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# Essays on the Role of Investment Banks as IPO Underwriters, Mutual Fund Managers, and Merger Advisors

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ESSAYS ON THE ROLE OF INVESTMENT BANKS AS IPO UNDERWRITERS,  
MUTUAL FUND MANAGERS, AND MERGER ADVISORS

by

Tim Mooney

A Dissertation Submitted in  
Partial Fulfillment of the  
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Doctor of Philosophy  
in Management Science

at

The University of Wisconsin-Milwaukee

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## ABSTRACT

### ESSAYS ON THE ROLE OF INVESTMENT BANKS AS IPO UNDERWRITERS, MUTUAL FUND MANAGERS, AND MERGER ADVISORS

by

Tim Mooney

The University of Wisconsin-Milwaukee, 2013  
Under the Supervision of Professor Lilian K. Ng

In my first essay, I examine whether the focus on advisors' merger completion abilities is driven by acquirers seeking to complete mergers unconditionally, regardless of value implications, or if it is driven by value-maximization considerations. Advisors that complete a higher percentage of announced mergers are associated with more certain future merger completion. Results reveal that completion expertise has positive value implications, but only for acquirers with strong corporate governance. Results also suggest that the level of corporate governance of the acquirer determines the value consequences of an advisor's merger completion expertise. In my second essay, I examine the way investment banks allocate IPOs to their affiliated mutual funds worldwide. I analyze IPO allocations to affiliates globally and find significant cross-country differences in the first-day returns of these IPOs. I find some support for the dumping ground hypothesis outside the U.S. In addition, IPO allocations to all mutual funds—both affiliated and unaffiliated—in countries with strong investor protection tend to have higher first-day returns, benefiting fund investors. Overall, the evidence suggests the presence of an economically significant conflict of interest within financial conglomerates for which prior literature has not found robust empirical support.

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## Essay 1: Sealing the Deal: Is an Advisor's Completion Expertise in Mergers & Acquisitions Value-Destroying?

### I. Introduction

In advising their acquirer clients, investment banks face strong incentives to complete a merger. McLaughlin (1990) documents that 80% of the compensation paid to the acquirer's financial advisor is conditional on merger completion rather than on whether the merger creates value for the acquirer. Furthermore, Rau (2000) finds that an investment bank's future market share is positively related to its prior record of completing announced mergers, as measured by the share of announced mergers that they advised on that ultimately got completed. Rau's findings imply that acquirers hire advisors based on the advisors' prior record of completing mergers. This fixation on merger completion is the source of a puzzle; as Rau puts it, "Why does the market fail to recognize that providing incentives to complete a deal does not necessarily result in value maximization for the acquirer?" (Rau (2000), p.323). The implicit assumption made by some existing studies is that acquirers' provision of merger completion incentives and their pursuit of advisors with stronger merger completion records conflict with value-creation. This assumption accords well with the empire-building hypothesis of corporate diversification and the evidence of destruction of acquirers' value in mergers (e.g., Masulis, Wang, and Xie, 2007; Bliss and Rosen, 2001). Similar conjectures have been made by the financial press, which often cite completion incentives provided to investment banks advising acquirers in mergers as conflicting with the acquirers' value maximization (see, e.g., Financial Times, December 7, 2010, p. 10).

We empirically examine whether “completion expertise” causes more value-destruction in a merger, or whether such expertise fosters value creation for acquirers. In particular, we attempt to examine three key issues: (1) whether an advisor’s expertise in completing mergers is persistent and affects the likelihood of completion of future mergers, (2) whether that expertise creates or destroys value for the acquirer, and (3) how that expertise interacts with the corporate governance of the acquirer.

The first question that we examine is whether an investment bank’s prior track record of completing mergers is associated with the completion of future mergers for which it serves as an acquirer’s advisor. To measure this track record, we use the ratio of prior announced mergers that the investment bank served as an acquirer advisor on that were ultimately completed (completion ratio). We use data on U.S. merger attempts during 1979–2007 and use multivariate regression analysis to control for multiple determinants of merger completion. We find that the likelihood that an announced merger is completed is positively associated with the prior completion ratio of the acquirer’s investment bank advisor. The persistence of an investment bank’s completion record suggests that some banks may possess certain completion expertise which is reflected in a high fraction of announced mergers that are completed.

The second question we examine is whether the prior completion track record of an acquirer’s advisor contributes to the creation or destruction of the acquirer’s value. We assume that the stock market incorporates information about the expected effect of the merger on the acquirer’s value at the time of merger announcement. Thus, we test the relation between the prior completion ratio of an acquirer’s advisor and the acquirer’s announcement period stock returns, simultaneously controlling for acquirer, merger, and

advisor characteristics. Using the full sample of acquisitions, we find no evidence of a significant relation between an advisor's prior completion ratio and its acquirer client's announcement period returns.

However, we consider a possibility that the results obtained using the full sample mask differences in the effect of advisors' completion ratios on value across groups of acquirers. For instance, for acquirers that pursue mergers to build empires, an advisor with strong completion ability may present an opportunity to complete a merger regardless of its value effect. Conversely, for acquirers motivated by value maximization, an advisor with strong completion ability may ensure successful and quick completion of a merger, thereby reducing merger costs. One way to gauge the motivation of the acquirer in a merger is by looking at the acquirer's corporate governance. Existing studies demonstrate that firms with weak corporate governance are more likely to engage in wasteful acquisitions and empire building (Masulis, Wang, and Xie, 2007), while those with strong governance are more likely to be motivated by value-increasing considerations.

Thus, the third question that we examine is whether the effect of an advisor's completion expertise on acquirer value depends on the corporate governance of the acquirer. In particular, we identify mergers attempted by acquirers that have weak corporate governance (measured by a high level of antitakeover provisions) and thus are more likely to pursue mergers for empire-building reasons. Similarly, we identify mergers attempted by acquirers with strong corporate governance (low level of antitakeover provisions), which are more likely to be motivated by value maximization.

Then, we estimate the relation between the advisor's prior completion ratio and acquirer's announcement period stock returns separately for the two groups of mergers.

For acquirers with strong corporate governance, we find that the relation between completion ratios and acquirer's announcement returns is positive and statistically significant. For acquirers with weak corporate governance, the relation between prior completion ratios and acquirer returns is negative, , albeit marginally significant. We also find that the difference in the effect of completion ratios on acquirer returns is statistically significant for mergers attempted by acquirers with strong versus those with weak corporate governance.

Summary statistics reveal the magnitude of the differences between groups. The median and mean acquirer announcement returns are 0.84% and 2.29% for acquirers with strong governance advised by high-completion-ratio advisors. It is the only category of mergers with positive average returns. The lowest average returns are observed in mergers attempted by acquirers with weak governance that are advised by high-completion-ratio advisors, with median and mean returns of -2.08% and -2.84%, respectively. Strong-governance acquirers that hire low-completion advisors exhibit median and mean announcement returns of -1.98% and -1.86%, while weak-governance acquirers that hire low-completion advisors exhibit median and mean announcement returns of -0.70% and -0.43%, respectively.

These results suggest a strong dependence between the corporate governance of an acquirer and the effect that its advisor's completion expertise has on the acquirer's value. For acquirers with strong corporate governance, an advisor's completion expertise contributes to value-creation. For acquirers with weak governance, an advisor's

completion expertise results in greater destruction of the acquirer's value. Overall, it appears that completion expertise can be both a virtue and a vice.

Our results, however, raise questions about the essence of completion expertise. With regards to the value-increasing effect of completion expertise, we identify several non-mutually exclusive possibilities. First, completion expertise may involve efficient and effective facilitation of completion of announced merger attempts that reduces expenses associated with these mergers, reduces the likelihood of raising offer prices, or prevents the success of alternative bidders. Second, completion expertise may also involve successful screening of mergers before they are announced and proceeding with announcement of only those mergers that are likely to create value for the acquirer. By doing so, advisors help acquirers avoid the costs of announcing and pursuing acquisitions that are unlikely to be completed or create value. Regardless of the channel of expertise, the evidence indicates that strong-governance acquirers benefit from seeking merger advisors with high completion ratios and following their advice. With regards to the value-reducing effect of completion expertise, completion-skilled advisors may destroy value by overcoming the obstacles of completing value-reducing acquisitions, potentially by offering higher payments to target shareholders and managers.

One big question that our results raise is whether there is a causal relation between an advisor's prior completion ratio and an acquirer's announcement stock returns. An alternative possibility is that some investment banks or groups of investment banks consistently service mergers with a higher probability of completion. To ascertain whether the identity of the actual advisor affects acquirer announcement returns, we perform an array of placebo tests. Specifically, we match the actual advisor that served

on the merger with alternative advisors that are similar according to market share and industries of clients that these advisors work with. We then test the relation between the alternative advisors' prior completion ratios and acquirers' announcement returns. If self-selection into high-completion-likelihood mergers drives results and not the identity and effort by the actual advisor, we would expect the relations between the alternative ("placebo") advisor's completion ratios and acquirer's returns to be similar to those observed for the actual ("treatment") advisor. We find no significant relation between placebo completion ratios and acquirer returns. The difference in the observed relation between the treatment and placebo groups is statistically significant for tests that involve acquirers with strong governance, and insignificant – but with a p-value of 0.128 – for tests that involve acquirers with weak governance. Overall, the results are consistent with a value-increasing effect of completion expertise for acquirers with strong corporate governance.

