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*Skill in Corporate Acquisitions*

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## Skill in Corporate Acquisitions <sup>☆</sup>

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### Abstract

Are there skill differences in mergers and acquisitions? To investigate this question, we focus on persistence in the performance of corporate acquirers, finding significant evidence at the firm level. Persistence may be due to skill differences across either entire corporations or specific executives. We find persistence only when successive deals occur under the same CEO, not when the CEO changes. We conclude that skill differences in acquisitions reside with the CEO, not with the firm as a whole. These differences are economically meaningful. An acquirer that was successful in its last deal and kept its CEO earns, on average, 1.02% more on its next deal than does a previously-unsuccessful firm that also kept its CEO. This percentage difference is equivalent to a \$175 million difference in value creation for the shareholders of an average-sized bidder.

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## 1. Introduction

Our paper uses data on mergers and acquisitions to test whether corporations and their managers possess different levels of skill. Skill is clearly an important issue in business. Firms pay large sums to executives, presumably because they are skillful. And executives pursue educational and training opportunities to acquire skill. Only recently, however, has the finance literature investigated skill differences across either firms or their executives. For example, Bertrand and Schoar (BS) (2003, p. 1170) state, “How much do individual managers matter for firm behavior and economic performance? Research in finance and economics so far has given little consideration to this question.” Since the publication of BS’s study, a few papers have addressed this question (see, Bennedsen, Perez-Gonzalez, and Wolfenzon (2006), Falato (2007), Chang, Dasgupta, and Hilary (2008), and Gompers, Kovner, Lerner, and Scharfstein (2008)). Our study provides evidence that, at least for corporate acquirers, there are significant differences in skill. And, the skill differences appear to reside with the CEO, not the acquirer as a whole.

For two reasons, mergers are a natural place to look for skill differences. First, as Harford and Li (2007, p. 918) point out, “...acquisition decisions may be the most significant corporate resource allocation decisions that managers make and the potential wealth destruction to firm shareholders is large, as Moeller, Schlingemann and Stulz (2005) document.” Second, mergers have distinct announcement dates, allowing one to measure the consequences of skill through abnormal returns around these dates. In fact, a large literature has already examined short-run abnormal returns around merger announcements (see, for example, the review articles of Jensen and Ruback (1983) and Bruner (2002)). However, the returns in this literature reflect the average performance or skill of acquirers, not differences in skill across acquirers.

To examine skill differences across acquirers, we ask the following research questions:

1. Do some acquirers create more value than others?
2. Do some acquirers extract more value for their shareholders than others?
3. Do some acquirers bargain better than others?

The methodology we use to answer these questions is simple; we relate the success of a firm's last acquisition, as defined by abnormal returns around the announcement date, to the success of its current acquisition. This approach follows from the literature on money managers. Beginning with Jensen (1969), academics have examined differential skill across money managers by measuring persistence, i.e., whether managers either over- or underperforming in one period are likely to repeat their performance in subsequent periods. Similarly, persistence in acquisition performance indicates differences in acquisition skill.

Each of our research questions examines a different type of persistence. Acquirers with either a high or a low ability to create value should exhibit persistence in the combined returns on both targets and acquirers. Acquirers with either a large or a small capacity to extract value for their shareholders should demonstrate persistent bidder returns. And, acquirers with either high or low bargaining ability should exhibit persistence in the ratio of the bidder's dollar gain to the combined dollar gain of both target and bidder.

Our results indicate acquirers do indeed have different levels of skill. The paper's univariate analysis suggests differences in skill across bidders in both extracting value and bargaining. However, our multivariate analysis only provides evidence of skill differences in extracting value. These differences may reside with either the entire firm or specific executives. We find evidence of persistence only when successive deals occur under the same CEO, not

when the CEO changes. Thus, our findings suggest that some CEOs are better than others in extracting value from mergers and acquisitions.

While the strong statistical relation in our study may be due to our large dataset, we argue that it is economically significant as well. In particular, a firm that retains a CEO who was successful in her last deal earns, on average, 1.02% more on her next acquisition than does a firm retaining a previously unsuccessful CEO. This incremental return is far above the average return to acquirers and is equivalent to a \$175 million difference in value creation for the shareholders of an average-sized bidder.

Our research questions are important for a number of reasons. Acquiring managers, as well as their directors, financiers and advisors, would like to predict the success of future acquisitions. These parties should care whether the success of their previous acquisitions is predictive of future success. Target firms care about this persistence as well. If an acquirer that earned high returns on previous deals is likely to generate a high return on its next deal, the target may demand a larger takeover premium. More broadly, as mentioned in the BS (2003) quote above, there appears to be little research on differential skill anywhere in corporate finance, suggesting that results on merger persistence may inform other areas of the field.<sup>1</sup> Skill differences among CEOs are of particular interest. Models such as Gabaix and Landier (2008) imply that skilled CEOs merit high pay. Models of this sort are meaningful only if CEOs possess skill in the first place. Some authors argue that CEO pay reflects efficient contracting, while others conclude that CEO pay is due to rent extraction. Results on merger persistence at the CEO level may shed light on this debate.

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<sup>1</sup> Bertrand and Schoar (2003), themselves, do provide evidence that differences in managerial practices are systematically related to differences in performance.

While a few papers (Conn, Cosh, Guest and Hughes (2004), Croci (2005), and Deighton (2006)) study acquirers and persistence, these papers do not focus on skill differences. Thus, the contributions of these works are distinct from ours. To our knowledge, only a few papers examine the differences in acquisition skill: Holderness and Sheehan (1985) analyze the abilities of six individual investors to make acquisitions, Moeller, Schlingemann and Stulz (2005) investigate the change in acquisition performance of acquirers before and after large loss deals, Malmendier and Tate (2008) study the underperformance of overconfident CEOs, and Bao and Edmans (2009) study the skill of advisors to mergers and acquisitions. The focus of these papers is quite different from ours.

The rest of the paper is organized as follows. Our data are described in Section 2. Summary statistics are provided in the subsequent section. Firm-level and CEO-level results are presented in Sections 4 and 5, respectively. Robustness checks are conducted in Section 6. Conclusions are drawn in Section 7.

## **2. Data**

Following Fuller, Netter, and Stegemoller (FNS) (2002), our sample includes all mergers and acquisitions, both foreign and domestic, from Securities Data Corporation's (SDC) Mergers and Acquisitions Database meeting the following criteria:

- The announcement date occurred between January 1, 1981 and December 31, 2007.
- The deal was completed and had a disclosed dollar value.
- The value of the deal was at least \$1 million.
- The acquirer purchased more than 50% of the target firm in the transaction.

- The acquirer was a U.S. public company traded on the New York Stock Exchange, American Stock Exchange, or NASDAQ.
- The target was a private company, public company, or subsidiary of a public company.
- The takeover did not occur within two trading days of another takeover by the same bidder.
- The bidder's share price was above \$2 two trading days prior to the announcement.

Based on these criteria, we have 21,043 deals in our initial sample.

Our stock data come from the Center for Research in Security Prices (CRSP) U.S. Stock Database. For 720 of the deals in our sample, CRSP data on prices and/or returns are unavailable for the acquirer. These transactions are excluded from our analysis.

Since the announcement date for each deal is central to our analysis, we also exclude 1,421 bids for two additional reasons: (1) SDC can only estimate the announcement date and (2) SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target. The latter case typically occurs with competitive bidding. Lastly, we exclude 26 deals for which industry data are unavailable. Our final sample includes 18,876 mergers and acquisitions. In order to examine the impact of the acquirer's CEO on persistence, we obtain data on CEOs from the ExecuComp database, which begins in 1992 and covers only S&P 1500 firms. Merging the SDC and ExecuComp databases, we identify the acquirer's CEO at the time both the current and prior acquisitions were announced in 3,820 observations.

Each merger in our sample is classified by method of payment. Using the methodology of Loughran and Vijh (1997) and Schwert (2000), we assign deals in which the consideration is

all cash or all equity to the “Cash” and “Stock” categories, respectively. Takeovers which are funded with a combination of cash, equity, or other types of consideration are assigned to the “Combination” category. We classify acquisitions for which SDC does not report the type of consideration as “Unknown.”

### **3. Summary Statistics**

Table 1 shows the number of acquirers and the number and average dollar value of acquisitions of various types. The top row includes all acquisitions in our entire sample. The first two columns report 18,876 acquisitions from 6,089 acquirers. The next column indicates that the average deal size is \$339.5 million. Deal size is the value of the transaction, as reported by SDC, adjusted via the Consumer Price Index to 2007 dollars. The next eight columns break down the sample by method of payment. The number of stock mergers is barely greater than the number of cash mergers over our entire sample period, with the number of combination mergers exceeding the number of either stock or cash mergers. While fewer than the numbers in the other categories, a substantial number of mergers are of unknown consideration. On average, stock deals are largest in size and unknown deals are smallest.

The last six columns break down the sample by target listing status. About 60% of targets are private companies. There are somewhat more public targets than subsidiaries of other firms in the sample. The average size of public targets is many times greater than the average size of private targets, an unsurprising result. The average size of subsidiaries is slightly less than midway between the above two sizes. A year-by-year breakdown of this sample is provided in Appendix A1.



Since our paper measures persistence, we are interested in acquisitions where the acquirer had at least one prior acquisition in our sample. Summary statistics on this sample, termed Firm-Level, are provided in the second row of the table. There are 11,797 firms here. In terms of both percentage of observations and average deal size in each category, this row is similar to the previous one.

Summary statistics on the sample of all observations with available data on the acquiring firm's CEOs at the time of both the acquirer's current and prior acquisitions are presented in the third row, termed CEO-Level. Since our data on CEOs starts in 1992 and is only available for S&P 1500 firms, this sample is much smaller than the samples in the previous two rows. The average deal size in this row is about twice the average size in the previous row, due to the size difference between S&P 1500 and non-S&P 1500 firms.<sup>2</sup> As opposed to the previous two rows, the numbers of cash and stock deals both exceed the number of combination deals. In accordance with the previous two rows, the average deal size is still largest for stock acquisitions and lowest for unknown consideration. Private firms are still the most common targets and deal size is still largest for public deals.

The fourth row considers all observations where the acquirer's CEO is the same at the time of both the current and the prior acquisition. The fifth row considers all observations where the acquirer's CEOs at the time of the current and prior acquisitions are different. The number of acquisitions in these last two rows sum to the number in the third row. For the most part, both

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<sup>2</sup> Over the period 1992 to 2007, the median market capitalization of the bidder's equity two days before the announcement is \$3.5 billion for those firms in the sample with CEO data available for both the current and prior deals and \$442 million for those firms without CEO data. Both figures are adjusted via the Consumer Price Index to 2007 dollars.

the percentage of observations and the average deal sizes across the various categories in the last two rows are similar to those in the third row.

