEQ) + preferred stock in treasury (TSTKP) – preferred dividends in arrears (DVPA) MI = minority interest (MIB) Simplifying, NOA is calculated as DLC + DLTT + PSTK - CHE - IVAO + CEQ + MIB. I scale NOA by lagged total assets (AT). I replace missing values for DLC, DLTT, PSTK, IVAO, and MIB with zeros to avoid losing data.
ACCRUALS	Total Accruals are defined following Richardson, Sloan, Soliman, and Tuna (2005), as: TACC = ΔWC + ΔNCO + ΔFIN, where: Δ = change from prior year to current year WC = working capital = current operating assets (COA) less current operating liabilities (COL) COA = current assets (ACT) – cash and short-term investments (CHE) COL = current liabilities (LCT) – debt in current liabilities (DLC) NCO = non-current operating assets (NCOA) – non-current operating liabilities (NCOL) NCOA = total assets (AT) – current assets (ACT) – other investments and advances (IVAO) NCOL = total liabilities (LT) – current liabilities (ACT) – long-term debt (DLTT) FIN = financial assets (FA) – financial liabilities (FL) FA = short-term investments (IVST) + other investments and advances (IVAO) FL = long-term debt (DLTT) + debt in current liabilities (DLC) + preferred stock (PSTK) Simplifying, accruals are calculated as: ΔAT - ΔCHE - ΔLT + ΔIVST - ΔPSTK, scaled by lagged total assets (AT). We replace missing values for PSTK, LT, and RECTA with zeros to avoid losing data

Table 1. Distribution of acquisitions by year and industry
Table 1 presents year distributions (Panel A) and industry distributions (Panel B) of our full sample of 14,746 M&A transactions with consummation dates between January 1, 1984 and December 31, 2016. All data is obtained from the SDC.

Panel A. Year Distribution

Year	Total Acquisitions		Acquisitions by Single Acquirers		Acquisitions by Serial Acquirers	
	N	(%)	N	(%)	N	(%)
1984	193	1.31	135	2.71	58	0.59
1985	118	0.80	65	1.30	53	0.54
1986	171	1.16	79	1.58	92	0.94
1987	136	0.92	67	1.34	69	0.71
1988	179	1.21	85	1.70	94	0.96
1989	209	1.42	109	2.19	100	1.02
1990	209	1.42	94	1.89	115	1.18
1991	208	1.41	93	1.87	115	1.18
1992	300	2.03	121	2.43	179	1.83
1993	398	2.70	154	3.09	244	2.50
1994	426	2.89	157	3.15	269	2.76
1995	533	3.61	162	3.25	371	3.80
1996	700	4.75	194	3.89	506	5.18
1997	803	5.45	197	3.95	606	6.21
1998	927	6.29	255	5.11	672	6.89
1999	775	5.26	237	4.75	538	5.51
2000	634	4.30	214	4.29	420	4.30
2001	519	3.52	177	3.55	342	3.50
2002	550	3.73	187	3.75	363	3.72
2003	509	3.45	148	2.97	361	3.70
2004	629	4.27	191	3.83	438	4.49
2005	576	3.91	181	3.63	395	4.05
2006	595	4.03	166	3.33	429	4.40
2007	615	4.17	198	3.97	417	4.27
2008	479	3.25	166	3.33	313	3.21
2009	312	2.12	96	1.93	216	2.21
2010	442	3.00	153	3.07	289	2.96
2011	433	2.94	154	3.09	279	2.86
2012	466	3.16	157	3.15	309	3.17
2013	381	2.58	117	2.35	264	2.70
2014	488	3.31	156	3.13	332	3.40
2015	447	3.03	167	3.35	280	2.87
2016	386	2.62	154	3.09	232	2.38
Total	**14,746**	**100**	**4,986**	**100**	**9,760**	**100**