This study contributes to three branches of existing literature. First, our results provide new insight into the effect of completion-focused advisor fee structure on advisor incentives to increase value, originally raised by McLaughlin (1990) and Rau (2000). In an attempt to shed light on the quandary identified by Rau, our results show that the seeming focus on the merger completion expertise of advisors is, for acquirers with strong governance, consistent with value-maximizing behavior. For acquirers with weak corporate governance, however, the focus on merger completion expertise of advisors results in value destruction.

Second, we add to the discussion of the nature of advisor expertise in mergers and acquisitions. Bao and Edmans (2011) show evidence of advisor expertise in the form of a

“bank fixed effect” that can explain variation in acquirer announcement returns. Our study uncovers an observable expertise, potentially a component of this fixed effect: namely, an advisor’s completion of a high percentage of announced mergers. Golubov, Petmezas, and Travlos (2012) find that top-tier investment bank advisors—those with the highest market share during their sample period—are associated with higher announcement period returns when the target is publicly traded. Our measure of advisor expertise—the ability to complete announced mergers—shows evidence of value-creating expertise that is not limited only to top-tier advisors and mergers involving public targets. Kale, Kini and Ryan (2003) find that advisor market share can proxy for value-creating expertise after a merger has been announced. In a sample of 23 tender offers, they find that the reputation of the bidder’s advisor is positively related to the probability of (i) successfully bidding on a value-creating merger, and (ii) withdrawing from an announced value-destroying merger. We provide new evidence of advisor expertise that is observable before a merger has been announced. In addition, completion ratio is a proxy for advisor skill that extends to a much broader sample of mergers.

Finally, we build on the literature dealing with corporate governance and merger outcomes. Although studies have examined merger performance and corporate governance (e.g., Masulis, Wang, and Xie (2007), Byrd and Hickman (1992), Carline, Linn, and Yadav (2009)), to our knowledge ours is the first study to report evidence on the relation between governance and advisor expertise. We demonstrate that one way in which strong corporate governance contributes to value-creation in mergers is by utilizing value-creating expertise of advisors.

The remainder of this paper is organized as follows. Section 2 briefly summarizes prior studies, with a specific focus on the role of investment banks as advisors in mergers and acquisitions. Section 3 describes the data and presents summary statistics. Section 4 examines the persistence of investment banks' completion records and tests of the effect of completion ratios on acquirer's announcement period performance. In section 5 we analyze the interrelation between acquirer corporate governance and advisor expertise. Section 6 summarizes the findings and concludes.

## II. Literature review

Within the existing literature on investment banking relationships in mergers and acquisitions, we partition relevant studies into four main categories and discuss each category (see, e.g., Bruner (2002) for a review of the literature on the value effects of mergers and acquisitions). The first examines whether and how advisors generate value for their clients. The second is concerned with how advisors help facilitate and complete mergers. The third category includes studies relevant to the contingent nature of advisory fees. The fourth studies how acquirer corporate governance impacts merger outcomes.

### A. An advisor's ability to generate value for clients

One function of a financial advisor is to help sway the outcome of a merger in the client's favor. This could be accomplished in two ways. First, the advisor might identify a value-creating merger for the client, or they might dissuade the client from pursuing a merger that destroys value. Rau (2000) refers to this function as the superior deal hypothesis. The other way an advisor works for the benefit of the client is by negotiating favorable terms, given that a merger has already been identified. Kale, Kini, and Ryan (2003) refer to this second function as the strategic bargaining hypothesis.



To date, few studies have explored heterogeneity in the ability of advisors to generate value for acquirers. Bao and Edmans (2011) find evidence of advisor expertise in the form of persistence of performance. They measure the cumulative abnormal returns (CAR) of an advisor bank's clients during the announcement of the clients' acquisitions attempted over the preceding two years and find that the top quintile of advisor banks outperforms the bottom quintile by 0.92 percentage points over the subsequent two years. Although this "advisor fixed-effect" shows evidence of expertise, it does not provide insight into what these advisors are doing that is skillful.

Furthermore, the authors find limited evidence of an association between completion expertise and a merger's value effects, but it is not robust; they conclude from this lack of evidence that there need not be a conflict between merger completion incentives and value maximization. In addition, Bao and Edmans find no relation between prior client performance and acquirer choice of advisor, suggesting that acquirers do not consider prior performance when selecting an advisor. The authors cite the M&A industry's use of league tables based on market share as one possible explanation for this, and posit that league tables based on value creation may improve acquirers' advisor selection decisions.

Kale, Kini, and Ryan (2003) examine the relative reputations of acquirer and target advisors in tender offers, where an advisor's reputation is defined as its market share in the year of the merger. They find that hiring a more reputable advisor can help an acquirer capture a larger share of merger gains, consistent with the strategic bargaining hypothesis. They also find that advisor reputation is positively related to the total wealth gain in a tender offer. The authors also present some insight into how an advisor might utilize its expertise for the acquirer's benefit. In a sample of multi-bidder transactions

they find that the reputation of the acquirer's advisor is positively related to (i) the probability of successfully bidding on a value-creating merger, and (ii) the probability of withdrawing from an announced value-destroying merger. Although compelling, this evidence is highly specific—the authors' results are limited to a sample of 23 multi-bidder tender offers. In addition, other studies find that Kale, Kini, and Ryan's measure of advisor reputation is negatively related to acquirer value, as described in the next section.

#### B. An advisor's role as merger facilitator

Another function of an advisor is to facilitate a merger by ensuring its completion. Rau's (2000) deal completion hypothesis suggests that some acquirers are driven by empire-building considerations, use advisors to negotiate completion and "rubber-stamp" the merger, and disregard the effect that these transactions have on shareholder wealth. Rau finds that an advisor's current market share is positively related to its prior merger completion ratio. But he finds no relation between advisor market share and the post-acquisition performance of an advisor's prior clients. Bao and Edmans (2011) also find that acquirers select advisors based on market share and not prior clients' performance. Both papers argue that the evidence is consistent with the deal completion hypothesis. Perhaps the most troubling result, reported by these studies, is that an advisor's market share is negatively related to the performance of its future clients in acquisitions. It is this negative relation that questions the acquirers' use of market share as the primary determinant of advisor choice in the M&A industry.

### C. Contingent fees and merger completion incentives

Compounding this puzzle is the contingent fee structure that is prevalent in advisory contracts. McLaughlin (1990) argues that the incentives of advisors can create conflicts of interest with their acquirer clients. Specifically, he finds that in a typical merger advisory contract, more than 80% of the advisory fee is paid only if the merger is completed; the fees are not contingent on increased value for the client. McLaughlin speculates that the advisor's concern for its reputation might prevent it from proposing and pursuing value-destroying deals for its clients. Rau (2000) notes that in his sample, an average of 55% of a top-tier advisor's fee is contingent upon completion of the transaction, and he identifies a positive relation between an advisor market share and the amount of contingent fees. Rau cites this fee structure as an explanation for why advisor market share depends on merger completion and not prior client performance.

Extant empirical evidence on the fee structure of advisory contracts concludes that the prevalence of contingent fees creates incentives for advisors to pursue both a high number and proportion of completed mergers, consistent with the facilitating role of an advisor as well as the deal completion hypothesis. However, the evidence seems to conflict with the interests of acquiring shareholders seeking to maximize acquirer value, as well as with an advisor's role as a value-creator.

### D. Acquirer corporate governance and merger outcomes

It may not be altogether surprising that evidence of advisor value maximization incentives is weak, since an acquirer may not be interested in value maximization. A robust body of literature discusses the potential agency problems associated with the separation of firm ownership and control (see, e.g., Jensen (1986), Stulz (1990)).

Mergers are often viewed as a vehicle for entrenched managers to build empires at the expense of shareholders, and corporate governance plays an important monitoring role in mitigating these agency problems. Masulis, Wang, and Xie (2007) examine completed acquisitions and anti-takeover provisions (ATPs), a proxy for weak corporate governance. These authors find a negative relation between acquirer announcement period CAR and acquirer ATPs, and they argue that ATPs protect entrenched managers from the disciplinary effect of the market for corporate control, thus allowing them to pursue value-destroying mergers. Conversely, firms with stronger governance with fewer ATPs should be less likely to pursue value-destroying acquisitions.

Carline, Linn, and Yadav (2009) analyze post-merger operating performance and acquirer corporate governance in the form of board characteristics. They find that acquirers with larger boards are associated with lower post-merger operating performance, and that the presence of outside blockholders—a proxy for better outside monitoring—is positively associated with post-merger operating performance. Byrd and Hickman (1992) also examine merger performance and acquirer board structure, and they find a curvilinear relationship between the proportion of outside directors and acquirer announcement period CARs. Clearly, firm-level corporate governance and merger outcomes are related. However, we are not aware of studies that address the interaction of an acquirer's corporate governance and its financial advisor in a merger.