Various descriptive statistics are shown in Table 2. The acquirer's (target's) average cumulative abnormal return (CAR) is defined as the difference between the return on the acquirer's (target's) stock and the return on the CRSP value-weighted market index over the three-day period centered on the merger announcement date. This return is denoted as Bidder (Target) CAR(-1,+1) in the table.<sup>3</sup> The Target CAR of a subsidiary is based on the three-day abnormal return of the subsidiary's parent. One cannot obtain the CAR of a private target. The Combined CAR(-1,+1) is defined as:

$$\frac{MV(\text{Bidder}) \cdot \text{Bidder CAR}(-1,+1) + MV(\text{Target}) \cdot \text{Target CAR}(-1,+1)}{MV(\text{Bidder}) + MV(\text{Target})}, \quad (1)$$

where MV(Bidder) and MV(Target) are the market values of equity for the bidder and target, respectively, two days before the announcement.

The first column of the table shows various statistics on Combined CAR(-1,+1) for all deals (Panel A), all deals where there is at least one prior deal for the same acquirer in our sample (Panel B), and all deals where we have CEO data on both the deal and the acquirer's prior deal (Panel C). The average CAR is 1.26% over the entire sample period, though it is somewhat lower in the next two panels. The average CARs for all three panels are significantly positive.<sup>4</sup> The next column shows that the average Bidder CAR is 0.95% over the entire sample

<sup>3</sup> While we use the terms "bidder" and "target," our sample includes only successful, not failed, bids.

<sup>4</sup> Unless otherwise stated, the phrase "statistical significance" implies a p-value below 5%. All p-values in the paper come from two-sided test statistics.

though, again, the CARs are lower in the next two panels. The average CARs are significantly positive in the first two panels, but not the third. The mean Target CAR of 14.43% across the entire sample is much higher than the mean Bidder CAR, a finding consistent with previous academic work. The Target CARs are somewhat larger in Panels B and C than in Panel A.

We have far fewer observations for either the Combined CAR or the Target CAR than for the Bidder CAR since, as stated above, the Target CAR cannot be obtained when a private company is acquired. In addition, there is a lack of data for public and subsidiary targets, leading to even fewer observations for either Target CAR or Combined CAR than for Bidder CAR.<sup>5</sup>

The next column shows Bidder Share, defined as:

$$\frac{MV(\text{Bidder}) \cdot \text{Bidder CAR}(-1,+1)}{\text{Bidder CAR}(-1,+1) \cdot MV(\text{Bidder}) + \text{Target CAR}(-1,+1) \cdot MV(\text{Target})} \quad (2)$$

The average Bidder Share for the entire sample is 51.56% and is somewhat higher in Panels B and C. However, the sample sizes in this column are much smaller than those in the previous columns because we exclude all observations where either Bidder CAR or Combined CAR is negative. The reason for this exclusion can be explained in a simple example. Imagine that the Bidder CAR and the Target CAR are -1% and 3%, respectively, and both firms are of equal size. The Bidder Share is -0.5 (= -1% / (-1% + 3%)). If, alternatively, the Target CAR is 4%, the Bidder Share becomes -0.33 (= -1% / (-1% + 4%)). The Bidder Share rises from the first to the second example, though an increase in Target CAR is the only difference between

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<sup>5</sup> Moreover, we find four observations where CRSP provided returns, but not prices, for the target, resulting in four more observations for Target CAR than for Combined CAR.

examples. However, elimination of all acquisitions with negative Bidder CARs is itself problematical, so care must be exercised in interpreting our results.

The next column reports acquirer size. The acquirer's average market value of equity (two days prior to the announcement date) across the entire sample period is over \$6 billion, while the median value is above \$600 million. As in Table 1, size is presented in 2007 dollars. Size is much greater in Panel C. Since Panel C's sample includes only S&P 1500 firms, the increase in size is not surprising.

The last column presents the relative size of the target, defined as the ratio of the value of the deal, as reported by SDC, to the market value of the acquirer's equity two days prior to the announcement date. While the mean ratio is slightly above 23% for the entire sample, the median ratio is below 8%. These ratios are somewhat lower in Panels B and C.

#### **4. Firm-Level Persistence in Performance**

In this section, we relate the performance of an acquisition to the performance of the prior acquisition of the same acquirer.

##### *4.1 Univariate Results*

We first perform a univariate analysis before controlling for other factors. All mergers in our sample where the acquirer has a later acquisition of a public or subsidiary target are ranked by Combined CAR(-1,+1) and placed into ten decile portfolios. The second column in Table 3 displays the average Combined CAR for each of the ten deciles. As can be seen, the spread between the CAR in decile 10 and the CAR in decile 1 is quite large.

For each acquisition in our subsample, we then calculate the Combined CAR(-1,+1) for the acquirer's next acquisition of a public or subsidiary target. The average of these CARs for

each of the 10 deciles is displayed in column 3 of the table. The last row of the table shows the difference between the two extreme deciles. As can be seen, the difference of 1.02% is insignificantly different from zero.

Next, we repeat the exercise using Bidder CAR in the fourth and fifth columns. The difference in Bidder CAR between the extreme deciles is a statistically significant 1.26%. However, Bidder CAR is not monotonically increasing across the deciles, with the average CAR rising very little from decile 2 to decile 8.

The difference between the average CARs in the extreme deciles appears to be economically significant as well. The average Bidder CAR for the subsample where the acquirer made a prior acquisition is 69 basis points, a number not reported previously. With an average difference between the CARs in the extreme deciles of 1.26%, the average difference in performance between the extreme deciles is 183% ( $=1.26/0.69$ ) of the average Bidder CAR. This ratio suggests economic significance to us.

Finally, we rank all acquisitions in our sample on Bidder Share (-1, +1) and place them into ten deciles, as shown in the next-to-last column in the table. For each acquisition, we then calculate the Bidder Share for the next acquisition. The average Bidder Share for each decile is shown in the last column. The difference in extreme deciles is statistically significant, though the numbers in the column do not increase monotonically. We rerun the results for Bidder Share after including negative values for Bidder CAR (as long as the Combined CAR was positive), obtaining statistical significance at the 1% level.

Table 4 provides findings from regressions. The first three models of this table are simple regressions. In the first model, the Combined CAR(-1,+1) of the acquirer's current

acquisition is regressed on the Combined CAR(-1, +1) of the acquirer's prior acquisition.<sup>6</sup> The slope coefficient of 0.0518 is statistically insignificant, providing no evidence of persistence.<sup>7</sup> The Bidder's CAR(-1,+1) of the acquirer's current acquisition is regressed on the Bidder's CAR(-1,+1) of the acquirer's prior acquisition in Model 2. In Model 3, the Bidder's Share(-1,+1) of the acquirer's current acquisition is regressed on the Bidder's Share(-1,+1) of the acquirer's prior acquisition. The slope coefficients are significantly positive in these two models. Taken together, the univariate results in Tables 3 and 4 suggest persistence in Bidder CAR and Bidder Share, but not in Combined CAR.

#### *4.2 Multivariate Results*

Of course, much of the perceived persistence may be due to other variables. We report some basic multivariate regressions in the rest of Table 4. The prior literature provides many more regressions in which Bidder CAR is the dependent variable than those in which either Combined CAR or Bidder Share is the dependent variable. Accordingly, the literature provides better justification for control variables when Bidder CAR is the dependent variable. Thus, our explanations below for use of specific variables are more frequently cast in terms of their impact on Bidder CAR.

##### *4.2.1 Description of Control Variables*

We control for the following variables pertaining to the current acquisition in the rest of Table 4:

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<sup>6</sup> In the Combined CAR and Bidder Share models, the prior acquisition is defined as the Bidder's prior acquisition of a public or subsidiary target. There may be intervening acquisitions of private targets, for which a Combined CAR cannot be calculated. By contrast, in the Bidder CAR models, the prior acquisition is the one that immediately precedes the current one, regardless of the listing status of the target.

<sup>7</sup> For all regressions in the paper, p-values are calculated using clustered standard errors (see Petersen (2009)).

- **Status of Target Firm:** Hansen and Lott (1996), Chang (1998), and FNS (2002) indicate that acquirers' CARs are higher for acquisitions of both private firms and subsidiaries than for acquisitions of public firms.
- **Method of Payment:** Travlos (1987) and Franks, Harris, and Mayer (1988) indicate that acquirers' CARs are higher for takeovers of public targets funded with cash or other compensation than for those paid with equity. FNS (2002) show that CARs stemming from acquisitions of private firms and subsidiaries paid for with stock are higher than those paid for with cash or other compensation.

In order to control for both the status of target and the type of consideration, we create a set of dummy variables, each of which is set equal to 1 for a specific combination, e.g., an acquisition of a public company using cash, which we label "public/cash," an acquisition of a public company using stock, which we label "public/stock," and so on.

- **Same Industry (Acquirer and Target):** Morck, Shleifer, and Vishny (1990) argue that firms benefit from focus, suggesting that mergers where the acquirer and target are in the same industry might be more beneficial than mergers with the two parties in different industries. However, FNS (2002) do not find different returns across vertical, horizontal, and conglomerate mergers. We create a dummy variable equaling 1 if the target and acquirer are in the same industry and zero otherwise. Following FNS (2002), industry classifications are based on Fama and French (1997).
- **Time (in years) Since Last Acquisition, expressed as a natural logarithm:** For at least two reasons, one might expect poor performance from an acquisition following quickly on the heels of the prior one. First, managers are likely to pick the best acquisition first. Second, the next merger may occur while the acquirer is still "digesting" the first one.

However, one could argue that an acquirer gets “out of practice” if the time between acquisitions is too long. Aktas, de Bodt, and Roll (AdBR) (2008) find that larger CARs are associated with a longer time between deals.

- **Competitive Bids:** Based on the findings of Bradley, Desai, and Kim (1988), one would expect competition to reduce the acquirer’s performance. Accordingly, a dummy variable is set equal to one if SDC reports multiple bidders for the target and zero otherwise.
- **Acquirer Age (in years), expressed as a natural logarithm:** Gondhalekar (2002) finds that announcement-period bidder returns are positively related to a firm’s age.
- **Same Industry for Both Current and Prior Acquisitions:** A dummy variable is set equal to 1 if the targets of both an acquirer’s current and prior acquisitions come from the same industry and zero otherwise. This variable attempts to control for learning, although the expected sign is ambiguous. Work on the prior deal may yield gains in the current deal. Conversely, AdBR (2007) hypothesize that learning improves target selection, which in turn decreases the risk, and thus the return, associated with the current deal.
- **International:** Moeller and Schlingemann (2005) find that U.S. firms acquiring international targets experience significantly lower announcement returns than do acquirers taking over domestic firms. Accordingly, we set a dummy variable equal to 1 if SDC classifies the target as a non-U.S. firm and zero otherwise.
- **Hostile:** Servaes (1991) posits that hostile takeovers may reduce the gains to acquirers because the premium is larger or because takeover defenses have made the target firm less valuable. Accordingly, we set a dummy variable equal to 1 if SDC classifies the deal as hostile and zero otherwise.