Panel B. Industry Distribution

Industry	All Acquisitions		Acquisitions by Single Acquirers		Acquisitions by Serial Acquirers	
	N	(%)	N	(%)	N	(%)
Agriculture, Forestry & Fishing	47	0.32	13	0.26	34	0.35
Mining	1,106	7.50	344	6.90	762	7.81
Construction	174	1.18	61	1.22	113	1.16
Manufacturing	7,188	48.75	2,631	52.77	4,557	46.69
Transportation, Communications, Electric, Gas & Sanitary Services	953	6.46	279	5.60	674	6.91
Wholesale Trade	735	4.98	223	4.47	512	5.25
Retail Trade	605	4.10	290	5.82	315	3.23
Services	3,837	26.02	1,109	22.24	2,728	27.95
Public Administration	101	0.68	36	0.72	65	0.67
	14,746	100	4,986	100	9,760	100

Table 2. Acquisition-Series length by the number of acquisitions within an acquisition-series

Table 2 presents the number of acquisitions within an acquisition-series and the mean and median of acquisition series length (in years) broken down by the number of acquisitions within an acquisition-series. The acquisition series length is calculated by taking the difference between the effective date of the last acquisition in the series and the effective date of the first acquisition in the series.

Number of Acquisitions within an Acquisition-Series	Number of Acquisition-Series	Number of Acquisitions	Mean Length (in Years)	Median Length (in Years)
2	1,624	3,248	0.86	0.79
3	628	1,884	1.65	1.61
4	318	1,272	2.42	2.34
5	175	875	3.07	3.10
6	96	576	3.15	2.88
7	66	462	4.00	4.15
8	32	256	4.87	5.14
9	19	171	4.63	4.17
10	14	140	5.13	5.27
>=11	56	876	6.89	7.15
?	52	52	?	?
Total	**3,080[1]**	**9,760**		

[1] There are 52 acquisition series didn't end by the end of 2018. Since our data ended in 2018, we are not able to determine the number of acquisitions in an acquisition series or the series length.

Table 3. Univariate statistics

Table 3 shows univariate statistics. Panel A shows univariate statistics for the full sample. Panel B shows univariate comparison of characteristics for single acquirers' transaction characteristics (1), all transaction by serial acquires (2), serial acquirers' first transaction within acquisition series (3), and serial acquirers' final transaction within acquisition series (4). Test statistics are based on two-sided *t*-tests (differences in means). The full sample has 14,746 M&A transactions with consummation dates between January 1, 1984 and December 31, 2016. All data is obtained from the SDC. All continuous variables are winsorized at the top and bottom 1%.

Panel A: Overall Sample Description.

Variable	N	Mean	Median	Std Dev
Performance Variables				
LONG_BHAR	14,746	-0.077	-0.121	0.947
ANN_BHAR	14,746	0.015	0.008	0.090
Acquirer Characteristics				
SINGLE	14,746	0.338	0.000	0.473
SERIAL	14,746	0.662	0.000	0.473
PRE_24_NUM	14,746	0.833	0.000	1.368
PRE_24_RELATIVE_SIZE	14,746	0.170	0.000	1.137
POST_24_NUM	14,746	0.870	0.000	1.401
NPR	10,777	0.541	1.000	0.777
NPR_ADJ	9,315	0.009	0.000	0.786
MA_SCORE	14,381	0.012	-0.012	0.129
LOG_MARKET_CAP	14,746	6.210	6.195	1.918
CASH	14,746	0.180	0.104	0.195
ACCRUALS	14,746	0.129	0.058	0.313
NOA	14,746	0.713	0.672	0.473
TOBIN_Q	14,746	2.107	1.650	1.469

MKBK	14,746	3.504	2.354	4.142
PRE_12_MOMENTUM	14,746	1.293	1.143	0.717
LEVERAGE	14,746	0.187	0.155	0.179
Deal Characteristics				
RELATIVE_SIZE	14,746	0.230	0.088	0.396
DIFF_IND	14,746	0.398	0.000	0.490
PUBLIC	14,746	0.145	0.000	0.352
STOCK_OFFER	14,746	0.122	0.000	0.327
HOSTILE	14,746	0.004	0.000	0.060

Panel B. Univariate Comparison of Characteristics for Single Acquirers' Transaction Characteristics (1), All Transaction by serial acquires (2), Serial Acquirers' First Transaction within Acquisition Series (3), and Serial Acquirers' Final Transaction within Acquisition Series (4).