Overall, although a few studies find evidence that certain advisor characteristics are associated with value-creation, there is little direct evidence on whether prior completion record is associated with value-creation. There are also studies that suggest that advisors are hired to ensure merger completion, regardless of whether the merger

creates or destroys value. This argument is supported in part by the evidence that advisor compensation is highly contingent on merger completion, and also with the view that mergers are a vehicle for entrenched managers to build empires at the expense of shareholders. Our analysis attempts to shed light on the role and value effects of advisor completion record.

### III. Data and Variable Construction

#### E. Data sources

To construct our sample, we use the Securities Data Corporation (SDC) Platinum Mergers and Acquisitions (M&A) database. We select transactions that are classified as a merger or acquisition, and in which the acquirer used a financial advisor. We include both completed and uncompleted transactions. Collectively, we refer to these transactions as mergers. To be consistent with other studies, we focus on mergers that seek a change in control, and thus require that the acquirer owns not more than 50% of the target and seeks to own not less than 50% of the target. These screens result in a sample of 4,787 merger attempts which span 1979-2007.

If available, for each of the acquirers, we obtain daily stock returns, daily stock prices, and number of shares outstanding from the Center for Research in Security Prices (CRSP) database. We also obtain information on anti-takeover provisions of the acquirer from Investor Responsibility Research Center (IRRC). Finally, we obtain information about whether an acquirer used a particular financial advisor as the lead underwriter in a prior equity or debt security issuance from SDC's New Issues database.

#### F. Variable construction

Our main variable of interest is prior completion ratio. We measure prior completion ratio as the percentage of announced mergers in which the investment bank served as the acquirer's advisor that were ultimately completed over a period prior to the announcement of the current merger. We require that an advisor completed at least one merger during this measurement period. Unfortunately, we lack theory to guide our choice of an appropriate interval in which to search for a correlation between the advisor's completion ratio and the effect of that ratio on subsequent mergers. Therefore, we conduct the analyses using prior completion ratio measured over one-year, two-year, and three-year periods prior to the announcement of the current merger.

#### G. Sample summary statistics

Summary statistics are presented in Table 1. Panel A divides the sample into completed and uncompleted mergers, highlighting the prominent difference in the acquirer announcement period CAR between the two categories. Compared with completed mergers, uncompleted mergers have significantly more negative acquirer CARs. In line with existing literature, targets tend to experience higher announcement period returns than acquirers. The mean and median of the advisor prior completion ratio do not differ significantly across the two categories. In the multivariate analysis that follows, we examine whether advisor completion ratio can provide ex ante information about a merger's likelihood of completion and the effect on acquirer value.

#### IV. The Effect of Prior Completion Ratio on the Likelihood of Completion

In this section, we examine whether prior completion ratios of advisors are associated with the likelihood that future mergers in which the bank serves as an

acquirer's financial advisor are completed. We undertake this analysis under the premise that if some advisors possess "completion expertise" associated with more likely merger completion, this expertise should be persistent. That is, those advisors that completed more announced mergers in the past would be associated with higher likelihood of completion of a future merger.

We model the likelihood of merger completion as a logistic regression where the dependent variable equals 1 if an announced merger is completed and 0 if uncompleted or withdrawn. The explanatory variable of interest is an advisor's prior completion ratio. The model includes control variables that are hypothesized to affect the likelihood of merger completion. We include average acquisition returns to the advisor's prior clients, the advisor's market share, an indicator variable for whether the advisor advised on a prior merger to the acquirer and whether the advisor served as an underwriter to the acquirer, the number of prior mergers by the acquirer, the number of concurrent bidders, indicator variable if merger is paid by cash, an indicator variable for whether firms are in similar industries, the number of target industries, an indicator variable for a hostile takeover, and the ratio of merger value to the value of acquirer total assets. We also include calendar-year indicator variables to control for possible differences in merger completion rates across the years. Statistical significance in this and other regression models in the paper is estimated using heteroskedasticity- and autocorrelation-robust standard errors clustered at the individual investment bank level to account for the possibility that outcomes of acquisitions assisted by an individual bank may be interrelated.

Table 2 reports the results of these regressions. The results reveal that the probability that an announced merger will be completed is positively related to the prior completion ratio of the acquirer's advisor. For each of the measurement periods, the coefficient estimates of completion ratios are positive and statistically significant, all with p-values less than 0.01. Thus, some advisors are associated with mergers that have a higher likelihood of completion. This finding is consistent with the idea that some advisors possess "completion expertise" in the form of the ability to complete an announced merger, and as expertise, it is persistent.

#### V. Acquirer Value Creation, Corporate Governance, and Completion Expertise

Our focus now turns to whether completion expertise helps create or destroy value. To answer this question, we examine whether advisors with high completion ratios tend to advise acquirers on mergers that create more or destroy more value for the acquirer.

##### H. The effect of completion ratio on acquirer returns

Before we examine whether completion expertise helps create more value or destroy more value, it is worth asking whether there is reason to suspect that an expertise manifested by completion ratios can create and can destroy value. This inadvertently leads us into hypotheses or arguments about the nature of completion expertise. Thus, what potential expertise, in control of advisors, may result in heterogeneity in observable completion ratios?

One obvious possibility is that high completion expertise advisors foster merger completion by offering the target better deal, offering a higher price for target shares, or paying a higher premium. Holding other things equal, that should reduce acquirer gains.



Alternatively, advisors may foster merger completion by convincing target managers to collaborate and approve the merger, warding off potential alternative bidders. These efforts may increase acquirer gains by keeping offer price low. Another possibility is that advisors screen mergers before announcement. Some advisors with expertise are able to select mergers that are unlikely to be completed and unlikely to create value, and convince acquirers to drop those before announcement. This saves certain costs associated with announcing, pursuing, and then withdrawing a merger or completing a value-reducing merger. An observable outcome of this expertise would be that mergers that are announced by these advisors are more likely to be completed. Overall, there is sufficient reason to suggest that completion expertise may have a positive or a negative effect on the value of the acquirer.

To discern whether advisor completion expertise has value implications, we examine the effect of the advisor's prior completion ratio on acquirer announcement period returns. The dependent variable is acquirer CAR in the 3 days ( $-1; +1$ ) surrounding the merger announcement. Excess returns are computed as the stock return over the announcement period minus the return on a benchmark portfolio over the same period. Benchmark portfolios are 25 Fama-French value-weighted portfolios, constructed by independently sorting stocks according to size and book-to-market characteristics. Besides prior completion ratio, the regression model includes variables that control for acquirer's acquisition expertise and the complexity of the merger. These include prior client acquisition returns, advisor market share, an indicator variable for whether there were prior relations between advisor and acquirer, the number of other bidders, an indicator variable for whether the merger was paid in cash, an indicator

variable for merger with the acquirer and target operating in similar industries, acquirer assets and cash flow, total merger value, and an indicator variable for whether the merger was considered hostile.

The results of these acquirer return regressions are presented in Table 3. The coefficient estimates of prior completion ratio are all statistically insignificant, regardless of the measurement interval. For the full sample, therefore, it appears that advisor completion expertise has no value implications for acquirers. That is, for an average acquirer, advisors with strong completion expertise neither create nor destroy value.

#### I. The effect of completion ratio on returns of acquirers with strong and weak corporate governance

It is possible, however, that the insignificant relation between completion ratio and acquirer returns observed in the full sample masks a certain heterogeneity in the effect of completion expertise on value among acquirers. Acquirer managers may have differing incentives, with some striving to create value for shareholders while others are focused on perquisite consumption, and existing literature provides some evidence of these disparate incentives. Firms with weak corporate governance – in the form of more extensive use of anti-takeover provisions or the absence of outside blockholders – experience lower acquirer stock returns at the announcement and lower post-merger operating performance (Masulis, Wang, and Xie, 2007; Carline, Linn, and Yadav, 2009). These findings are consistent with the idea that managers of acquirers with weaker corporate governance have fewer incentives to maximize value and are more likely to engage in perquisite consumption, possibly in the form of building empires even at the expense of shareholders. Thus, we examine the effect of completion ratio on returns of

acquirers with potentially different incentives, measured by the level of corporate governance of these acquirers.

In this subsection, we examine the effect of completion ratios on acquirer returns for acquirers with strong corporate governance and acquirers with weak corporate governance. We identify acquirers with strong corporate governance and those with weak governance using the G index of Gompers, Ishii, and Metrick (2003), which measures the number of firm ATPs. The strong (weak) governance sub-sample consists of firms with G-index values in the bottom (top) tercile, because a higher firm G-index implies stronger managerial power and weaker governance.