- Year Dummies: In order to control for the market environment, we create a set of dummy variables where each one takes the value of 1 for a given calendar year and zero otherwise.
- Industry Dummies: We create a set of dummy variables where each one takes the value of 1 for a given industry and zero otherwise. As stated above, industry classifications are based on Fama and French (1997).
- Relative Size: Following Masulis, Wang, and Xie (2007) and Moeller, Schlingemann, and Stulz (2007), we define relative size as the ratio of the size of the deal to the market capitalization of the acquiring firm's equity two days before the announcement. Asquith, Bruner, and Mullins (1983) show that CARs are higher when the ratio of the size of the target to the size of the acquiring firm is higher.
- Acquirer Size, expressed as the natural logarithm of the market capitalization of the acquirer's equity two days prior to the announcement of the deal.

Controlling for both relative size and acquirer size is important in avoiding a potential bias in our regressions. To see this, imagine that the expected NPV per unit of merger investment is identical for all acquisitions across all acquirers. It is hard to claim true persistence in this world. Further, imagine a world with two types of acquirers, Type A (B), where all acquisitions are small (large) relative to the acquirer's market capitalization. Because of this difference in relative sizes, the expected CAR would be small (large) for any current or prior acquisition by a Type A (B) firm. Thus, a regression of the CAR of the current acquisition on the CAR of the prior acquisition would produce a positive slope coefficient, with Type A firms lining up closer to the origin than Type B firms. However, if relative size is added as an independent variable, its coefficient should be positive, reducing or eliminating the positive slope

coefficient on the CAR of the prior acquisition. To be on the safe side, we add the natural log of acquirer size as well.

#### 4.2.2 *Combined CAR*

The above control variables are introduced in Models 4 through 8 of Table 4. In Model 4, the coefficient on Prior CAR is insignificantly positive, consistent with the null hypothesis of no persistence in Combined CAR. The coefficient on relative size is significantly positive, and the coefficient on acquirer size is significantly negative. The coefficient on public/cash is significantly positive. The coefficients on the other control variables are all insignificantly different from zero.

While these results do not provide evidence of persistence, persistence may still occur among either bad or good acquirers. This separation is important; we want to know both whether acquirers whose last acquisition was poorly received by the capital markets should avoid future acquisitions and whether acquirers whose last acquisition was well-received should expand their merger activity. This question is analogous to persistence research in mutual funds. Studies showing performance persistence at the high end suggest that some managers have special ability. By contrast, studies indicating persistence only at the low end merely show that some managers regularly falter, perhaps because their expense ratios more than offset any stock-picking ability.

To this end, we create Winner (Loser) Dummy, which takes on the value of 1 if Combined CAR on the prior acquisition is positive (negative) and zero otherwise. In Model 5, these dummy variables are interacted with Prior Combined CAR(-1,+1). As can be seen, the coefficient on Prior CAR interacted with Winner Dummy is insignificantly positive and the coefficient on Prior CAR interacted with Loser Dummy is insignificantly negative, consistent

with the null hypothesis of no persistence among either prior losers or prior winners. The p-values on the coefficients of the control variables in Model 5 are quite similar to those in Model 4.

#### 4.2.3 Bidder CAR

Models 6 and 7 of Table 4 use Bidder CAR as the dependent variable. The coefficient on Prior CAR(-1,+1) is significantly positive in Model 6, though the size of the coefficient is lower here than in Model 2. Thus, we still find evidence of persistence, even after taking the various control variables into account. Except for public/stock and subsidiary/stock, the coefficients on all of the target/consideration dummies are significantly positive. The coefficient on the log of acquirer size is significantly negative. The coefficients on all other control variables are insignificantly different from zero. Because of the potential for bias mentioned above, we tried alternative functional forms of both relative size and acquirer size, always with similar results.

In Model 7, Winner (Loser) Dummy takes on a value of 1 if the acquirer's CAR on the prior acquisition is positive (negative) and zero otherwise. The two dummy variables are each interacted with Prior Bidder CAR. As can be seen, the coefficients are both insignificantly positive. Also, the p-values on the coefficients of the control variables in Model 7 are quite similar to those in Model 6.

#### 4.2.4 Bidder Share

In Model 8, the dependent variable is the bidder's share of the acquirer's current acquisition. The coefficient on Bidder's Share is insignificant, providing no evidence of persistence. In addition, among all of the control variables, only the coefficients on public/cash, public/stock, public/combo, subsidiary/cash, and acquirer size are significantly different from zero. We do not report results with winner and loser dummies, since only acquirers with

positive CARs are included. However, we also re-run Model 8 including acquirers with negative CARs, generating similar results.

Since we restricted the number of observations on Bidder Share, as described in Section 3, the lack of persistence in this variable is not surprising. However, the bidder's bargaining ability should also be reflected in the size of the takeover premium. Defining offer premium as the natural logarithm of the ratio of the initial offer price to the target's stock price 42 trading days before the announced deal, Betton, Eckbo, and Thorburn (BET) (2008) present a model of the determinants of this premium. Applying a similar model to acquisitions of public targets in our data, we find coefficient estimates close to those of BET. To test for persistence, we then include the premium paid on the prior acquisition of a public target as an additional explanatory variable. Because the restrictions on Bidder Share do not, for the most part, apply to the takeover premium, our sample size is 999, as opposed to the 194 observations in Model 8 of Table 4. Consistent with our Bidder Share findings, the coefficient on the prior premium is statistically insignificant, a result we do not present in tabular form. Taking the results on both Bidder Share and the offer premium together, we do not find evidence that acquirers exhibit persistence in bargaining ability.<sup>8</sup>

The results of Table 4 suggest that, while bidders show persistence in extracting value, they do not show persistence in either creating value or bargaining. However, the relation between Combined CAR, Bidder CAR and Bidder Share suggests that persistence in Bidder

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<sup>8</sup> We also estimate a modified version of BET's model with Target CAR (-1,+1) proxying for the premium. The coefficient on Prior Target CAR (-1,+1) is significantly positive here. However, we place little weight on this finding, given BET's argument that Target CARs are "noisy estimates of offer premiums."

CAR comes from persistence in either Combined CAR or Bidder Share. In particular, it follows from formulas (1) and (2) that:

$$\text{Combined CAR} \cdot \text{Bidder Share} = \frac{\text{Bidder CAR}(-1,+1) \cdot \text{MV}(\text{Bidder})}{\text{MV}(\text{Bidder}) \cdot \text{MV}(\text{Target})} \quad (3)$$

The only difference between this formula and Bidder CAR is that the denominator of the right-hand side of (3) contains MV(Target).

Perhaps the reason we find persistence in Bidder CAR, but not in either Combined CAR or Bidder Share, is just the difference in datasets. For example, the sample size for Model 6 in Table 4 is 11,797. The sample sizes for the same regression for Combined CAR and Bidder Share are only 1,625 and 194, respectively. To examine the impact of different samples, we rerun the Bidder CAR regressions with the smaller sample sizes, no longer finding significance in persistence. In addition, any calculation of Bidder Share is problematical. We showed earlier that if Bidder Share is negative, an increase in Target CAR actually raises Bidder Share. Our approach, to exclude all observations with a negative value for Bidder Share, appears to us to be the best of a bad lot.

## **5. CEO-Level Persistence in Performance**

Model 6 of Table 4 shows evidence of persistence in Bidder CAR. This persistence is likely to be stronger for firms experiencing little change and weaker for firms experiencing greater change. The present section focuses on the CEO, the individual generally assumed to be the most powerful in a typical company. We conjecture that persistence is stronger when the

acquirer's CEO is the same at the time of both the current and the prior acquisition than when the CEO changes. The effect of the CEO on persistence is investigated in Table 5.

### *5.1 Multivariate Results*

The Bidder CAR of the current deal is the dependent variable in all of the models of Table 5. The table uses data on CEOs from ExecuComp. Model 1 keeps all observations for which ExecuComp is able to identify the CEO of both the current and the prior deal. The independent variables in this model are the Bidder CAR of the prior deal and the control variables in Table 4. The coefficient of 0.0626 is significantly positive and higher than the coefficient of 0.0307 on Bidder CAR in Model 6 of Table 4. (The coefficients on the control variables for this and all other models in the table are not reported but are available from the authors upon request.)

We introduce two dummy variables in Model 2. "Same CEO Dummy" is set at 1 for observations where the acquiring firm's CEO is the same for both the current and the prior acquisition and zero otherwise. "Different CEO Dummy" is set at 1 for observations where the acquiring firm's CEO at the time of the current acquisition is different from the CEO at the time of the prior acquisition and zero otherwise. Consistent with Table 1, 3,427 of the 3,820 observations have a value of 1 for Same CEO Dummy and 393 have a value of 1 for Different CEO Dummy. These two dummy variables are separately interacted with Prior CAR. The coefficient on the interactive term with Same CEO Dummy is significantly positive, while the coefficient on the interactive term with Different CEO Dummy is insignificantly negative. Thus, while the results suggest persistence for firms retaining their CEO, we find no evidence of persistence for firms replacing their CEO. However, the lack of persistence for the replacement subsample may be due to the relatively small sample size of 393.

To test for a difference in persistence between the retention and replacement subsamples, Model 3 replaces the interactive term between Prior CAR and Different CEO Dummy with Prior CAR. Here, the coefficient on the interactive term involving Same CEO Dummy is still significantly positive. Since Models 2 and 3 are mere transformations of each other, the R-squares must be identical and the coefficients in Model 3 must conform to those in Model 2. Nevertheless, the results of Model 3 indicate that, even with the small sample size for the replacement subsample, persistence is significantly greater when the CEO is retained than when she is replaced.

In Model 4, Prior CAR is interacted with either the Winner or Loser Dummy and either of the two CEO Dummy variables, yielding a total of four interaction terms. The two interaction terms involving Same CEO are significantly positive at the 10% level. Thus, the regression provides (weak) evidence of persistence when both winner and loser firms retain their CEO. Model 5 replaces the two interactive terms involving Different CEO Dummy with interactive terms without a CEO dummy. The coefficient on the interactive term involving both Loser Dummy and Same CEO Dummy is significantly positive. As with Models 2 and 3, Model 5 is a mere transformation of Model 4. Nevertheless, the significant coefficient in Model 5 indicates that firms which replace their CEOs after an acquisition with a negative CAR do better on the next acquisition than firms whose CEOs are retained after an acquisition with a negative CAR. Lehn and Zhao (2006) find that firms are more likely to fire CEOs after an unsuccessful merger than a successful one. Our results suggest this replacement decision is often a good one.

So far, we have used the Bidder CAR of the prior acquisition as the measure of a firm's past acquisition performance. In Model 6, we replace this variable with the average Bidder CAR across all of the acquirer's past acquisitions for which the acquiring firm's CEO was the same as

the CEO for the current deal. On the one hand, error may well be reduced when using the average performance of many acquisitions rather than the performance of just the last one. On the other hand, persistence might be a short-term phenomenon. Even with the same CEO, turnover in lower-level executives, adjustments in firm policies, and changes in industry conditions may reduce the relation between the performance of today's acquisition and a far earlier one. The coefficient on Average Prior CAR with Same CEO in Model 6 is significantly positive, as was Prior CAR in Model 1.