Variable	Acquisitions by Single Acquirers (1)		All Acquisitions by Serial Acquirers (2)		First Acquisitions by Serial Acquirers (3)		Last Acquisitions by Serial Acquirers (4)		Difference (2-1)	Difference (3-1)	Difference (4-1)	Difference (4-3)
	N	Mean	N	Mean	N	Mean	N	Mean	Mean	Mean	Mean	Mean
Performance Variables												
LONG_BHAR	4,986	-0.098	9,760	-0.067	3,080	0.026	2,958	-0.179	0.031	0.124**	-0.082**	-0.206***
ANN_BHAR	4,986	0.015	9,760	0.015	3,080	0.018	2,958	0.011	-0.001	0.003	-0.004*	-0.007**
Acquirer Characteristics												
PRE_24_NUM	4,986	0.000	9,760	1.259	3,080	0.000	2,958	1.546	1.259**	0	1.546**	1.546***
PRE_24_RELATIVE_SIZE	4,986	0.000	9,760	0.257	3,080	0.000	2,958	0.360	0.257**	0	0.360**	0.360***
POST_24_NUM	4,986	0.000	9,760	1.315	3,080	1.562	2,958	0.019	1.315**	1.562**	0.019**	-1.543***
NPR	3,332	0.483	7,445	0.568	2,216	0.559	2,223	0.539	0.085**	0.077**	0.056*	-0.020
NPR_ADJ	2,816	-0.006	6,499	0.016	1,894	0.036	1,930	-0.021	0.022	0.041	-0.016	-0.057*
MA_SCORE	4,837	0.012	9,544	0.011	2,997	0.013	2,907	0.012	-0.001	0.001	0.000	-0.001
LOG_MARKET_CAP	4,986	5.818	9,760	6.410	3,080	6.148	2,958	6.420	0.593**	0.330**	0.602**	0.272***

Table 4. Probability of being a serial acquirer and multivariate analysis of acquisition performance

Table 4 contains logit regression of being a serial acquirer (Panel A) and multivariate regression results of the relative performance of serial acquirers (Panel B and Panel C). Panel B contains results with a subsample of single acquisitions and serial acquirers' first acquisitions within acquisition series. Panel C contains results with all acquisitions samples. The regression specification for Panels B and C is: $Performance_{i,j} = \alpha + \beta_i SINGLE + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j}$, where *Performance* is either during announcement period (5-day window around announcement date, *ANN_BHAR)* or long-term (24 months after deal completion, *LONG_BHAR*). *SINGLE* is an indicator variable equal to one if acquirer is a single acquirer and zero for a serial acquirer. The controls for acquirers and deal characteristics are $X'_{i,j}$, and $Y'_{i,j}$, respectively. All continuous variables are winsorized at the top and bottom 1%, by year. P-values are clustered by firm. *t*-statistics are given in parenthesis. Coefficients significant at the 1%, 5%, and 10% are marked by ***, **, * respectively. The variable descriptions are contained in the Appendix.

Panel A. Logit Regression of Being A Serial Acquirer

VARIABLES	(1) SERIAL	(2) SERIAL	(3) SERIAL	(4) SERIAL
ANN_BHAR	0.5500**			
	(2.1100)			
MA_SCORE		-0.1532		
		(-0.7469)		
NPR			0.0479	
			(1.2317)	
NPR_ADJ				0.0217
				(0.5660)
	-	-	-	-
RELATIVE_SIZE	0.3099***	0.2980***	0.4209***	0.3811***
	(-4.2539)	(-4.0092)	(-4.2613)	(-3.4698)
DIFF_IND	0.0357	0.0327	-0.0143	0.0133
	(0.7158)	(0.6445)	(-0.2408)	(0.2059)
PUBLIC	-0.1078	-0.1075	-0.1213	-0.0970
	(-1.4695)	(-1.4560)	(-1.3606)	(-1.0076)
STOCK_OFFER	-0.0325	-0.0402	-0.0102	0.0130
	(-0.4299)	(-0.5192)	(-0.1107)	(0.1294)
HOSTILE	0.0605	0.0933	-0.6005	-0.5488
	(0.1331)	(0.2014)	(-0.8654)	(-0.7815)
LOG_MARKET_CAP	0.0964***	0.0957***	0.0523***	0.0472**
	(6.2508)	(6.0050)	(2.7536)	(2.3124)
CASH	0.0397	0.0904	-0.0186	-0.1592
	(0.2444)	(0.5334)	(-0.0949)	(-0.7365)
ACCRUALS	0.2226*	0.1661	0.2477*	0.2598*
	(1.9446)	(1.4180)	(1.8379)	(1.7344)