Table 4 presents summary statistics for the announcement period CAR of acquirers with strong and weak corporate governance. Each sub-sample is further divided according to the completion ratio of the acquirer's advisor: "high" completion advisors have 2-year completion ratios above the sample median, and "low" completion advisors are below the sample median. For acquirers with weak governance, median and mean announcement returns are negative and significantly different from zero when a high-completion advisor is employed. Announcement returns are negative, but insignificantly different from zero if a low completion advisor is employed by a weak-governance acquirer. For acquirers with strong corporate governance, the median and mean announcement returns are positive if a high-completion advisor is employed, with mean returns significantly different from zero. If a low-completion advisor is employed, both median and mean returns are negative and significantly different from zero. This evidence suggests that the combination of a weak-governance acquirer with a high-completion advisor—or a strong-governance acquirer with a low-completion advisor—

results in a significant destruction of wealth for the acquirer. Only mergers by strong-governance acquirers advised by high-completion advisors, on average, create value for acquirers.

To formalize our analysis, we estimate acquirer return regressions for the strong and weak governance sub-samples; results are reported in Table 5. For brevity, we report regressions that include completion ratio measured over 2-year and 3-year periods prior to the current merger. For the sub-sample of mergers attempted by acquirers with weak governance, the coefficients of completion ratio are negative, albeit statistically significant only for the longest 3-year measurement period, with a p-value of 0.10. For the sub-sample of mergers attempted by acquirers with strong governance, the coefficients of completion ratio are all positive and statistically significant, with p-values of less than 0.01 and less than 0.05 for the 2-year and 3-year measurement periods. These results reinforce conclusions from our analysis of summary statistics. That is, advisor completion expertise appears to create value for acquirers with strong corporate governance, while it fosters value destruction in acquirers with weak corporate governance.

#### J. Discussion of completion expertise

Our results suggest that advisors with merger completion expertise facilitate mergers that create more value for those acquirer clients that have strong governance. But what exactly is it about completion expertise that contributes to value creation? We propose two non-mutually exclusive explanations.

First, completion expertise may be representative of an advisor's ability to complete mergers more efficiently. This efficiency may involve reducing merger

expenses, such as arranging less costly financing; *ceteris paribus*, such cost savings would add value to a merger. Completion expertise might also be representative of the advisor's ability to help the acquirer avoid having to raise its initial offering price, either through effective valuation of the target or by preventing the success of other potential bidders.

Second, it is possible that advisors with completion expertise are able to screen out certain unfavorable mergers before they are announced and proceed with announcing only those mergers that are likely to create value for the acquirer. The assumption is that skilled advisors can identify mergers that are either value-destroying or unlikely to be completed before they are announced. As shown in Table 1, mergers that do not get completed tend to be more value-destructive; thus, advisors skilled at screening out such mergers would be consistent with the observed positive relation between advisor completion ratio and acquirer announcement period returns. These two explanations are not mutually exclusive, and likely complement each other.

For acquirers with weak corporate governance, completion expertise may represent an advisor's ability to ensure merger completion, even at the cost of acquirer value (Rau 2000). For instance, the advisor may ensure completion by setting a high offer price, lucrative payments to target managers, and generally spending too much on the acquisition. This, of course, reduces acquirer gains, but helps ensure merger completion.

#### K. Alternative explanations and placebo tests

One could argue that the persistence of completion ratios is due to some banks that consistently self-select into mergers which are more likely to be completed. At the

core of the self-selection problem is the assumption that certain advisors consistently advise mergers that are more likely to be completed. That is, any advisor from this group would be associated with high completion and a certain effect on the value of acquirers. Two characteristics that may be associated with more likely completion are the advisor's market share and the industry of the assets that are the object of the merger, i.e. the industry of the target. Most other merger characteristics are either acquirer-specific or potentially under the influence of the advisor.

To examine whether self-selection explains our results, we run “placebo” tests on acquirer return regressions. In these placebo tests, we substitute the information and characteristics of the actual advisor with characteristics of an alternative advisor that is similar to the actual one. Under the self-selection explanation, it is not the identity of the advisor but the fact that the advisor belongs to a certain group of advisors that drives the results. Thus, placebo tests should produce results similar to those produced by tests with actual advisors.

We identify alternative advisors according to several criteria. First, we calculate the market share of investment banks over three years prior to the current merger, and for each merger, randomly choose one of ten investment banks with the market shares closest to that of the actual advisor. Second, we randomly choose an investment bank that over the prior 3 years advised an acquirer in a merger with a target operating in the same 2-digit SIC industry as the target of the current merger.

In Table 6, we report coefficient estimates of completion ratio from placebo acquirer return regressions alongside those obtained from regressions using the actual advisor. The reported results are for placebo advisors identified using the market share

approach. Results using the target industry approach are similar and are not reported for brevity. All of the coefficients using placebo advisors are negative and insignificant. The difference in the coefficients between actual and placebo advisors is statistically significant for mergers attempted by acquirers with strong governance (low G-index) but insignificant (although with a p-value of .128 for the completion ratio measured over prior 3-years) for mergers attempted by acquirers with weak governance. Overall, the results are inconsistent with the alternative interpretation that self-selection of advisors by groups with certain market share or those specializing in mergers in certain industries is driving the results.

The results are also unlikely to be explained by the self-selection of advisors into mergers that create more value for acquirers. One reason against this self-selection is that the effect of completion ratios on value differs between acquirers with strong governance and acquirers with weak governance. Additionally, the coefficients of completion ratio are estimated using models that control for average value created for acquirers in prior acquisitions which the advisor was involved in.

#### L. Advisor expertise across investment bank tiers

We now investigate whether completion ratio is associated with value creation across top-tier and non-top-tier advisors, in the context of corporate governance. Golubov, Petmezas, and Travlos (2012) present evidence that top-tier investment banks are associated with more value created in public acquisitions only. Results we have presented so far are not restricted to top-tier advisors, and our evidence indicates that merger completion expertise is associated with value creation for both public and private targets.

In our full sample of mergers, we observe a significant negative correlation between advisor completion ratio and market share—that is, the top-tier banks tend to complete a lower proportion of announced mergers than other banks. At face value, this correlation would suggest that smaller banks possess better merger completion expertise than top-tier banks. To examine whether differences in advisor expertise across banking tiers are driving our results, we further sub-divide acquirers with strong and weak governance according to whether or not they hired a top-tier investment bank advisor. We define top-tier banks as those in the top decile of market share in a given year. We then run our main regression of acquirer CAR on advisor completion ratio and control variables for these sub-samples of observations sorted by advisor tiers and acquirer governance levels. In unreported results, we observe that acquirer returns are positively related to advisor completion ratio only if the firm has good corporate governance, in both the top-tier advisor and non-top-tier advisor sub-samples. These results suggest heterogeneity in advisor expertise across banking tiers. The results also imply that strong governance complements advisor skill regardless of whether or not an acquirer hires a top-tier advisor.

## VI. Conclusions

We examine the value implications of acquirers' focus on merger completion and the accompanying incentives they provide investment bank advisors, and we report several main findings. Investment banks' expertise in completing mergers is persistent; banks with a strong prior track record of completing mergers are associated with more likely completion of mergers announced in the future. We also find a positive relation between an investment bank advisor's prior completion ratio and its acquirer client's



announcement period returns for acquirers with strong corporate governance, measured by the level of anti-takeover provisions of the acquirer. We also find some evidence that the relation between advisors' completion ratios and acquirers' acquisition returns is negative for acquirers with weak corporate governance. These patterns remain similar in top-tier and non-top-tier sub-samples.

Our results suggest that advisor completion ratio is a robust proxy for potentially value-creating advisor expertise; to our knowledge, this proxy has not been seriously considered by existing literature, which focuses primarily on advisor market share. Overall, the results show that the focus on merger completion can be consistent with value maximization. That is, some investment banks possess expertise in facilitating mergers that create more value for their acquirer clients, which manifests itself in a higher record of completing announced mergers assisted by these advisors. Exactly how merger completion expertise drives value creation is not clear. It is possible that completion expertise is indicative of an advisor's ability to reduce merger expenses and prevent offering price increases. It is also possible that skilled advisors are able to identify (and thus avoid) value-destroying mergers before they are announced. Future studies on the specific nature of an advisor's ability to create value in mergers would be illuminating.

Importantly, the evidence indicates that acquirers and their incentives play an important role in their decision to use advisor expertise. While completion expertise is potentially value-increasing, it may also destroy value if an acquirer's incentives are ex ante misaligned with value-maximization. The evidence is consistent with the idea that

advisors are employed by acquirers and act according to the mandate that acquirer managers delegate.

Finally, the evidence implies that the seeming inefficiency and conflict of interests embedded in advisory contracts suggested by McLaughlin (1990) may, in fact, be efficient. By contracting advisory fees to be contingent on deal completion, acquirers may be providing incentives for banks to help them pursue better mergers. On the other hand, contingent fees also appear consistent with the goals of acquirers that pursue mergers for purposes of empire-building. The focus on completion is value-increasing only for acquirers with strong governance. Consequently, the reasons for an acquirer's provision of merger completion incentives may differ according to the acquirer's motivations. More research, however, is needed to examine the efficiency of contingent advisor compensation.