Since the CAR of the prior acquisition enters the calculation of average CAR over past acquisitions, Model 6 cannot determine whether deals before the prior deal provide additional information on the success of the current deal. As an independent variable in Model 7, we introduce the mean CAR of all past deals, exclusive of the prior deal, where the CEO is the same as the CEO of the current deal. The coefficient on this variable is insignificantly negative, while the coefficient on Prior CAR interacted with Same CEO Dummy is significantly positive. Thus, while the success of the prior deal is predictive of the success of the current one, we do not find evidence that the success of deals before the prior one is predictive of the success of the current deal.

We believe that, overall, the results from Models 1 - 7 provide strong evidence that firms retaining their CEOs exhibit persistence in acquisition performance. However, CEO skill may not drive this persistence. Instead, a firm's decision to retain or remove a CEO may correlate with other firm policies that are the true source of persistence.<sup>9</sup> For example, Masulis, Wang, and Xie (MWX) (2007) argue that corporate governance impacts the profitability of acquisitions.

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<sup>9</sup> To separate firm and CEO skill, one could evaluate the persistence of CEOs making acquisitions at multiple companies. Unfortunately, only 2% of the CEOs in our sample make acquisitions at more than one company.



Perhaps the impact of CEO retention on persistence disappears once corporate governance is considered.

As with MWX, we use the Gompers, Ishii, and Metrick (2003) (GIM) index on 24 antitakeover provisions (ATPs) as a measure of corporate governance. A firm's GIM index is the number of antitakeover provisions for that firm. Since ATPs impede the removal of managers, stockholders in high-GIM firms are considered to have weaker rights. We obtain data on ATPs from the seven IRRC volumes, published in 1990, 1993, 1995, 1998, 2000, 2002 and 2006.

In Model 8 of Table 5, we add the GIM Index as an independent variable. As before, the coefficient on Prior CAR interacted with Same CEO Dummy is significantly positive and the coefficient on Prior CAR interacted with Different CEO Dummy is insignificantly different from zero. While the sign of the coefficient on the GIM Index is negative, as expected, the coefficient is insignificantly different from zero. Next, following the approach of both GIM and MWX, we classify each firm with an Index score of 5 and below as a "Democracy" firm and each firm with a score of 14 or above as a "Dictatorship" firm. Model 9 presents results with these two dummy variables added as independent regressors. Again, the coefficient on Prior CAR interacted with Same CEO is significantly positive, while the coefficient on Prior CAR interacted with Different CEO is insignificantly differently from zero. The coefficients on both of the governance variables are insignificantly different from zero. The results in Models 8 and 9 do not suggest that corporate governance can explain the impact of CEO retention on persistence.

We repeat the regressions in Table 5, first replacing Bidder CAR with Combined CAR and then replacing Bidder CAR with Bidder Share. None of the coefficients are statistically significant for either variable. Thus, we cannot reject the null hypothesis of no persistence for

either Combined CAR or Bidder Share. Because all the coefficients are insignificant here, we do not present these results in a table. In addition, we do not present any further results in this paper on either Combined CAR or Bidder Share.

## *5.2 Economic Significance*

Table 6 measures the economic significance of persistence in bidder performance. The first column of the table is based on the Firm-Level sample, as shown in Table 1, consisting of all transactions where the acquiring firm had a previous acquisition in the SDC database. The second column is based on the Same CEO sample, also shown in Table 1, consisting of all transactions where the acquirer's CEO is the same at the time of both the current and the acquirer's prior acquisition. Line 1 of the first column shows the cross-sectional standard deviation, 0.0723, of the independent variable, Prior Bidder CAR(-1,+1), for all observations where the acquiring firm had a previous acquisition. Line 2 presents the coefficient on Prior CAR from Model 6 of Table 4, 0.0307. Line 3 indicates that the impact of persistence is approximately 44 basis points. That is, Line 3 provides the difference in the expected Bidder CAR of the next acquisition between an acquirer with a Bidder CAR on its last acquisition one standard deviation above the mean and an acquirer with a Bidder CAR on its last acquisition one standard deviation below the mean.

The average market value of equity, measured two days before the acquisition, of bidders with at least one prior deal is \$6,475 million, as shown in Line 4. Since the impact of persistence, as given in Line 3, is 0.0044, the dollar impact of persistence is \$29 million ( $=0.0044 \times \$6,475$  million). That is, for a bidder of average size, the expected dollar gain on its next acquisition if it had a CAR on its previous acquisition one standard deviation above the

average would be \$29 million dollars more than the expected dollar gain if the acquirer had a CAR on its previous acquisition one standard deviation below the average.

We can also express our estimate of economic significance as a percentage. The average Bidder CAR for the subsample where the acquirer made a prior acquisition is 69 basis points, as reported in Panel B of Table 2. Our estimate of persistence, expressed as a percentage, is 64% (=  $0.0044/0.0069$ ) of the average return to an acquirer, as reported in Line 5.

Our estimate of economic significance is larger for the Same CEO sample, with line 5 showing a dollar value of persistence of \$175 million. This increase in dollar value occurs because both line 2 (the persistence estimate) and line 4 (bidder size) are higher in the second column than the first column. A percentage estimate of persistence would be quite high, since the impact of persistence, 0.0102, is much bigger than the (previously unreported) average CAR of 0.0001 for the Same CEO sample. Because both the dollar and the percentage estimates of persistence for both samples are substantial, we conclude that the persistence observed in our sample has economic significance.

## **6. Alternative Measures of Performance**

Our basic results on persistence in the Same CEO sample were presented in Table 5, with  $CAR(-1,+1)$  of the bidder's prior acquisition measuring past performance. We now present a few variations of the Same CEO bidder regressions in Table 7.<sup>10</sup> The log of the time since the last acquisition was introduced as an independent variable in Table 4. The coefficients were marginally significant (p-value below 10%) in the bidder regressions of Models 6 and 7,

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<sup>10</sup> None of the conclusions reached in Section 6 change when we estimate the models using the full sample instead of the CEO sample.

suggesting some evidence that time between acquisitions impacts bidder performance. In Model 3 of Table 5, however, the unreported coefficient on this control variable is statistically insignificant. Taken together, there is little evidence that the log of the time since the last acquisition impacts CAR. Nevertheless, this time variable may affect bidder persistence. In particular, as stated earlier, we would expect persistence to decrease with time since the last acquisition, due to both executive turnover and changes in firm policies and industry conditions. To test this conjecture, we interact the log of time variable with the  $CAR(-1,+1)$  on the prior acquisition and either Same CEO Dummy or Different CEO Dummy, adding the two variables to all the other variables in Model 3 of Table 5. The coefficients on Prior Bidder  $CAR(-1,+1)$  interacted with the CEO dummies are presented in the first two rows of Table 7. (As with the results in Table 5, the coefficients on all the control variables are not shown in this regression or in any other regression of Table 7.) As can be seen, the coefficient on Prior  $CAR \times$  Same CEO Dummy is significantly positive, indicative of persistence. The coefficient on Prior  $CAR \times$  Different CEO Dummy is marginally significant, but of the wrong sign. More importantly, the coefficients on the two variables involving log of time are insignificant. Thus, our results do not suggest that persistence declines with time between acquisitions.

However, in order to focus on time between acquisitions in another way, we rerun Model 3 of Table 5, ignoring any observations when the prior acquisition occurred more than five years before the current acquisition. The coefficient on Prior  $CAR \times$  Same CEO Dummy, reported in the second row of Table 7, is significantly positive and the coefficient on Prior  $CAR \times$  Different CEO Dummy is insignificantly negative. These results are similar to those in Model 3 of Table 5, indicating little impact from the deletion of mergers more than five years earlier.

We observed in Table 3 that a conclusion of persistence may be due to behavior in the tails of the distribution of Prior CAR. To explore this possibility further, we introduce the cube of Prior CAR  $(-1,+1)$  interacted with each of the CEO Dummies as two additional independent variables, with the results displayed in the third row of Table 7. Though the coefficient on Prior CAR  $\times$  Same CEO Dummy is significantly positive, again indicative of persistence, the coefficient on the cubed variable is insignificant. Thus, we do not find evidence of unusual behavior in the tails.

Academic studies in finance frequently exclude both financial firms and utilities. In this vein, we rerun Model 3 of Table 5, excluding acquirers in the Fama and French (1997) industries of banking, insurance, real estate, trading, and utilities. The results, reported in the fourth row of Table 7, still show a significant coefficient on Prior CAR  $\times$  Same CEO Dummy.

Just as persistence may be high if two acquisitions occur within a short time frame, persistence may be high if consecutive acquisitions occur in the same industry. To this end, we create a dummy variable with a value of 1 if the current and the prior acquisitions are in the same Fama and French industry and 0 otherwise. We then interact this dummy variable with Prior CAR and one of the two CEO Dummies. The results are shown in the fifth row of Table 7. Again, the coefficient on Prior CAR  $\times$  Same CEO Dummy is significantly positive, indicative of persistence. However, the coefficients on the variables involving Same Industry Dummy are insignificant, providing no evidence of additional persistence when the current and the prior target are in the same industry.

There is a possible inconsistency in the models of Table 4. The performance of any specific current acquisition can be viewed as the difference between the CAR from the acquisition and the fitted value from the regression. Thus, performance of the current acquisition

takes into account the effect of control variables. To be consistent, one might measure the performance of the prior acquisition as the difference between its CAR and the fitted value from a regression employing control variables. To this end, we regress  $CAR(-1,+1)$  on our control variables,<sup>11</sup> using all acquisitions in our sample. We then calculate a residual  $CAR(-1,+1)$  for each acquisition in our sample as the difference between the CAR and the fitted value from the regression. Next, Model 3 in Table 5 is rerun where, for each prior acquisition,  $CAR(-1,+1)$  is replaced by Residual  $CAR(-1,+1)$ . As can be seen in row 6 of Table 7, the coefficient on Prior  $CAR \times$  Same CEO Dummy is significantly positive while the coefficient on Prior  $CAR \times$  Different CEO Dummy is insignificantly negative. The coefficients on these two variables are similar to their values in Model 3 of Table 5. Because the residual approach provides little difference from this model, we use  $CAR(-1,+1)$ , rather than Residual  $CAR(-1,+1)$ , in all remaining work.

If the market is efficient, the effect of an acquisition on a firm's market value should occur upon announcement. It is unclear in SDC whether the source of the initial announcement of any particular acquisition is a periodical, e.g., *The Wall Street Journal*, or a press release. If the source is a periodical, the precipitating announcement could have occurred either before or during business hours of the previous day, resulting in price movement on day  $-1$ , or after business hours of the previous day, resulting in price movement on day 0. If the source is a press release, the release could have occurred before or during business hours, resulting in price movement on day 0, or the release could have occurred after business hours, resulting in price movement on day 1.

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<sup>11</sup> Since many of these acquisitions are the first in the series of deals for a given bidder, we are unable to include the time since last acquisition and same industry (current and prior targets) as control variables.

Because of this timing issue, market efficiency implies that market impact occurs over the three-day interval from day  $-1$  to day  $+1$ . Thus, we have used  $CAR(-1,+1)$  as our performance measure. However, since previous authors sometimes measure performance over other periods, we repeat Model 3 of Table 5 using the performance measure  $CAR(-2,+2)$  in row 7 of Table 7. As with Model 3 of Table 5, the coefficient on  $\text{Prior CAR} \times \text{Same CEO Dummy}$  is significantly positive and the coefficient on  $\text{Prior CAR} \times \text{Different CEO Dummy}$  is insignificantly negative.