NOA	0.1116	0.1259	0.1267	0.0785
	(1.1670)	(1.2662)	(1.1089)	(0.6117)
TOBIN_Q	-0.0480*	-0.0418	-0.0303	-0.0221
	(-1.8849)	(-1.6026)	(-1.0301)	(-0.6988)
MKBK	0.0037	0.0050	0.0042	0.0031
	(0.4637)	(0.6163)	(0.4502)	(0.2995)
PRE_12_MOMENTUM	0.2208***	0.2234***	0.2422***	0.2499***
	(6.4523)	(6.3819)	(5.8369)	(5.5165)
LEVERAGE	0.2423	0.1932	0.3225	0.2216
	(1.3887)	(1.0747)	(1.5473)	(0.9699)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Constant	-1.4851***	-1.3998***	-0.6511	-1.4514
	(-3.4684)	(-3.1745)	(-1.0005)	(-1.1075)
Observations	8,066	7,834	5,548	4,710

Panel B: Relative Performance of Serial Acquirers (First Acquisitions Within Acquisition Series)

VARIABLES	(1) ANN_BHAR	(2) ANN_BHAR	(3) LONG_BHAR	(4) LONG_BHAR
SINLGE	-0.0044**	-0.0034	-0.1315***	-0.0852***
	(-2.0676)	(-1.4363)	(-5.8654)	(-3.2918)
SINLGE*RELATIVE_SIZE		-0.0038		-0.1919***
		(-0.5156)		(-2.6874)
RELATIVE_SIZE	0.0289***	0.0316***	0.1398***	0.2753***
	(7.6249)	(4.9144)	(4.0224)	(4.4251)
DIFF_IND	-0.0015	-0.0016	-0.0696***	-0.0703***
	(-0.7260)	(-0.7324)	(-3.0721)	(-3.1104)
PUBLIC	-0.0194***	-0.0194***	-0.0555*	-0.0576*
	(-6.2258)	(-6.2340)	(-1.7721)	(-1.8415)
STOCK_OFFER	-0.0119***	-0.0119***	-0.1117***	-0.1085***
	(-3.1359)	(-3.1172)	(-2.8791)	(-2.7983)
HOSTILE	-0.0003	-0.0002	0.0130	0.0200
	(-0.0239)	(-0.0137)	(0.0624)	(0.0948)
LOG_MARKET_CAP	-0.0041***	-0.0041***	0.0133*	0.0140**
	(-5.7867)	(-5.7622)	(1.8748)	(1.9799)
CASH	-0.0136*	-0.0137*	-0.0070	-0.0122
	(-1.6873)	(-1.7005)	(-0.0886)	(-0.1544)
ACCRUALS	-0.0045	-0.0044	-0.0519	-0.0505
	(-0.7438)	(-0.7389)	(-0.8868)	(-0.8642)
NOA	0.0045	0.0044	-0.1043**	-0.1087**
	(0.9658)	(0.9479)	(-2.0666)	(-2.1689)
TOBIN_Q	0.0021	0.0021	-0.0036	-0.0040
	(1.6064)	(1.6008)	(-0.2886)	(-0.3164)
MKBK	-0.0005	-0.0005	-0.0031	-0.0031
	(-1.0689)	(-1.0705)	(-0.8478)	(-0.8576)
PRE_12_MOMENTUM	0.0135***	0.0135***	0.0066	0.0078
	(7.0186)	(7.0366)	(0.3632)	(0.4310)
LEVERAGE	0.0027	0.0026	0.2457***	0.2433***
	(0.3273)	(0.3212)	(2.9601)	(2.9295)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Constant	0.0255*	0.0251*	0.1294	0.1064
	(1.7703)	(1.7362)	(0.6352)	(0.5255)
Observations	8,066	8,066	8,066	8,066
R-squared	0.0531	0.0531	0.0305	0.0321