Essay 2: Investment Banks and their Affiliated Mutual Funds: International Evidence from IPO Allocations

## VII. Introduction

In this study, we examine a potential conflict of interest between the investment banking and asset management divisions of financial services firms worldwide. Specifically, we look at how investment banks allocate IPOs to their affiliated mutual funds, given their informational advantage about the quality of the IPO prior to the offering. A bank could allocate hot IPOs to affiliated funds in an effort to improve fund returns and increase management fee income, which existing literature calls the nepotism hypothesis (Ritter and Zhang, 2007). On the other hand, banks may use affiliated mutual

funds as a means to subscribe cold IPOs to preserve investment banking fee income at the expense of fund shareholders, known as the dumping ground hypothesis.

Ritter and Zhang study this issue in the U.S., and their empirical results yield mixed evidence. The authors find limited support for the nepotism hypothesis, but only during the Internet bubble period of 1999-2000 when the overall IPO market was very strong. Their study focuses on IPOs in a country with a highly developed stock market and strong investor protection; in the U.S., Rule 10f-3 of the Investment Company Act of 1940 is in place for the express purpose of preventing IPO dumping. Although Ritter and Zhang's work is groundbreaking, it may also be illuminating to explore cross-country differences in IPO allocations involving mutual funds that are affiliated with IPO underwriters. Variation in country-level institutions that protect investors could provide insight into whether underwriters are favoring or taking advantage of affiliated mutual fund shareholders.

We analyze IPO allocations to affiliated mutual funds in 24 countries during the period covering 1999-2009. We test the effect of cross-country variation in investor protection on IPO allocations to mutual funds affiliated with the offering's lead underwriter (or "affiliated mutual funds"). One of our goals is to identify country-level investor protection measures that either mitigate or aggravate the conflict of interest between a financial firm's investment banking and asset management divisions. Such an exploration may shed light on whether and how financial conglomerates use IPO allocations take advantage of mutual fund investors, and what might be done to prevent it.

We begin our analysis by comparing IPO first-day returns (or “initial returns”) across countries. Initial return represents the degree to which an IPO is underpriced; any investors who receive allocations of underpriced IPOs capture the gains from this underpricing. In Europe and the Asia-Pacific region, we find that IPOs purchased by mutual funds that are affiliated with the offering’s lead underwriter (we call these offerings “affiliated IPOs”) have significantly lower initial returns than IPOs not purchased by an affiliated fund. In contrast, IPOs purchased by affiliated funds in the United States tend to perform significantly better, consistent with Ritter and Zhang’s (2007) univariate results. Next, we look at how country-level measures of investor protection are associated with initial returns. We utilize common measures of investor protection employed by existing literature, including a country’s legal origin and indices of anti-self dealing regulations, disclosure requirements, prospectus liability, and judicial system quality. Both affiliated and non-affiliated IPOs have significantly higher initial returns in countries with strong investor protection.

Interestingly, across all measures of strong and weak investor protection, affiliated IPOs have lower mean initial returns than IPOs not purchased by affiliated mutual funds. This evidence suggests that affiliated mutual fund shareholders may be missing out on their affiliated underwriter’s best IPOs, consistent with the dumping ground hypothesis. However, simple mean comparisons provide only a rough picture, so we turn to multivariate analysis.

We next examine the determinants of an IPO’s initial return. After controlling for relevant deal characteristics, we find that IPOs purchased by affiliated mutual funds are associated with significantly lower first-day returns, consistent with the dumping ground

hypothesis. We also find that stronger investor protection is associated with higher initial returns, benefiting fund investors. This result is robust to multiple measures of investor protection. Furthermore, the interaction between strong investor protection and allocations to affiliated mutual funds is positive and significant—in other words, the positive effect of strong investor protection appears to offset the negative relation between allocations to affiliates and IPO initial returns. This result highlights how country-level governance mechanisms may mitigate one conflict of interest within financial conglomerates. Specifically, strong investor protection appears to prevent IPO dumping.

Finally, we examine how IPOs are allocated to affiliated mutual funds. In particular, we are interested in whether cold IPOs—those with negative initial returns—are more likely to be allocated to affiliates, as these IPOs seem most likely to be undersubscribed and prone to dumping. Interestingly, we find a negative association between investor protection measures and the likelihood that an IPO is purchased by an affiliated mutual fund—that is, an IPO in a country with strong investor protection is less likely to be allocated to an affiliated mutual fund. Furthermore, the interaction between strong investor protection and cold IPOs is negative and significant. In other words, cold IPOs are even less likely to be allocated to affiliates when investor protection is stronger. It appears that stronger protection dissuades the underwriter from dumping a cold IPO on its affiliated mutual funds, consistent with our argument that strong investor protection can prevent IPO dumping.

Finally, we compare the long-run performance of affiliated IPOs to offerings not allocated to affiliates. Although both of these categories of IPO tend to underperform

various benchmarks in the long run, we find no significant differences between the underperformance of affiliated and unaffiliated IPOs.

This study contributes to existing literature in two areas. First, our results build on the relationship between investment banks and their affiliated mutual funds. We show new evidence consistent with the dumping ground hypothesis, representing empirical support for a conflict of interest between underwriters and shareholders of their affiliated mutual funds. Prior literature has not found robust evidence of this conflict. Second, our analysis provides new insight into cross-country variation in IPO underpricing. Country-level measures of investor protection have explanatory power for IPO first-day returns, and strong investor protection appears to offset the negative impact of affiliations between underwriters and mutual funds. In other words, investor protection may prevent IPO dumping, benefiting mutual fund investors. This evidence highlights the importance of effective regulation in dealing with conflicts of interest within financial firms. As banks continue to expand the scope of their activities, new potential conflicts will arise, meaning that policymakers must continually strive to understand client interests so that they may be protected. The remainder of this paper is organized as follows. Section 2 briefly reviews relevant literature. Section 3 describes the data. Section 4 examines IPO initial returns, affiliations, and investor protection. Section 5 covers long-run IPO performance, and section 6 concludes.

## VIII. Literature Review

A few studies have examined IPO allocations to mutual funds affiliated with the offering's lead underwriter. As mentioned above, Ritter and Zhang (2007) lay the groundwork for our study. They analyze U.S. IPOs purchased by mutual funds between

1990 and 2001. The results in their study are mixed; there is no robust support for either hypothesis. The authors find limited evidence supporting the nepotism hypothesis, particularly during the Internet bubble period of 1999-2000. During periods when the overall IPO market is hot, IPOs purchased by funds affiliated with the lead underwriter are associated with higher initial returns. In other years, the relationship is insignificant. Ritter and Zhang provide insight into how affiliated IPOs are allocated to mutual funds in a country with a highly developed stock market and strong investor protection. Their study provides a foundation for our investigation of how this potential conflict of interest between investment banks and their affiliated funds might vary across different economic and regulatory environments.

Ber, Yafeh, and Yosha (2001) examine a small sample of 128 Israeli IPOs, and they find that IPOs purchased by affiliated funds have significantly lower returns if the affiliated bank is also a lender to the IPO firm. If the bank is not a lender, then affiliate-purchased IPOs do not realize poorer performance. Although their analysis is limited to a small sample from a single Middle-Eastern country, the results of Ber, Yafeh, and Yosha suggest that there may be circumstances under which banks favor other business lines at the expense of mutual fund shareholders.

Johnson and Marietta-Westberg (2009) also look at the relationship between equity IPO underwriters and affiliated mutual funds, but their main concentration is on stocks purchased on the secondary market by funds affiliated with the underwriter. The authors argue that banks may use affiliated mutual funds to purchase shares of poorly-performing IPO clients in an effort to win future underwriting business from that client. In addition, they find some evidence that funds can gain an informational advantage from

their underwriter affiliates, similar to the nepotism hypothesis of Ritter and Zhang (2007). Johnson and Marietta-Westberg's results suggest that affiliation with an investment bank can result in both a conflict of interest as well as an informational advantage.

There are differing viewpoints about how cross-country investor protection is related to affiliated IPO initial returns. Boulton, Smart, & Zutter (2010) argue that strong investor protection increases the ability of outside blockholders to monitor managers, building on Brennan and Frank's (1997) model based on reduced monitoring incentives. Managers respond by setting an artificially low price for the firm's IPO, which creates excess demand for the offering and thus prevents a single investor from receiving a large block of shares of the offering. IPO underpricing thus results in oversubscription and more diffuse ownership, reducing shareholders' incentive to monitor and helping managers protect their private benefits of control. Consequently, Boulton, Smart, & Zutter contend that strong investor protection should be associated with greater IPO underpricing, or higher initial returns. Consistent with this rationale, the authors find that underpricing is higher in countries with stronger investor protection. They employ standard country-level measures of investor protection, including the anti-director rights index of La Porta, Lopez-de-Silanes, Shleifer, and Vishny ("LLSV") (1998), and the anti-self-dealing index of Djankova, La Porta, Lopez-de-Silanes, and Shleifer ("DLLS") (2008).

Engelen and van Essen (2010) claim that strong investor protection reduces uncertainty about managerial decisions that decrease firm value. Lower uncertainty means that firms are able to offer shares at a smaller discount; thus, Engelen and van Essen argue that strong investor protection can be associated with lower levels of IPO



underpricing and lower initial returns. They find a negative relationship between IPO underpricing and many of the same investor protection measures used by Boulton, Smart, and Zutter. Egelen and van Essen use hierarchical linear modeling in their analysis, arguing that IPOs from the same country naturally fall into a hierarchical structure. Banerjee, Dai, and Shrestha (2011) also find that IPO underpricing is negatively associated with mechanisms relating to contract enforcement and litigation risk, measured by the anti-self-dealing index of DLLS (2008) and prospectus liability index of La Porta, Lopez-de-Silanes, and Shleifer (“LLS”) (2006), respectively.