Morck, Shleifer, and Vishny (MSV) (1990, p. 33) conjecture that “Bad managers might make bad acquisitions simply because they are bad managers.” MSV measure managerial ability by industry-adjusted operating income growth, defined as EBITDA in year  $-1$  minus EBITDA in year  $-4$  divided by EBITDA in year  $-4$ . The empirical evidence in their Tables 3 and 5 suggests that the success of an acquisition is indeed affected by the ability of the acquiring firm’s managers. We introduce MSV’s measure of managerial ability in row 8 of Table 7. The coefficient on this variable is insignificantly different from zero. More importantly, the coefficient on  $\text{Prior CAR}$  interacted with  $\text{Same CEO Dummy}$  is significantly positive, and the coefficient on  $\text{Prior CAR}$  interacted with  $\text{Different CEO Dummy}$  is insignificantly negative.

Jovanovic and Rousseau (2002), Moeller, Schlingemann, and Stulz (2004), and Dong, Hirshleifer, Richardson, and Teoh (2006) all hypothesize that a high Tobin’s  $Q$  indicates a well-run firm and use market-to-book ( $M/B$ ) as a proxy for Tobin’s  $Q$ . Chung and Pruitt (1994) show that this proxy is highly correlated with the more computationally-complicated Lindenberg and Ross(1981) measure for  $Q$ . Accordingly, we also measure the quality of the acquirer’s management by  $M/B$  in row 9, defined in our paper as the ratio of the market value of the acquirer’s equity to the book value of the acquirer’s equity at the end of the fiscal year prior to

the announced deal. The negative coefficient on M/B, while marginally significant, is of the wrong sign. Again, the coefficient on Prior CAR interacted with Same CEO Dummy is significantly positive, while the coefficient on Prior CAR interacted with Different CEO Dummy is insignificantly negative.

The regressions in Table 5 likely suffer from an errors-in-the-variables (EIV) problem. That is, we want to regress the impact of the current acquisition on the acquirer's value on the impact of the prior acquisition on the acquirer's value. We measure impact by CAR. Since, in addition to the merger announcement, other information concerning the acquirer's value is simultaneously released, CAR measures impact with error. Error is likely greater for acquisitions of small relative size, because the NPV of a small acquisition is presumably low relative to the dollar impact of other news. EIV problems arise when the independent variable, not the dependent variable, is measured with error. Thus, one might expect to minimize the EIV problem by examining firms where the relative size of the prior acquisition is high.

To this end, we rank all firms on the relative size of their prior acquisitions and select firms in the highest relative size quintile portfolio. Then we rerun Model 3 of Table 5. The findings, which are presented in row 10, indicate that the coefficient on Prior CAR  $\times$  Same CEO Dummy is insignificantly different from zero. Thus, our attempt to reduce the EIV bias has led to weaker, not stronger, results, perhaps due to a smaller sample size.

All of our empirical results so far involve completed deals. However, one could argue that all deals, both completed and withdrawn, should be included because the market does not know as of the announcement date whether the deal will actually be completed. We therefore rerun Model 2 of Table 5 for all deals in row 11. Again, the coefficient on Prior CAR interacted



with Same CEO Dummy is significantly positive while the coefficient on Prior CAR interacted with Different CEO Dummy is insignificantly negative.

Exogenous control variables were added to the various models of Table 5 to make the coefficient on Prior CAR more meaningful. However, some of the control variables are endogenous. For example, firms can choose between acquiring public and private companies. Since prior research (see Hansen and Lott (1996), Chang (1998), and FNS (2002)) indicates that the average CAR to acquirers is higher if the target is private, one can view firms as exhibiting positive (negative) skill if they repeatedly acquire private (public) companies.

We test for repetition in Panels A and B of Table 8, restricting our sample to observations where the acquirer's CEO is the same at the time of both the current and the prior acquisition. On the vertical (horizontal) dimension of the 3×3 table in Panel A, the target of each acquirer's previous (current) acquisition is classified as public, private, or subsidiary. In an analogous manner, the target is classified in Panel B as either public or non-public, where a non-public target is either a private firm or a subsidiary. Each of the cells reports the number of acquisitions. The chi-square statistics in both panels are significant, implying that acquirers tend to repeat acquiring the same type of target. Thus, the findings of Table 8 can be viewed as further evidence of differences in skill across acquirers.

The results of a similar analysis for consideration paid indicate that firms tend to repeat the type of consideration from one merger to the next. Prior research shows that the average Bidder CAR is higher when cash, rather than stock, is used (see Travlos (1987) and Franks, Harris, and Mayer (1988)). However, research by Travlos (1987) and Shleifer and Vishny (2001) suggests that firms are more likely to issue stock (cash) when their companies are overvalued (undervalued). Thus, the difference in CAR here may be due to signaling, not to a

difference in value added from the acquisition. Because of this, firms repeatedly acquiring with cash (stock) are not necessarily exhibiting positive (negative) skill. We therefore do not present our results in a table.

## **7. Conclusions**

Our paper tests for skill differences among acquirers by relating the performance of a firm's current acquisition to the performance of the firm's previous acquisitions, where performance is measured by stock returns around the merger announcement. In other words, we look for persistence in performance. We examine acquirer performance from three perspectives: the ability to create value, the ability to extract value, and the ability to bargain. Accordingly, we investigate persistence in the combined return, the bidder return, and the ratio of bidder return to combined return.

In univariate regressions, we find evidence of differential skill among acquirers in both extracting value and bargaining. However, multivariate analysis only provides evidence of skill differences in extracting value. Skill differences in value extraction may reside with either the entire firm or specific executives. We find persistence in performance if the acquirer has the same CEO for both the current and the prior acquisition but not if the acquirer has different CEOs for the two acquisitions. Thus, skill appears to arise from the CEO, not the acquirer as a whole.

Of course, the removal of the CEO may correlate with another firm policy that is the true source of persistence. To examine this possibility, we consider measures of corporate governance, a likely candidate for the true source. Since our results on the CEO still hold in the presence of corporate governance measures, the CEO, not the corporate governance structure,

appears to be the source for the skill differences in mergers and acquisitions. Nevertheless, one cannot rule out the possibility that other executives or other firm policies are the source of persistence in performance.

Our analysis also estimates the value a skillful CEO extracts for its shareholders. An acquirer that was successful in its last deal and kept its CEO earns, on average, 1.02% more on its next acquisition than does a previously unsuccessful firm which also kept its CEO. This incremental return is equivalent to a \$175 million difference in value creation for the shareholders of an average-sized bidder. In our opinion, these differences in acquisition skill are economically meaningful.

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## Appendix A1

### Numbers and Dollar Values for Various Classifications of Acquisitions

This table reports the number and dollar values of acquisitions classified by type of consideration, status of target, and calendar year. Sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. Number of acquirers is the number of firms in each year making at least one acquisition. Consideration in a cash (stock) merger is all cash (stock). Combination deals use more than one type of consideration. Consideration is classified as Unknown when SDC does not report the method of payment. There are two columns for each type of consideration and each type of target. The first column includes the number of acquisitions, and the second column shows the dollar value (in billions) of those acquisitions, adjusted for inflation using CPI and presented in 2007 dollars.

Period	Number of Acquirers	Acquisitions															
		Consideration										Target					
		All	Cash		Stock		Combination		Unknown		Private		Public	Subsidiary			
1981	175	212	\$71.4	2	\$0.3	1	\$0.6	207	\$47.4	2	\$23.1	141	\$12.5	44	\$52.0	27	\$6.9
1982	226	295	\$47.1	0	\$0.0	0	\$0.0	295	\$47.1	0	\$0.0	196	\$12.5	62	\$20.1	37	\$14.4
1983	327	402	\$61.9	0	\$0.0	0	\$0.0	402	\$61.9	0	\$0.0	234	\$17.3	60	\$26.2	108	\$18.4
1984	384	465	\$103.3	7	\$10.4	7	\$3.7	437	\$86.1	14	\$3.1	231	\$9.5	105	\$41.3	129	\$52.4
1985	178	201	\$107.6	66	\$41.0	43	\$19.7	42	\$40.0	50	\$6.9	49	\$4.3	90	\$84.8	62	\$18.5
1986	264	300	\$89.9	63	\$22.6	82	\$22.4	46	\$17.6	109	\$27.3	132	\$16.4	95	\$38.2	73	\$35.4
1987	248	277	\$59.0	64	\$13.8	76	\$13.6	53	\$23.5	84	\$8.2	110	\$10.0	87	\$32.8	80	\$16.2
1988	254	278	\$66.4	69	\$25.2	50	\$10.2	54	\$13.8	105	\$17.2	100	\$13.6	85	\$26.4	93	\$26.4
1989	296	335	\$109.5	78	\$19.5	92	\$34.3	71	\$45.8	94	\$9.8	150	\$10.2	83	\$58.6	102	\$40.6
1990	255	291	\$33.5	61	\$12.4	65	\$7.4	65	\$6.6	100	\$7.1	142	\$8.8	54	\$10.8	95	\$13.9
1991	300	359	\$46.0	74	\$5.0	91	\$22.0	113	\$15.6	81	\$3.4	192	\$8.7	65	\$23.2	102	\$14.1
1992	432	523	\$49.7	81	\$7.8	173	\$21.5	146	\$14.0	123	\$6.4	307	\$14.3	86	\$22.8	130	\$12.5
1993	569	727	\$121.1	139	\$11.0	251	\$51.0	188	\$52.0	149	\$7.2	443	\$16.0	106	\$56.6	178	\$48.4
1994	744	973	\$134.1	190	\$33.0	304	\$49.5	289	\$39.7	190	\$11.9	578	\$33.2	190	\$73.0	205	\$27.8
1995	821	1,051	\$212.0	226	\$30.5	339	\$88.6	256	\$75.9	230	\$17.0	604	\$27.7	217	\$151.1	230	\$33.2
1996	916	1,228	\$291.4	227	\$27.0	423	\$112.1	327	\$133.4	251	\$18.8	792	\$45.3	235	\$198.5	201	\$47.5
1997	1,072	1,521	\$383.6	247	\$39.0	510	\$211.5	446	\$112.1	318	\$21.0	995	\$62.5	316	\$241.7	210	\$79.4
1998	1,119	1,618	\$865.6	306	\$65.0	497	\$515.3	476	\$264.7	339	\$20.7	1,048	\$68.6	369	\$525.4	201	\$271.6
1999	982	1,319	\$626.3	261	\$47.2	449	\$306.7	326	\$251.0	283	\$21.4	825	\$76.8	341	\$410.2	153	\$139.2
2000	908	1,204	\$859.7	216	\$40.4	441	\$496.7	328	\$298.0	219	\$24.6	804	\$132.8	266	\$407.1	134	\$319.9
2001	614	749	\$331.4	186	\$28.4	167	\$62.0	243	\$229.2	153	\$11.8	437	\$37.5	207	\$167.8	105	\$126.1
2002	537	654	\$175.6	221	\$29.2	80	\$91.1	227	\$44.9	126	\$10.4	400	\$28.2	146	\$124.5	108	\$22.8
2003	539	651	\$248.9	199	\$36.3	91	\$114.4	211	\$82.0	150	\$16.2	404	\$31.8	155	\$172.5	92	\$44.6
2004	657	841	\$280.3	313	\$48.0	75	\$143.5	279	\$73.8	174	\$14.9	575	\$47.3	171	\$210.4	95	\$22.6
2005	660	839	\$396.0	324	\$75.0	57	\$96.4	295	\$209.5	163	\$15.2	589	\$66.5	153	\$289.7	97	\$39.8
2006	672	833	\$414.5	362	\$86.9	54	\$65.7	265	\$241.0	152	\$20.8	575	\$55.8	175	\$340.0	83	\$18.7
2007	571	730	\$222.1	308	\$116.5	21	\$14.7	247	\$73.3	154	\$17.5	541	\$49.0	136	\$132.7	53	\$40.3
All	6,089	18,876	\$6,407.8	4,290	\$871.3	4,439	\$2,574.5	6,334	\$2,599.8	3,813	\$362.1	11,594	\$917.4	4,099	\$3,938.8	3,183	\$1,551.6