Panel C: Relative Performance of Serial Acquirers (All Acquisitions by Serial Acquirers)

VARIABLES	(1) ANN_BHAR	(2) ANN_BHAR	(3) LONG_BHAR	(4) LONG_BHAR
SINLGE	-0.0018		-0.0546***	
	(-1.0784)		(-2.8524)	
SERIAL_START		0.0041**		0.1207***
		(2.2957)		(6.5498)
RELATIVE_SIZE	0.0288***	0.0287***	0.0980***	0.0951***
	(9.6062)	(9.5967)	(3.5605)	(3.4643)
DIFF_IND	-0.0022	-0.0022	-0.0619***	-0.0621***
	(-1.4483)	(-1.4547)	(-3.6123)	(-3.6248)
PUBLIC	-0.0218***	-0.0218***	-0.0513**	-0.0523**
	(-9.3944)	(-9.4178)	(-2.0781)	(-2.1199)
STOCK_OFFER	-0.0091***	-0.0091***	-0.1216***	-0.1211***
	(-3.2138)	(-3.2060)	(-3.8135)	(-3.7994)
HOSTILE	-0.0057	-0.0055	-0.0129	-0.0089
	(-0.5953)	(-0.5836)	(-0.0965)	(-0.0670)
LOG_MARKET_CAP	-0.0036***	-0.0035***	0.0102	0.0127**
	(-6.8371)	(-6.6836)	(1.6045)	(2.0118)
CASH	-0.0105*	-0.0105*	-0.1131	-0.1135
	(-1.7605)	(-1.7630)	(-1.5458)	(-1.5494)
ACCRUALS	-0.0019	-0.0020	-0.0728	-0.0744
	(-0.4760)	(-0.4900)	(-1.4436)	(-1.4817)
NOA	0.0032	0.0037	-0.1345***	-0.1187***
	(1.0704)	(1.2458)	(-3.2670)	(-2.8901)
TOBIN_Q	0.0005	0.0005	-0.0013	-0.0017
	(0.4719)	(0.4618)	(-0.1187)	(-0.1472)
MKBK	-0.0002	-0.0002	-0.0018	-0.0020
	(-0.7045)	(-0.7268)	(-0.5756)	(-0.6460)
PRE_12_MOMENTUM	0.0131***	0.0130***	0.0108	0.0096
	(8.4862)	(8.4603)	(0.7139)	(0.6364)
LEVERAGE	-0.0015	-0.0012	0.1943***	0.2028***
	(-0.2474)	(-0.2002)	(2.5814)	(2.6890)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Constant	0.0191*	0.0161	0.0159	-0.0752
	(1.6864)	(1.4219)	(0.0937)	(-0.4468)
Observations	14,746	14,746	14,746	14,746
R-squared	0.0496	0.0498	0.0367	0.0387

Table 5. Impact of acquisition history on future acquisition activity and performance

Table 5 contains multivariate regression results of the impact of prior level and magnitude of acquisition activity on performance. using the following regression specification:

$Performance_{i,j} = \alpha + \beta_i History_{i,j} + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j}$, where *Performance* is either during announcement period (5-day window around announcement date, *ANN_BHAR*, Panel A) or long-term (24 months after deal completion, *LONG_BHAR*, Panel B). All continuous variables are winsorized at the top and bottom 1%, by year. P-values are clustered by firm. *t*-statistics are given in parenthesis. Coefficients significant at the 1%, 5%, and 10% are marked by ***, **, * respectively. The variable descriptions are contained in the Appendix.