The disparity in the evidence presented by these studies suggests that the relationship between IPO underpricing and investor protection has not yet been resolved. One of our aims is to explore this relationship further by anchoring it to a potential conflict of interest between participating agents—i.e., underwriters and their affiliated mutual funds.

More general studies of IPO underpricing abound, going back at least as far as Rock’s (1986) model based on information asymmetry between informed and uninformed investors. As described above, Brennan and Franks (1997) present a model to explain why IPO underpricing is so prevalent. In their model, managers seek to avoid monitoring by outside blockholders. To do this, they offer underpriced shares to ensure excess demand for an IPO, leading to oversubscription, allowing the offering to be divided into smaller allocations to bidders, and ultimately more diffuse ownership among those initially allocated shares of the offering. The authors argue that managers use underpricing as a tool to avoid monitoring and maintain control of the firm. Liu and Ritter (2011) show that the market for equity IPO underwriting consists of local

oligopolies, since banks do not seem to compete on price. Lowry, Officer, and Schwert (2010) examine a return period of 21 days from the offer, much longer than the typical measure of underpricing. They find that return volatility is higher among firms with more information asymmetry, highlighting the challenge faced by underwriters in valuing issuers. Carter and Manaster (1990) develop a metric for ranking underwriter reputations based on underwriters' relative positions in U.S. tombstone announcements. They find that underwriter prestige is associated with less risky, lower-return IPOs, where IPO return is measured in the first two weeks following the announcement. Megginson and Weiss (1991) construct an underwriter reputation measure based on market share, and although their study focuses on venture capital-backed IPOs, they find that underpricing for IPOs without VC backing is negatively related to underwriter market share, consistent with Carter and Manaster (1990). In contrast, Hoberg (2007) measures underwriter quality based on a bank's prior record of IPO initial returns, and he finds that a strong prior record of IPO underpricing is associated with higher future IPO initial returns.

Another relevant segment of the finance literature deals with conflicts of interest between different business lines of the same financial institution. Because banks are providing an ever-widening scope of services, this field is quite broad, and Mehran and Stulz (2007) provide a general review. The most relevant of these studies are those that specifically address conflicts of interest between mutual funds and their affiliates. Reuter (2006) analyzes the relationship between IPO allocations to mutual funds and prior brokerage commissions paid by the funds to the IPO's lead underwriter. He finds a positive relationship between brokerage commissions paid and IPO allocations. This relationship is limited to IPOs with non-negative first-day returns, consistent with the

intuition that a bookrunner must look beyond its most favored clients in order to subscribe a cold IPO. Most relevant to our study, Reuter finds that this relationship holds whether or not the fund is affiliated with the underwriter, suggesting that IPO allocations are “for sale” to both affiliated and non-affiliated mutual funds. Jenkinson and Jones’ (2009) survey of institutional investors shows that money managers’ perceptions of factors affecting IPO allocations are consistent with Reuter’s results—institutional investors view brokerage relationships as highly important for determining IPO allocations.

Equity IPOs are not the only channel through which mutual funds and their affiliates interact. Massa and Rehman (2008) find that a mutual fund tends to buy more stock in firms that borrow from the fund’s affiliated bank. These stocks tend to outperform similar stocks with no lending relationship between firm and affiliated bank. The authors argue that the bank gains an informational advantage about the firm as a result of the due diligence associated with the lending relationship, which the bank uses to benefit its affiliated mutual funds. This evidence is in line with the nepotism hypothesis. Funds may also benefit from affiliated research analysts. Guidola and Molin (2009) find that an analyst is likely to assign more favorable ratings to stocks recently purchased by mutual funds affiliated with that analyst. These stocks tend to realize positive abnormal returns, further evidence that affiliates can be beneficial to mutual funds.

Overall, existing literature presents evidence that relationships exist among IPO initial return, affiliations between underwriters and mutual funds, and investor protection.

However, conflicting results within these studies highlight the ongoing debate over the nature of these relationships.

## IX. Data and Summary Statistics

### M. Data Sources

We use the Thomson SDC Platinum database to collect equity IPOs issued between 1999 and 2009. We collect IPOs held by funds in countries with a substantial institutional investor base, as analyzed by Ferreira and Matos (2008). We exclude unit offerings, American depository receipts, real estate investment trusts, closed-end funds, partnerships, and banks/savings & loan associations. We obtain global mutual fund holdings data from the FactSet LionShares database. Our proxy for IPO allocations follows existing literature. Funds that report holdings of an IPO within 180 days of the offering date are considered to have been allocated the IPO. Because our main concern is how IPOs are allocated to mutual funds depending on their affiliation with the underwriter, we consider only IPOs underwritten by investment banks that have affiliated mutual funds, and we also restrict our sample to IPOs held by at least one mutual fund (affiliated or unaffiliated) within 180 days of the offering date, consistent with Ritter and Zhang (2007). We calculate initial returns using pricing data from Thomson Datastream. Initial return is calculated as the percentage difference between the IPO offering price and the closing price on the first day of trading. In order to prevent the influence of outliers and data exceptions, we winsorize observations in the top and bottom one percent of initial return. Our final sample consists of 2,636 IPOs from 24 countries. Affiliated mutual funds report holdings of 703 of these IPOs within 180 days of the offering date.

We use multiple sources to identify affiliations between underwriters and mutual funds. We examine annual reports, SEC filings, and company websites to obtain the names of asset management subsidiaries and mutual fund families. We also perform manual matching, similar to Ritter and Zhang's (2007) methodology, identifying funds that contain the names of prestigious financial firms, and then using the auxiliary sources above to confirm the matching. In addition, we take into account major financial mergers and divestitures so that an acquired asset management firm is not treated as an affiliate of an acquiring underwriter until after the merger date. For example, after Wells Fargo & Company completed its acquisition of Wachovia in October 2008, an IPO underwritten by Wachovia and allocated to Wells Fargo mutual funds is treated as an affiliated IPO.

We are most interested in how the initial return of affiliated IPOs is associated with country-level measures of investor protection. Investor protection can be measured along numerous dimensions, as evidenced by the wealth of literature on the topic. As a result, we have at our disposal a sizeable set of potential investor protection measures that have been employed by existing literature—for example, DLLS, LLS, and LLSV alone each utilize over 20 distinct variables designed to measure investor protection. Because we lack theory to direct how to measure investor protection and other country-level institutions, we use variables that are both well-known in existing literature and also intuitive in the context of financial firm conflicts of interest. These data are taken from Andrei Shleifer's website.

The anti-self dealing index of DLLS (2008) is a natural proxy for investor protection here, as our study focuses on instances where a bank has interests on both the buying and selling sides of a transaction. The anti-self dealing index measures private

enforcement mechanisms applicable to affiliated-party transactions, including transparency requirements, ease of litigation, and board approval mechanisms. We also use the disclosure requirements index of LLS (2006). More rigorous disclosure requirements reveal to markets more information about the terms of securities offerings which—according to Boulton, Smart, and Zutter (2010)—should benefit fund investors through higher underpricing, as managers offer IPO shares at a discount to help ensure diffuse equity ownership. In addition, we employ two investor protection variables related to mutual fund shareholders' recourse against the bank that manages their money. The first is the prospectus liability index of LLS (2006), which measures provisions allowing for recovery of losses from a fund's asset manager, distributor, and accountant due to misleading statements in the fund's prospectus. Although a fund prospectus may not go into great detail regarding IPO allocations from an affiliated underwriter, liability for the content of the document is likely representative of a bank's overall liability for mistreatment of mutual fund shareholders through practices such as IPO dumping. Finally, we use a judicial system quality index, which Khorana, Servaes, and Tufano (2005) develop based on LLSV (1998) variables. This index combines elements related to the quality of a country's judicial system, as well as measures of government corruption and risk of expropriation, so that the index is designed to capture how effective a country's court system is in allowing shareholders to take legal action if they have not been treated fairly.

#### N. Summary Statistics and Univariate Analysis

Table 7 shows the geographic breakdown of our sample of IPOs. Not surprisingly, the United States has by far the most IPOs, and also the most IPOs that were

purchased by affiliated mutual funds. Some countries have very few IPOs, limiting our ability to conduct country-level analysis. Hence, for the univariate results that follow we aggregate IPOs to the regional level (later analysis includes country-specific information). Also, because U.S. IPOs may drown out relationships in other countries, we will treat the United States as a separate region for purposes of univariate analysis.