## Appendix A2

### Control Variables

Control Variable	Description
Public/Cash	Binary variable equal to one if SDC identifies the target as public and SDC's percent cash variable equals 100%; otherwise, equal to zero.
Public/Stock	Binary variable equal to one if SDC identifies the target as public and SDC's percent stock variable equals 100%; otherwise, equal to zero.
Public/Combination	Binary variable equal to one if SDC identifies the target as public, method of payment is known, and neither SDC's percent cash variable nor percent stock variable equals 100%; otherwise, equal to zero.
Public/Unknown	Binary variable equal to one if SDC identifies the target as public and method of payment is unknown.
Private/Cash	Binary variable equal to one if SDC identifies the target as private and SDC's percent cash variable equals 100%; otherwise, equal to zero.
Private/Stock	Binary variable equal to one if SDC identifies the target as private and SDC's percent stock variable equals 100%; otherwise, equal to zero.
Private/Combination	Binary variable equal to one if SDC identifies the target as private, method of payment is known, and neither SDC's percent cash variable nor percent stock variable equals 100%; otherwise, equal to zero.
Private/Unknown	Binary variable equal to one if SDC identifies the target as private and method of payment is unknown.
Subsidiary/Cash	Binary variable equal to one if SDC identifies the target as subsidiary and SDC's percent cash variable equals 100%; otherwise, equal to zero.
Subsidiary/Stock	Binary variable equal to one if SDC identifies the target as subsidiary and SDC's percent stock variable equals 100%; otherwise, equal to zero.
Subsidiary/Combination	Binary variable equal to one if SDC identifies the target as subsidiary, method of payment is known, and neither SDC's percent cash variable nor percent stock variable equals 100%; otherwise, equal to zero.
Subsidiary/Unknown	Binary variable equal to one if SDC identifies the target as subsidiary and method of payment is unknown.

<b>Control Variable</b>	<b>Description</b>
Relative Size	The ratio of the deal value (as reported by SDC) to the market value of the acquirer's equity two days prior to the announcement. Per SDC, deal value is the total value of consideration paid by the acquirer, excluding fees and expenses. The dollar value includes the amount paid for all common stock, common stock equivalents, preferred stock, debt, options, assets, warrants, and stake purchases made within six months of the announcement date of the transaction.
Same Industry: Acquirer/Target	Binary variable equal to one if acquirer and target belong to the same industry (Fama and French 48).
Log(Acquirer Size)	Natural log of the market value of the acquirer's equity two days prior to the announcement, adjusted for inflation using CPI and presented in 2007 dollars.
Log(Acquirer Age)	Natural log of the time between the announcement and the date of the acquirer's first appearance in CRSP.
Competitive Bid	Binary variable equal to one if SDC's Bidder Count variable is greater than one; otherwise, equal to zero.
Log(Time Since Last Acquisition)	Natural log of the number of years since the acquirer's last acquisition. If the prior deal is excluded from the sample, then time since last acquisition is set to missing and the current acquisition is excluded from the analysis.
Same Industry: Prior Acquisition	Binary variable equal to one if the current target and the target in the prior acquisition belong to the same industry (Fama and French 48).
International Target	Binary variable equal to one if the target is a non-U.S. firm (based on SDC's target nation code); otherwise, equal to zero.
Hostile	Binary variable equal to one if the attitude of the deal is hostile (as reported by SDC); otherwise, equal to zero.

**Table 1**  
**Numbers and Dollar Values for Various Classifications of Acquisitions**

This table reports the number and mean dollar value of acquisitions calculated over five samples, each of which is classified by type of consideration and status of target. All deals ("All") comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. It excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. The "Firm-Level" sample is a subset of "All" deals; it includes transactions for which there is at least one acquisition preceding the current deal and the prior merger is included in the "All" deal sample. "CEO-Level" includes all deals from the "Firm-Level" sample for which we are able to identify the acquiring firm CEO of the current and prior deal using ExecuComp data. ExecuComp data begins in 1992, so all of the CEO samples ("CEO-Level", "Same CEO", "Diff CEO") include deals announced between 1992 and 2007. The "Same CEO" ("Diff CEO") sample is a subset of "CEO-Level" and includes acquisitions for which the acquiring firm CEO is the same (different) in the current and prior deals. Number of acquirers is the number of firms in each year making at least one acquisition. Consideration in a cash (stock) merger is all cash (stock). Combination deals use more than one type of consideration. Consideration is classified as Unknown when SDC does not report the method of payment. There are two columns for each type of consideration and each type of target. The first column includes the number of acquisitions, and the second column shows the mean dollar value (in millions) of those acquisitions, adjusted for inflation using CPI and presented in 2007 dollars. The value of an acquisition is the total consideration paid for the target, excluding fees and expenses, as reported by SDC.

Sample	Number of Acquirers	Acquisitions															
		All		Consideration				Target									
		Cash	Stock	Combination	Unknown	Private	Public	Subsidiary									
All	6,089	18,876	\$339.5	4,290	\$203.1	4,439	\$580.0	6,334	\$410.5	3,813	\$95.0	11,594	\$79.1	4,099	\$960.9	3,183	\$487.5
Firm-Level	3,566	11,797	\$378.8	2,935	\$215.9	2,887	\$640.7	3,582	\$489.0	2,393	\$97.9	7,186	\$85.7	2,785	\$1,022.5	1,826	\$550.7
CEO-Level	1,053	3,820	\$762.8	1,254	\$321.9	948	\$1,445.7	829	\$1,257.0	789	\$123.7	2,063	\$144.2	1,166	\$1,712.4	591	\$1,048.6
Same CEO	979	3,427	\$761.6	1,102	\$325.8	892	\$1,390.0	723	\$1,277.2	710	\$123.4	1,850	\$145.3	1,056	\$1,674.9	521	\$1,099.0
Diff CEO	347	393	\$773.2	152	\$293.5	56	\$2,332.1	106	\$1,119.5	79	\$126.4	213	\$135.0	110	\$2,072.5	70	\$673.3

## **Table 2**

### **Bidder and Target Performance for Various Classifications of Acquisitions**

This table reports bidder and target performance for three samples of acquisitions, each of which is classified by type of consideration and status of target. "All Deals" comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. It excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. The "Firm-Level with Prior Deal" sample is a subset of "All Deals"; it includes transactions for which there is at least one acquisition preceding the current deal and the prior merger is included in the "All Deal" sample. The "CEO-Level with Prior Deal" sample includes all deals from the "Firm-Level with Prior Deal" sample for which we are able to identify the CEO of the current and prior deal using ExecuComp data. ExecuComp data begins in 1992, so the "CEO-Level with Prior Deal" sample includes deals announced between 1992 and 2007. Bidder (Target) Cumulative Abnormal Return (CAR (-1,+1)) is the difference between the return on the acquirer's (target's) stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. Combined CAR (-1,+1) is the weighted-average cumulative abnormal return on the bidder's and target's stocks from the day before the merger announcement to the day after the announcement. The weights are based on the market values of the bidder's and target's equity (the equity of the target's parent for subsidiaries) two days prior to the announcement. Target return and pricing data are only available for public and subsidiary targets. Bidder Share is the ratio of the value created for the bidder's shareholders (Bidder CAR (-1, +1)) multiplied by the market value of the bidder's equity two days prior to the announcement) to the value created for the stockholders of the combined firm. The Bidder Share sample is limited to deals that create value for the combined firm (Combined CAR (-1,+1) is positive), do not destroy value for the bidder (Bidder CAR (-1,+1) is non-negative) and have Bidder Share less than 100%. Acquirer size is the market capitalization of the bidder's equity two days before the announcement date of the deal, adjusted for inflation using CPI and presented in 2007 dollars. Relative size is defined as the ratio of the size of the deal to the market capitalization of the acquiring firm's equity. N is the number of observations.

<b>Period</b>		<b>Combined CAR (-1,+1)</b>	<b>Bidder CAR (-1,+1)</b>	<b>Target CAR (-1,+1)</b>	<b>Bidder Share (-1,+1)</b>	<b>Acquirer Size (\$ millions)</b>	<b>Relative Size</b>
Panel A: All Deals							
1981-2007	Mean	1.26%	0.95%	14.43%	51.56%	\$6,078	23.31%
	Median	0.70%	0.35%	8.19%	51.52%	\$608	7.26%
	p-value	(0.000)	(0.000)	(0.000)	(0.000)		
	N	4,727	18,876	4,731	1,693		
Panel B: Firm-Level with Prior Deal							
1981-2007		1.06%	0.69%	15.84%	54.85%	\$7,710	18.37%
		0.61%	0.21%	10.33%	55.80%	\$884	5.70%
		(0.000)	(0.000)	(0.000)	(0.000)		
		3,056	11,797	3,059	1,075		
Panel C: CEO-Level with Prior Deal							
1992-2007		0.59%	0.04%	18.68%	61.77%	\$19,638	10.96%
		0.24%	-0.05%	13.42%	66.64%	\$3,543	2.75%
		(0.000)	(0.705)	(0.000)	(0.000)		
		1,240	3,820	1,240	436		

**Table 3**  
**Bidder and Target Performance for Acquisitions**  
**Classified by Performance of Bidder's Prior Acquisition**

This table reports the performance of bidders and targets for deciles ranked by performance of bidder's prior acquisition. All mergers in our sample where the acquirer has a later acquisition are ranked by Combined CAR, Bidder CAR, and Bidder Share, respectively, and placed into ten decile portfolios. Sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. Bidder (Target) Cumulative Abnormal Return (CAR (-1,+1)) is the difference between the return on the acquirer's (target's) stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. Combined CAR (-1,+1) is the weighted-average cumulative abnormal return on the bidder's and target's stocks from the day before the merger announcement to the day after the announcement. The weights are based on the market values of the bidder's and target's equity (the equity of the target's parent for subsidiaries) two days prior to the announcement. Target return and pricing data are only available for public and subsidiary targets. Bidder Share is the ratio of the value created for the bidder's shareholders (Bidder CAR (-1, +1)) multiplied by the market value of the bidder's equity two days prior to the announcement) to the value created for the stockholders of the combined firm. The Bidder Share sample is limited to deals that create value for the combined firm (Combined CAR (-1,+1) is positive), do not destroy value for the bidder (Bidder CAR (-1,+1) is non-negative) and have Bidder Share less than 100%. Prior CAR (-1, +1) is the CAR on the acquirer's last acquisition preceding the current merger. Prior Bidder's Share (-1, +1) is similarly defined. p-values are shown in parentheses.