Panel A. Impact of Acquisition History on Announcement Returns

VARIABLES	(1) ANN_BHAR	(2) ANN_BHAR	(3) ANN_BHAR	(4) ANN_BHAR	(5) ANN_BHAR	(6) ANN_BHAR	(7) ANN_BHAR	(8) ANN_BHAR
PRE_24_NUM	-0.0009*		-0.0009		-0.0010		-0.0016**	
	(-1.6495)		(-1.4726)		(-1.5156)		(-2.2238)	
PRE_24_RELATIVE_SIZE		-0.0013***		-0.0013***		-0.0011***		-0.0012**
		(-3.1840)		(-3.1427)		(-2.6640)		(-2.2529)
MA_SCORE			0.0010	0.0011				
			(0.1554)	(0.1716)				
NPR					-0.0029**	-0.0029**		
					(-2.3196)	(-2.3441)		
NPR_ADJ							-0.0034***	-0.0034***
							(-2.8405)	(-2.8185)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0162	0.0169	0.0162	0.0168	0.0235	0.0241	0.0076	0.0088
	(1.4206)	(1.4872)	(1.3904)	(1.4513)	(1.3881)	(1.4298)	(0.3639)	(0.4216)
Observations	14,746	14,746	14,381	14,381	10,777	10,777	9,315	9,315
R-squared	0.0497	0.0498	0.0479	0.0480	0.0435	0.0436	0.0458	0.0454

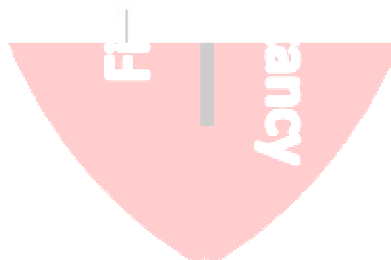**Panel B. Impact of Acquisition History on Long-term Returns**

VARIABLES	(1) LONG_BHAR	(2) LONG_BHAR	(3) LONG_BHAR	(4) LONG_BHAR	(5) LONG_BHAR	(6) LONG_BHAR	(7) LONG_BHAR	(8) LONG_BHAR
PRE_24_NUM	-0.0183		-0.0185		-0.0191**		-0.0189*	
	(-1.6027)		(-1.5762)		(-1.9761)		(-1.8639)	
PRE_24_RELATIVE_SIZE		-0.0103**		-0.0107**		-0.0097***		-0.0111**
		(-2.1607)		(-2.2671)		(-2.5888)		(-2.3343)
MA_SCORE			0.2407***	0.2401***				
			(2.8452)	(2.8342)				
NPR					-0.0353**	-0.0356**		
					(-2.3580)	(-2.3886)		
NPR_ADJ							-0.0386***	-0.0383***
							(-2.7479)	(-2.7258)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.0597	-0.0390	-0.0178	0.0030	0.2154	0.2335	0.2356	0.2495
	(-0.3561)	(-0.2322)	(-0.1022)	(0.0172)	(1.2180)	(1.3232)	(0.6357)	(0.6802)
Observations	14,746	14,746	14,381	14,381	10,777	10,777	9,315	9,315
R-squared	0.0366	0.0362	0.0361	0.0357	0.0347	0.0342	0.0347	0.0342

Table 6: Relative performance at the end of an acquisition series

Table 6 contains the relative performance of the final acquisition in an acquisition series. Panel A column (1), (2), (4), and (5) contains results with a subsample of single acquisitions and serial acquirers' final acquisitions within acquisition series. Panel A column (3) and (6) contains results with all acquisitions samples. The regression specification for Panel A column (1), (2), (4), and (5) is: $Performance_{i,j} = \alpha + \beta_i SINGLE + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j}$, where $SINGLE$ is an indicator variable equal to one if acquirer is a single acquirer and zero for a serial acquirer. The regression specification for Panel A column (3) and (6) is: $Performance_{i,j} = \alpha + \beta_i SERIES\_END_{i,j} + X'_{i,j}A + Y'_{i,j}B + Ind\ FE + Year\ FE + \epsilon_{i,j}$, where $SERIES\_END$ is an indicator variable equal to one if the acquisition is the final acquisition in an acquisition-series by a serial acquirer, otherwise equal to zero. Panels B and Panel C contain results with a subsample of serial acquirers' final acquisitions. Panels B and Panel C show impact of prior acquisition activity (PRE_24_NUM and $PRE\_24\_RELATIVE$) on the performance measures ANN_BHAR and $LONG\_BHAR$, respectively. $Performance$ is either during announcement period (5-day window around announcement date, ANN_BHAR) or long-term (24 months after deal completion, $LONG\_BHAR$). All continuous variables are winsorized at the top and bottom 1%, by year. P-values are clustered by firm. t-statistics are given in parenthesis. Coefficients significant at the 1%, 5%, and 10% are marked by ***, **, * respectively. The variable descriptions are contained in the Appendix.