We are interested in how IPO initial return is related to the affiliation between an IPO's lead underwriter and the mutual funds that purchase the offering. Table 7 compares initial returns as well as offering proceeds for IPOs according to whether or not an affiliated mutual fund was allocated shares of the offering. In Asia-Pacific and Europe, IPOs purchased by affiliated mutual funds have significantly lower initial returns than IPOs not purchased by affiliated funds. In addition, the pattern of lower initial returns for affiliated IPOs is consistent for individual countries within these two regions, with the exception of Finland and Spain. The evidence that affiliated mutual funds receive IPOs with lower initial returns than IPOs not allocated to affiliates is consistent with the dumping ground hypothesis. Results in Europe and Asia-Pacific contrast sharply with those for the United States—IPOs purchased by affiliated funds have significantly higher initial returns in the U.S. than other IPOs, consistent with the nepotism hypothesis and the univariate results of Ritter and Zhang (2007). Table 7 also shows the proportion of IPOs with positive initial returns, and the evidence is mixed. In the United States, affiliated mutual funds receive a higher proportion of IPOs with positive initial returns—and conversely, a lower proportion of “cold” IPOs with negative initial returns. The opposite is true in Europe, and affiliated funds that receive more cold IPOs is consistent with the dumping ground hypothesis. Average proceeds for affiliated

IPOs are significantly higher in most regions, consistent with the intuition that larger offerings have more total proceeds available to allocate to affiliates.

#### X. IPO Initial Returns, Affiliated Mutual Funds, and Investor protection

##### O. IPOs, Affiliated Mutual Funds, and Investor Protection: Univariate Analysis

The univariate results above provide mixed messages about what kind of IPOs investment banks allocate to their affiliated mutual funds. In the U.S., funds appear to benefit from their affiliation with equity underwriters, whereas in Asia and Europe, affiliated funds receive IPOs with lower initial returns. However, these results do not consider other factors associated with IPO initial return, including country-level investor protection mechanisms, some of which are designed to mitigate the potential conflicts of interest within financial conglomerates.

Consequently, we look at affiliated and unaffiliated IPOs across different measures of investor protection. Table 8 summarizes initial returns for affiliated and unaffiliated IPOs, which we further divide according to whether the IPO's country of issue has weak or strong investor protection measures. Legal origin is divided according to common (strong) and civil law (weak). For the other measures of investor protection, the strong (weak) protection sub-sample consists of countries with index values above (below) the median value—higher index values are all indicative of stronger investor protection. Looking across the rows of the table, it is clear that mean initial returns for affiliated IPOs are lower than those for unaffiliated IPOs. This difference is consistent with the dumping ground hypothesis and holds across all measures and levels of investor protection. Column 3 shows affiliated IPO initial returns for countries with strong and weak investor protection. Affiliated IPOs have higher initial returns in countries with



strong protection, measured by the anti-self dealing, disclosure requirements, prospectus liability, and judicial system quality indices. In addition, columns 5 and 6 of Table 8 illustrate that countries with stronger investor protection have a higher proportion of IPOs with positive initial returns. Although strong investor protection is generally associated with higher initial IPO returns, univariate results suggest that IPOs allocated to affiliated mutual funds have lower initial returns, in line with the dumping ground hypothesis. However, simple mean comparisons provide only a rough picture, so we turn to multivariate analysis.

#### P. IPOs, Affiliated Mutual Funds, and Investor Protection: Regression Analysis

In this section, we examine IPO initial returns and affiliations between funds and underwriters in a multivariate setting. We estimate regressions using OLS where the dependent variable is an IPO's initial return. The main explanatory variable of interest is an indicator variable that takes a value of 1 if the IPO was allocated to a mutual fund affiliated with the offering's lead underwriter. By using an indicator variable, we forego information about the size of the allocation that each fund receives. On the other hand, we also eliminate noise in the allocation, which is of particular concern because our measure is only a proxy for mutual funds receiving allocations of IPOs.

The model contains control variables employed by existing literature that have been shown to be associated with IPO initial returns. Price changes leading up to the start of trading are a strong predictor of IPO initial return (Hanley 1993), so we include pre-offer price adjustment, measured as the percentage difference between the midpoint of the initial filing price and the final offer price (Aggarwal, Prabhala, and Puri 2002). Firm size is measured as the natural log of total assets. We include an indicator variable

that takes a value of 1 if the offering is a technology IPO, as in Ritter and Zhang (2007). Underwriter reputation has also been shown to be associated with IPO underpricing (e.g., Carter and Manaster 1990). We employ Megginson and Weiss' (1991) market share-based reputation measure, because it can be computed globally with ease. We also include the holdings of funds not affiliated with the IPO's lead underwriter, as institutional investors may hold some private information about the offering (Aggarwal, Prabhala, and Puri 2002). Cross-country variation in the development of financial markets has been shown to be associated with IPO initial returns, so we include the ratio of stock market capitalization to country GDP as a measure of stock market development (Loughran, Ritter, and Rydqvist 1994). Finally, we include calendar-year indicator variables to control for overall time variation in the IPO market—that is, periods of alternating “hot” and “cold” IPO market conditions. Throughout the paper, statistical significance is estimated using heteroskedasticity- and autocorrelation-robust standard errors clustered at the individual investment bank level to account for the possibility that IPOs underwritten by the same bank may be interrelated.

Results are presented in column 1 of Table 9. The coefficient on the indicator for purchase by an affiliated mutual fund is negative and significant, meaning that an IPO's initial return is negatively related to the offering's lead underwriter allocating shares to affiliated mutual funds, consistent with the dumping ground hypothesis. Specifically, the allocation of an IPO to an affiliated fund is associated with an initial return that is 5% lower than an IPO that is not allocated to an affiliate. Coefficients on control variables are generally in line with expectations and consistent with existing literature. Pre-offer price adjustment has a strong positive association with IPO underpricing, consistent with

existing evidence, as does underwriter reputation. Technology IPOs are also associated with higher initial returns.

In line with univariate results, multivariate evidence indicates that IPOs allocated to affiliated mutual funds have significantly lower initial returns, consistent with the dumping ground hypothesis. We next add various measures of investor protection to the model (described in section 3.2 above): (i) the anti-self dealing index of DLLS (2008), (ii) the disclosure requirements index of LLS (2006), and (iii) the prospectus liability index of LLS (2006). Results are presented in columns 2 through 7 of Table 9. The indicator for purchase by an affiliated mutual fund remains negative and is significant in four of seven specifications. Coefficients on investor protection variables are all positive and significant except in one model, consistent with our interpretation of how investor protection measures may benefit mutual fund shareholders (both affiliated and unaffiliated) by being associated with higher IPO underpricing.

We also include an interaction term between the indicator for allocations to affiliated mutual funds and investor protection, in order to investigate whether the association between investor protection and IPO initial return is different for IPOs that are allocated to affiliates. This interaction term is positive and significant for the anti-self dealing index, disclosure requirements index, and prospectus liability index. This interaction implies that the positive effect of investor protection offsets the negative relation between allocations to affiliates and IPO initial returns.

The evidence suggests that IPOs allocated to affiliated mutual funds are associated with lower initial returns. This association holds across multiple model specifications. However, stronger investor protection appears to offset this negative

relation—particularly when protection is measured according to self-dealing regulations, disclosure requirements, prospectus liability, and judicial system quality. These results are consistent with the argument that the conflict of interest we examine here can be mitigated by multiple country-level legal and regulatory institutions.

An important question is whether mutual funds are worse off for being allocated shares of IPOs from their affiliated investment banks. Despite the fact that IPOs allocated to affiliates are associated with lower initial returns than IPOs not allocated to affiliates, these affiliated IPOs still tend to have initial returns that are positive. Affiliated IPO first-day returns are positive and significant in all regions outside of Africa (which has very few observations), and mean initial returns are positive and significant at the country level for 17 out of 24 countries in our sample. Although the evidence that affiliates are allocated IPOs with only less positive (as opposed to negative) initial returns may well be concerning from a policy perspective, it would be more alarming if affiliated IPO initial returns were negative, which would be evidence consistent with severe IPO dumping that is harmful to mutual fund shareholders. It is precisely these IPOs with negative initial returns where the underwriter is likely to face the greatest challenge in completing the offering and also the greatest incentive to take advantage of mutual fund shareholders as a way to subscribe the IPO. Consequently, these IPOs may be an area of focus for policymakers looking to protect fund investors from IPO dumping. In the next section, we examine whether negative initial returns are associated with IPO allocations to affiliated mutual funds, and how investor protection affects that relationship.

### Q. Determinants of Affiliated IPO Purchases

As discussed above, different regulatory measures designed to mitigate bank conflicts of interest likely affect how banks engage in transactions with affiliates. In the context of our study, that means investor protection may influence IPO allocations to affiliated mutual funds. It is possible that strong investor protection impedes such allocations to affiliates, since more stringent regulatory and disclosure requirements may prevent banks from taking advantage of their potential conflict of interest, either through nepotism or IPO dumping. It is also possible that strong investor protection facilitates IPO allocations to affiliated mutual funds, as compliance with more stringent regulations may provide additional transparency so that banks can engage in transactions with affiliates without fear of litigation or regulatory enforcement. As described above, we are also particularly interested in how investor protection may be associated with the allocation process for IPOs with negative initial returns. Such cold IPOs are where evidence of harmful IPO dumping would manifest.