Decile (Prior Acquisition)	Mean Prior Combined CAR (-1,+1)	Mean Combined CAR (-1,+1)	Mean Prior Bidder CAR (-1,+1)	Mean Bidder CAR (-1,+1)	Mean Prior Bidder Share (-1,+1)	Mean Bidder Share (-1,+1)
1	-7.56% (0.000)	0.42% (0.340)	-10.58% (0.000)	0.19% (0.434)	5.61% (0.000)	38.33% (0.000)
2	-2.94% (0.000)	0.41% (0.347)	-4.17% (0.000)	0.72% (0.026)	15.55% (0.000)	60.52% (0.000)
3	-1.60% (0.000)	0.61% (0.097)	-2.27% (0.000)	0.58% (0.001)	25.38% (0.000)	47.13% (0.000)
4	-0.67% (0.000)	0.90% (0.005)	-1.05% (0.000)	0.37% (0.036)	36.93% (0.000)	52.67% (0.000)
5	0.20% (0.000)	0.60% (0.090)	-0.10% (0.000)	0.30% (0.131)	51.01% (0.000)	55.72% (0.000)
6	1.04% (0.000)	1.60% (0.000)	0.87% (0.000)	0.70% (0.000)	64.05% (0.000)	52.36% (0.000)
7	1.97% (0.000)	1.03% (0.005)	2.02% (0.000)	0.70% (0.000)	78.03% (0.000)	59.60% (0.000)
8	3.13% (0.000)	0.43% (0.134)	3.54% (0.000)	0.84% (0.000)	85.81% (0.000)	60.68% (0.000)
9	5.14% (0.000)	0.98% (0.025)	6.19% (0.000)	1.08% (0.000)	93.35% (0.000)	73.76% (0.000)
10	12.16% (0.000)	1.43% (0.015)	15.34% (0.000)	1.45% (0.000)	98.54% (0.000)	77.82% (0.000)
Diff of Means Decile 1 v. Decile 10		1.02% (0.166)		1.26% (0.000)		39.48% (0.000)
Observations	1,625	1,625	11,797	11,797	194	194

**Table 4**  
**Regressions Examining Firm-Level Persistence in Acquisition Performance**

This table reports results from regressions of the performance of the bidder's current acquisition the performance of the prior acquisition of the bidder and various control variables. Sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. Bidder (Target) Cumulative Abnormal Return (CAR (-1,+1)) is the difference between the return on the acquirer's (target's) stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. The dependent variable in the Combined CAR models is the weighted-average cumulative abnormal return (CAR) of the bidder's and target's stocks from the day before the merger announcement to the day after the announcement (-1, +1). The weights are based on the market values of the bidder's and target's equity (the equity of the target's parent for subsidiaries) two days prior to the announcement. Combined Return regressions are limited to acquisitions of public and subsidiary targets. The dependent variable in the Bidder CAR models is Bidder CAR (-1, +1). The Bidder CAR models include all private, public, and subsidiary targets. The Bidder Share sample is limited to deals that create value for the combined firm (Combined CAR (-1,+1) is positive), do not destroy value for the bidder (Bidder CAR (-1,+1) is non-negative) and have Bidder Share less than 100%. The dependent variable in the Bidder Share models is the ratio of the value created for the bidder's shareholders (Bidder CAR (-1, +1) multiplied by the market value of the bidder's equity two days prior to the announcement) to the value created for the stockholders of the combined firm. Prior CAR (-1, +1) is the CAR on the acquirer's last acquisition preceding the current merger. Prior Bidder's Share (-1, +1) is similarly defined. The Winner (Loser) dummy equals one if the prior CAR is positive (non-positive) and zero otherwise. Combined Return and Bidder Return models include year and industry dummy variables, for which the coefficients are not reported in the table. Results are from OLS regressions with firm-level clustered standard errors. p-values are shown in parentheses. See the Appendix for a description of the control variables.

	Simple Regressions			Multiple Regressions				
	Combined CAR	Bidder CAR	Bidder Share	Combined CAR		Bidder CAR		Bidder Share
	Model 1	Model 2	Model 3	Pooled Model 4	Win/Lose Model 5	Pooled Model 6	Win/Lose Model 7	Model 8
Intercept	0.0078 (0.000)	0.0064 (0.000)	0.4193 (0.000)					
Prior Combined CAR (-1,+1)	0.0518 (0.125)			0.0228 (0.478)				
Prior Bidder CAR (-1,+1)		0.0523 (0.000)				0.0307 (0.013)		
Prior Bidder's Share (-1,+1)			0.2855 (0.000)					0.0490 (0.522)
Prior Combined CAR (-1,+1) x Winner Dummy					0.0415 (0.367)			
Prior Combined CAR (-1,+1) x Loser Dummy					-0.0137 (0.789)			
Prior Bidder CAR (-1,+1) x Winner Dummy							0.0235 (0.204)	
Prior Bidder CAR (-1,+1) x Loser Dummy							0.0432 (0.063)	



	Simple Regressions			Multiple Regressions				
	Combined CAR	Bidder CAR	Bidder Share	Combined CAR		Bidder CAR		Bidder Share
	Model 1	Model 2	Model 3	Pooled	Win/Lose	Pooled	Win/Lose	Model 8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Private/Cash						0.0449 (0.000)	0.0457 (0.000)	
Private/Stock						0.0533 (0.000)	0.0541 (0.000)	
Private/Combination						0.0431 (0.000)	0.0439 (0.000)	
Private/Unknown						0.0486 (0.000)	0.0494 (0.000)	
Public/Cash				0.0703 (0.036)	0.0691 (0.038)	0.0458 (0.000)	0.0466 (0.000)	0.2682 (0.088)
Public/Stock				0.0477 (0.152)	0.0464 (0.161)	0.0213 (0.084)	0.0221 (0.077)	0.2643 (0.089)
Public/Combination				0.0586 (0.077)	0.0572 (0.083)	0.0270 (0.025)	0.0278 (0.022)	0.2728 (0.061)
Public/Unknown				0.0606 (0.073)	0.0594 (0.078)	0.0459 (0.000)	0.0467 (0.000)	0.1938 (0.426)
Subsidiary/Cash				0.0585 (0.079)	0.0572 (0.084)	0.0540 (0.000)	0.0548 (0.000)	0.3052 (0.031)
Subsidiary/Stock				0.0472 (0.169)	0.0457 (0.181)	0.0295 (0.034)	0.0304 (0.032)	0.1669 (0.459)
Subsidiary/Combination				0.0525 (0.117)	0.0513 (0.123)	0.0564 (0.000)	0.0572 (0.000)	0.2367 (0.158)
Subsidiary/Unknown				0.0463 (0.167)	0.0449 (0.176)	0.0511 (0.000)	0.0518 (0.000)	0.1442 (0.355)

	Simple Regressions			Multiple Regressions				
	Combined	Bidder	Bidder	Combined CAR		Bidder CAR		Bidder
	CAR	CAR	Share	Pooled	Win/Lose	Pooled	Win/Lose	Share
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Same Industry: Acquirer/Target				0.0015 (0.663)	0.0015 (0.667)	-0.0022 (0.239)	-0.0022 (0.237)	-0.0204 (0.689)
Log(Time Since Last Acquisition)				-0.0005 (0.563)	-0.0006 (0.535)	0.0008 (0.066)	0.0009 (0.061)	-0.0058 (0.715)
Competitive Bid				0.0009 (0.945)	0.0009 (0.947)	0.0026 (0.731)	0.0026 (0.731)	0.1304 (0.213)
Log(Acquirer Age)				0.0011 (0.563)	0.0012 (0.512)	0.0004 (0.700)	0.0003 (0.743)	0.0263 (0.344)
Same Industry: Prior Acquisition				-0.0004 (0.895)	-0.0004 (0.903)	-0.0007 (0.681)	-0.0007 (0.675)	0.0701 (0.196)
International Target				0.0120 (0.086)	0.0115 (0.098)	-0.0019 (0.328)	-0.0019 (0.330)	-0.0005 (0.995)
Hostile Deal				0.0165 (0.137)	0.0163 (0.137)	-0.0051 (0.421)	-0.0051 (0.420)	
Relative Size				0.0231 (0.000)	0.0231 (0.000)	0.0013 (0.496)	0.0013 (0.498)	-0.1389 (0.091)
Log(Acquirer Size)				-0.0029 (0.002)	-0.0029 (0.002)	-0.0038 (0.000)	-0.0038 (0.000)	0.0665 (0.000)
Adjusted R <sup>2</sup>	0.0023	0.0024	0.0773	0.1258	0.1256	0.0418	0.0417	0.8387
Number of Obs.	1,625	11,797	194	1,625	1,625	11,797	11,797	194

## **Table 5**

### **Regressions Examining CEO-Level Persistence in Acquisition Performance**

This table reports results from regressions of the performance of the bidder's current acquisition the performance of the prior acquisition of the bidder and various control variables. The "CEO-Level" sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1992 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. It includes transactions for which there is at least one acquisition preceding the current deal, the prior merger also meets all of the aforementioned criteria, and we are able to identify the acquiring firm CEO for both the current and prior deals using ExecuComp data. Bidder Cumulative Abnormal Return (Bidder CAR (-1,+1)) is the difference between the return on the acquirer's stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. The dependent variable in these models is Bidder CAR (-1, +1). Prior CAR is the Bidder CAR on the acquirer's last acquisition preceding the current merger. The Same (Different) CEO Dummy is equal to one when the acquiring firm CEO is the same (different) in the current and prior deals. The Winner (Loser) dummy equals one if the prior CAR is positive (non-positive) and zero otherwise. Mean of Deals with Same CEO is the average CAR across all of the acquirer's previous mergers for which the acquiring firm CEO is the same as the CEO in the current deal. Mean of Deals with Same CEO (excl. Prior Deal) is similarly defined, except that Prior CAR is excluded from the calculation. Following Gompers, Ishii, Metrick (2003), a firm's GIM index is the number of antitakeover provisions for that firm. Moreover, we classify each firm with a GIM index score of 5 and below as a "Democracy" firm and each firm with a score of 14 or above as a "Dictatorship" firm. All models include control variables shown in Table 4, year dummy variables, and industry dummy variables. Intercept and coefficients on control and dummy variables are not displayed. Results are from OLS regressions with firm-level clustered standard errors. p-values are shown in parentheses. See the Appendix for a description of the control variables.