Panel A. Relative Performance of Serial Acquirers (Last Acquisitions Within Acquisition Series)

VARIABLES	(1) ANN_BHAR	(2) ANN_BHAR	(3) ANN_BHAR	(4) LONG_BHAR	(5) LONG_BHAR	(6) LONG_BHAR
SINLGE	0.0011	0.0033		0.0722***	0.0632**	
	(0.5050)	(1.3665)		(3.3534)	(2.5615)	
SINLGE*RELATIVE_SIZE		-0.0094			0.0380	
		(-1.3246)			(0.6495)	
SERIES_END			-0.0030*			-0.1195***
			(-1.6493)			(-6.8160)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0151	0.0140	0.0178	-0.0327	-0.0282	-0.0197
	(1.0032)	(0.9319)	(1.5743)	(-0.1813)	(-0.1561)	(-0.1175)
Observations	7,944	7,944	14,746	7,944	7,944	14,746
R-squared	0.0530	0.0534	0.0497	0.0349	0.0349	0.0385

Panel B. Impact of Acquisition History on Announcement Returns for Serial Acquirers' Last Acquisitions Within Acquisition Series)

VARIABLES	(1) ANN_BH AR	(2) ANN_BH AR	(3) ANN_BH AR	(4) ANN_BH AR	(5) ANN_BH AR	(6) ANN_BH AR	(7) ANN_BH AR	(8) ANN_BH AR
PRE_24_NUM	-0.0019 (-1.3450)		-0.0015 (-1.0439)		-0.0012 (-0.7276)		-0.0015 (-0.8910)	
PRE_24_RELATIVE_SIZE		-0.0015*** (-3.3963)		-0.0015*** (-3.3768)		-0.0014*** (-3.1272)		-0.0012** (-2.4219)
MA_SCORE			-0.0202 (-1.4479)	-0.0192 (-1.3787)				
NPR					0.0026 (0.9629)	0.0026 (0.9595)		
NPR_ADJ							-0.0006 (-0.2230)	-0.0006 (-0.2500)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.0115 (0.5308)	0.0109 (0.5034)	0.0076 (0.3374)	0.0072 (0.3189)	0.0198 (0.6993)	0.0188 (0.6660)	0.0201 (0.8484)	0.0182 (0.7605)
Observations	2,958	2,958	2,907	2,907	2,223	2,223	1,930	1,930
R-squared	0.0614	0.0624	0.0618	0.0630	0.0540	0.0554	0.0570	0.0577

Panel C. Impact of Acquisition History on Long-term Returns for Serial Acquirers' Last Acquisitions Within Acquisition Series)

VARIABLES	(1) LONG_BH AR	(2) LONG_BH AR	(3) LONG_BH AR	(4) LONG_BH AR	(5) LONG_BH AR	(6) LONG_BH AR	(7) LONG_BH AR	(8) LONG_BH AR
PRE_24_NUM	-0.0344*** (-2.6300)		-0.0338** (-2.5463)		-0.0382*** (-2.7780)		-0.0395*** (-2.7093)	
PRE_24_RELATIVE_SIZE		-0.0039 (-1.2792)		-0.0050* (-1.8543)		-0.0033 (-1.0296)		-0.0035 (-1.3827)
MA_SCORE			0.3114** (2.2210)	0.3118** (2.2196)				
NPR					-0.0217 (-0.7798)	-0.0190 (-0.6832)		
NPR_ADJ							-0.0449* (-1.7358)	-0.0449* (-1.7276)
Acquirer Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.3397 (-1.3853)	-0.3383 (-1.3666)	-0.3139 (-1.2177)	-0.3117 (-1.1985)	0.5386** (2.1312)	0.5376** (2.1482)	0.8751** (1.9716)	0.8494* (1.9434)
Observations	2,958	2,958	2,907	2,907	2,223	2,223	1,930	1,930
R-squared	0.0621	0.0605	0.0628	0.0613	0.0611	0.0590	0.0696	0.0673