**Bidder CAR (-1,+1)**

	CEO Level	Same and Different	Same vs. Different	Same & Diff Win/Lose	Same v Diff Win/Lose	Mean Prior CEO Deals	Mean CEO Excl Prior	Governance Index	Democracy vs. Dictator
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Prior CAR (-1,+1)	0.0626 (0.009)		-0.0353 (0.412)						
Same CEO Dummy (Prior Deal)		-0.0028 (0.389)	-0.0028 (0.389)						
Prior CAR (-1,+1) x Same CEO Dummy		0.0797 (0.003)	0.1149 (0.022)				0.0816 (0.030)	0.0763 (0.032)	0.0760 (0.033)
Prior CAR (-1,+1) x Different CEO Dummy		-0.0353 (0.412)						-0.0331 (0.478)	-0.0320 (0.492)
Prior CAR (-1,+1) x Winner Dummy					-0.0022 (0.971)				
Prior CAR (-1,+1) x Winner x Same CEO				0.0777 (0.070)	0.0800 (0.253)				
Prior CAR (-1,+1) x Winner x Different CEO				-0.0022 (0.971)					
Prior CAR (-1,+1) x Loser Dummy					-0.0796 (0.159)				
Prior CAR (-1,+1) x Loser x Same CEO				0.0823 (0.070)	0.1619 (0.011)				
Prior CAR (-1,+1) x Loser x Different CEO				-0.0796 (0.159)					
Mean of Deals with Same CEO						0.0561 (0.047)			
Mean of Deals with Same CEO (excl. Prior Deal)							-0.0353 (0.259)		
GIM Index								-0.0004 (0.341)	
Democratic Dummy (GIM <= 5)									-0.0013 (0.762)
Dictator Dummy (GIM >= 14)									-0.0009 (0.803)
Adjusted R <sup>2</sup>	0.0389	0.0406	0.0406	0.0404	0.0404	0.0363	0.0416	0.0365	0.0360
Number of Obs.	3,820	3,820	3,820	3,820	3,820	3,689	2,343	2,913	2,913

## Table 6

### Economic Significance of Persistence to Bidder

This table provides estimates of the economic significance of persistence to bidders calculated over two samples of acquisitions. The "Firm-Level" sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1981 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. It includes transactions for which there is at least one acquisition preceding the current deal and the prior merger also meets all of the aforementioned criteria. The "Same CEO" sample includes all deals from the "Firm-Level" sample for which the CEO of the acquiring firm is the same in the current and prior deals based on ExecuComp data. ExecuComp data begins in 1992, so the "Same CEO" sample includes deals announced between 1992 and 2007. Bidder Cumulative Abnormal Return (Bidder CAR (-1,+1)) is the difference between the return on the acquirer's stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. Prior CAR (-1, +1) is the Bidder CAR on the acquirer's last acquisition preceding the current merger. Persistence Estimate is the coefficient on Prior CAR (-1,+1) from Model 6 in Table 4 for the "Firm-Level" sample and the coefficient on Prior CAR (-1,+1) x Same CEO Dummy from Model 3 in Table 5 for the "Same CEO" sample. Mean Bidder Size Prior to Acquisition is the average market capitalization of acquirers in each sample two days before the acquisition in deals that were preceded by at least one merger by the same acquirer.

	Firm-Level	Same CEO
[1] Standard Deviation of Prior CAR (-1,+1)	0.0723	0.0643
[2] Persistence Estimate	0.0307	0.0797
[3] Impact of Persistence (2 x [1] x [2])	0.0044	0.0102
[4] Mean Bidder Size Prior to Acquisition (\$ millions)	\$6,475	\$17,111
[5] Value Created by Persistence (\$ millions) ([3] x [4])	\$29	\$175

## Table 7

### Alternative Specifications of Persistence Regressions Involving Bidder Performance

This table provides results from various regression specifications of a bidder's performance from its current acquisition on the bidder's performance from its past acquisitions and control variables. Sample comes from SDC and includes completed acquisitions of at least \$1 million announced between 1992 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. It includes transactions for which there is at least one acquisition preceding the current deal, the prior merger also meets all of the aforementioned criteria, and we are able to identify the acquiring firm CEO for both the current and prior deals using ExecuComp data. Bidder Cumulative Abnormal Return (Bidder CAR (-1,+1)) is the difference between the return on the acquirer's stock and the return on the CRSP value-weighted index over the three-day period centered on the merger announcement date. The dependent variable in these models is Bidder CAR (-1, +1). Prior CAR is the Bidder CAR on the acquirer's last acquisition preceding the current merger. The Same (Different) CEO Dummy is equal to one when the acquiring firm CEO is the same (different) in the current and prior deals. Time Since Last is the number of years between the bidder's current acquisition and prior acquisition. The "Mergers within 5 Years" model is based on a sample limited to deals in which the Time Since Last is less than or equal to five years. The "Exclude Financials and Utilities" model is based on a sample that excludes acquirers from the following Fama and French (1997) industries: Banking, Insurance, Real Estate, Trading, and Utilities. Same Industry is a dummy variable equal to one if the current target and the target in the prior acquisition belong to the same industry (Fama and French (1997)) and zero otherwise. Prior Residual CAR equals the residual from a regression in which Bidder CAR (-1,+1) is regressed on all the control variables in Table 4, excluding Log (Time Since Last Acquisition) and Same Industry: Prior Acquisition. CAR (-2,+2) is defined the same as CAR (-1, +1), except that CAR (-2, +2) is calculated over the five-day period centered on the merger announcement date. Industry-adjusted operating income growth is defined as EBITDA in year -1 minus EBITDA in year -4 divided by EBITDA in year -4. M/B is equal to the ratio of the market value of the acquirer's equity to the book value of the acquirer's equity at the end of the fiscal year prior to the announced deal. Errors in Variables model is limited to deals in which the relative size of the prior acquisition is in the highest quintile across all acquisitions announced between 1981 and 2007 (including deals for which CEO data is unavailable). The "Withdrawn Deals" model includes current acquisitions that are either completed or withdrawn. All models include control variables shown in Table 4, year dummy variables, and industry dummy variables. Intercept and coefficients on control and dummy variables are not displayed. Results are from OLS regressions with firm-level clustered standard errors. p-values are shown in parentheses. See the Appendix for a description of the control variables.

Row	Model	Persistence Measure	Bidder CAR (-1,+1)	N
1	Time Since Last Interaction	Prior CAR (-1,+1) x Same CEO Dummy	0.0672 (0.038)	3,820
		Prior CAR (-1,+1) x Different CEO Dummy	-0.1090 (0.083)	
		Prior CAR x Same CEO Dummy x Log (Time Since Last)	-0.0203 (0.375)	
		Prior CAR x Different CEO Dummy x Log (Time Since Last)	0.0761 (0.112)	
2	Mergers within 5 Years	Prior CAR (-1,+1) x Same CEO Dummy	0.0831 (0.002)	3,660
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0668 (0.165)	
3	Prior CAR Cubed	Prior CAR (-1,+1) x Same CEO Dummy	0.0781 (0.005)	3,820
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0775 (0.221)	
		(Prior CAR (-1,+1) x Same CEO Dummy) <sup>3</sup>	0.0127 (0.827)	
		(Prior CAR (-1,+1) x Different CEO Dummy) <sup>3</sup>	0.5715 (0.152)	
4	Exclude Financials and Utilities	Prior CAR (-1,+1) x Same CEO Dummy	0.0805 (0.005)	3,092
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0460 (0.321)	
5	Same Industry Interaction (Current and Prior Target in Same Industry)	Prior CAR (-1,+1) x Same CEO Dummy	0.0970 (0.018)	3,820
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0179 (0.721)	
		Prior CAR x Same CEO Dummy x Same Industry	-0.0303 (0.520)	
		Prior CAR x Different CEO Dummy x Same Industry	-0.0431 (0.579)	

<b>Row</b>	<b>Model</b>	<b>Persistence Measure</b>	<b>Bidder CAR (-1,+1)</b>	<b>N</b>
6	Residual CAR	Prior Same CEO Residual CAR (-1,+1)	0.0834 (0.002)	3,820
		Prior Different CEO Residual CAR (-1,+1)	-0.0439 (0.339)	
7	Five-Day Window	Prior Same CEO CAR (-2,+2)	0.0531 (0.023)	3,820
		Prior Different CEO CAR (-2,+2)	-0.0323 (0.522)	
8	Managerial Quality I	Prior CAR (-1,+1) x Same CEO Dummy	0.0835 (0.005)	3,510
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0195 (0.661)	
		Industry-Adjusted Operating Income Growth (3 Years)	0.0000 (0.548)	
9	Managerial Quality II	Prior CAR (-1,+1) x Same CEO Dummy	0.0769 (0.004)	3,808
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0356 (0.412)	
		M/B	-0.0004 (0.085)	
10	Errors in Variables	Prior CAR (-1,+1) x Same CEO Dummy	0.0229 (0.542)	760
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0563 (0.426)	
11	Withdrawn Deals	Prior CAR (-1,+1) x Same CEO Dummy	0.0757 (0.006)	3,824
		Prior CAR (-1,+1) x Different CEO Dummy	-0.0467 (0.237)	



## Table 8

### Association Between the Status of an Acquirer's Current Target and the Status of the Acquirer's Prior Target

This table reports tests of the relation between the status (public, private or subsidiary) of an acquirer's current target and the status of the acquirer's prior target. In Panel A, each target is classified as a public firm, a private firm, or a subsidiary of a public firm. In Panel B, each target is classified as public or non-public, where a non-public target is either a private firm or a subsidiary. In either panel, each cell shows the number of acquirers whose current acquisition has a particular status and whose prior acquisition has a particular status. Sample is the "CEO-Level" sample. It comes from SDC and includes completed acquisitions of at least \$1 million announced between 1992 and 2007 by U.S. acquirers traded on the AMEX, NASDAQ, or NYSE in which the bidder acquires at least 50% of the target company. The sample excludes deals occurring within two trading days of another of the acquirer's acquisitions, deals of bidders with a stock price less than \$2 two days prior to the announcement, deals for which CRSP data are unavailable for the bidder, deals for which SDC can only estimate the announcement date, deals for which SDC finds that the announcement date occurs after the date when the target company is first publicly disclosed as a possible takeover target, and deals for which industry data is unavailable. It includes transactions for which there is at least one acquisition preceding the current deal, the prior merger also meets all of the aforementioned criteria, and the acquiring firm CEO is the same in both the current and prior deals. Chi-squared p-values are provided at the bottom of each panel.

Panel A: Public, Private, and Subsidiaries				
Prior Acquisition	Current Acquisition			Total
	Public	Private	Subsidiary	
Public	472	406	144	1,022
Private	416	1,199	226	1,841
Subsidiary	168	245	151	564
<b>Total</b>	<b>1,056</b>	<b>1,850</b>	<b>521</b>	<b>3,427</b>
Chi-squared p-value				0.000

Panel B: Public and Non-Public			
Prior Acquisition	Current Acquisition		Total
	Public	Non-Public	
Public	472	550	1,022
Non-Public	584	1,821	2,405
<b>Total</b>	<b>1,056</b>	<b>2,371</b>	<b>3,427</b>
Chi-squared p-value			0.000

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