To test these associations, we model a logistic regression where the dependent variable is our indicator variable for IPO allocations to affiliated mutual funds. Our main explanatory variable is an indicator that takes a value of 1 if an IPO has a negative initial return, to see if cold IPOs are associated with allocations to affiliated mutual funds. We also include the same investor protection variables as those utilized above, as well as an interaction term between investor protection and the cold IPO indicator. If investor protection is effective in preventing IPO dumping on affiliates, then this interaction term should be positive and significant. Control variables are the same as those in the previous section.

Results are presented in Table 10. The coefficient for cold IPOs is weakly significant in only one of the eight models; thus, we do not observe compelling evidence that cold IPOs are more likely to be allocated to affiliated mutual funds. Coefficients on all but one of the investor protection measures are negative and significant, signifying a negative relation between the likelihood that an IPO is allocated to an affiliated mutual fund and country-level investor protection. The interaction between the cold IPO indicator and investor protection is also negative and significant for three of four investor protection measures. This negative interaction suggests that cold IPOs are even less likely to be allocated to affiliated mutual funds than IPOs that do not have negative initial returns. If investor protection measures are effective, then it is conceivable that such measures reduce the likelihood that underwriters will dump IPOs on their affiliated mutual funds.

Other coefficients are generally in line with expectations. The coefficient on pre-offer price adjustment is positive and significant, suggesting that an IPO that has a price run-up prior to the offering date is more likely to be allocated to an affiliated mutual fund. This relationship has intriguing implications that are discussed in the next section. In addition, technology IPOs are more likely to be purchased by affiliated mutual funds.

Overall, our analysis of the determinants of IPO allocations to affiliated mutual funds shows no support of serious IPO dumping on affiliates—that is, we do not find evidence that underwriters are more likely to allocate cold IPOs to their affiliated mutual funds. We do observe that the association between allocations to affiliates and investor protection is negative; furthermore, this association is significantly more negative when

an IPO has a negative initial return. In other words, strong investor protection appears to deter the dumping of cold IPOs on affiliates.

#### R. IPO Pre-Offer Price Adjustments

We further analyze the allocation process by focusing on how an IPO's price changes before the shares are offered to the market. Hanley (1993) finds that pre-offer price adjustments are a strong predictor of IPO initial return, and the robustly positive coefficient on price adjustment in Table 9 agrees with this contention. Also, underwriters are certainly more likely to have better information about pre-offer price adjustments than outsiders. Because IPO allocations are determined before the offer is finalized, relationships between price adjustments and allocations to affiliated mutual funds may be indicative of whether banks use their informational advantage for the benefit of fund shareholders. Indeed, in Table 10 we report a positive relation between pre-offer price adjustment and allocations to affiliated mutual funds, and our interpretation is that IPOs with greater pre-offer price run-ups are more likely to be allocated to affiliates, consistent with the nepotism hypothesis. Thus, we re-estimate regressions using pre-offer price adjustment as the dependent variable. Results are presented in Table 11 and show the same positive relation between price adjustment and allocations to affiliated funds. The indicator for the offering being purchased by an affiliated fund remains positive and significant in all specifications. Coefficients on investor protection measures are mixed and generally not significant. It does not appear that price adjustment is strongly associated with investor protection, although the relation between investor protection and price adjustment is not one that has strong implications for testing our main hypotheses.

In some ways, the positive relation between price adjustment and allocations to affiliated funds contrasts with our findings from Section 4.1 that IPO allocations to affiliates are associated with lower initial returns. Based on the results in Tables 10 and 11, it seems that banks attempt to use their informational advantage (knowledge of pre-offer price adjustment) to benefit affiliated fund shareholders, as higher adjustment is associated with a higher probability that the offering will be allocated to an affiliate. But it would not appear that banks' efforts are effective, as IPOs allocated to affiliates are associated with lower initial returns. More research on investment banks and pre-offer price adjustments could improve our understanding of the allocation process.

#### XI. Long-Run Performance of IPOs Allocated to Affiliates

Finally, we examine the long-run performance of IPOs that are allocated to affiliated mutual funds. We calculate the 3-year buy and hold return for IPOs in our sample. We also compare these 3-year returns to two benchmarks: (i) the return on the offering's Fama French size decile portfolio, and (ii) the CRSP value-weighted index. Results are presented in Table 12 and do not show any significant differences in long-run performance for affiliated versus unaffiliated IPOs. The pattern of long-run IPO underperformance appears to be present across all IPOs in our sample, consistent with existing literature (Foerster and Karolyi 2000, Ritter and Welch 2002). However, it does not appear that mutual funds are systematically allocated IPOs with better or worse long-run performance from their underwriter affiliates.

#### XII. Conclusion

Financial conglomerates with both equity underwriting and asset management divisions face a potential conflict of interest in how they allocate IPOs to their affiliated



mutual funds. The dumping ground hypothesis predicts that banks take advantage of this conflict by allocating cold IPOs to their affiliated mutual funds, preserving investment banking fees at the expense of affiliated fund shareholders. The nepotism hypothesis predicts that banks favor their affiliated funds and allocate better IPOs to them to increase asset management fee income. We analyze this potential conflict globally and find support for both hypotheses, as well as a significant role for country-level investor protection. Univariate evidence is in line with the dumping ground hypothesis in Europe and Asia-Pacific—that is, IPO allocations to affiliated mutual funds have significantly lower initial returns than IPOs not allocated to affiliates. In contrast, U.S. IPOs that are allocated to affiliates have significantly higher initial returns, consistent with existing literature and the nepotism hypothesis. After controlling for other factors associated with IPO underpricing, we still observe a negative relation between initial return and allocations to affiliated mutual funds. Country-level measures of investor protection are associated with higher initial returns, in line with Boulton, Smart, and Zutter's (2010) results. Furthermore, the positive effect of investor protection on initial return appears to be even stronger for IPOs that are allocated to affiliated mutual funds, consistent with the argument that better investor protection benefits mutual fund investors by discouraging underwriters from dumping IPOs on affiliated funds.

Despite this evidence, IPO initial returns are generally positive and significant for affiliated IPOs. Thus, the detrimental effect of underwriter-fund affiliation on mutual fund shareholders does not appear to destroy value per se; rather, it may only reduce the gains captured through IPO underpricing. In fact, we do not find substantial evidence that cold IPOs with negative initial returns are more likely to be allocated to affiliates—

which, if present, would be alarming evidence of IPO dumping. Furthermore, underwriters appear more likely to allocate IPOs to affiliates when pre-offer price adjustment is higher. Given that (i) pre-offer price adjustment is a strong predictor of underpricing, and (ii) underwriters typically have better knowledge of price adjustment before an offering than outsiders, this association seems consistent with the nepotism hypothesis. However, banks' ability to use their informational advantage to the benefit of affiliated mutual fund shareholders may be limited.

The fact that we find support for both the dumping ground and nepotism hypotheses highlights that some questions are still unanswered. Perhaps most importantly, why do affiliated mutual funds tend to receive IPOs with lower initial returns? Unfortunately, our proxy for affiliated IPO allocations is not fine enough to investigate how the pre-offer allocation process might be working in great detail. Reuter's (2006) study was pioneering in this area, but further research in the context of allocations to affiliates and investor protection could prove very revealing, especially with more granular data. Our study also emphasizes the importance of investor protection in mitigating the potential conflict of interest between a financial firm's investment banking and asset management divisions. However, there is more work to be done in identifying the specific dimensions of investor protection that mitigate this conflicts of interest. Given the evidence we have presented, this is an economically meaningful question for mutual fund shareholders. Future research that addresses this issue would also be illuminating.

Table 1

## Summary Statistics

This table reports the summary statistics. Data are obtained from the SDC Mergers and Acquisitions database for mergers and acquisitions during 1979-2007.

	Completed Mergers			Uncompleted Mergers		
	Median	Mean	Std. Deviation	Median	Mean	Std. Deviation
<b>Transaction characteristics</b>						
Merger size, \$ million	201.4	1604.0	6701.6	410.0	2652.9	8742.1
Acquirer CAR[-1,+1]	-0.87%	0.10%	0.11	-1.46%	-1.62%	0.09
Acquirer CAR[-10,+10]	-0.89%	0.73%	0.19	-2.90%	-2.97%	0.13
Target CAR[-1,+1]	14.74%	19.68%	0.28	12.73%	16.25%	0.21
Target CAR[-10,+10]	20.15%	25.65%	0.35	17.25%	21.70%	0.30
Days to completion	109	127.14	107.04	n/a	n/a	n/a
<b>Acquirer advisor characteristics</b>						
Completion ratio, 1-year	91.67%	87.75%	0.16	89.90%	84.84%	0.18
Prior clients' acquisition returns[-1,+1]	-0.77%	-0.59%	0.05	-0.48%	-0.42%	0.06
Market share, 1-year	2.48%	4.53%	0.05	2.58%	5.10%	0.06
<b>Number of observations</b>		4,223			564	

Table 2  
Determinants of the probability of merger completion

This table reports the determinants of the probability that an announced merger will be completed. Data are obtained from the SDC Mergers and Acquisitions database for mergers and acquisitions announced during 1979-2007. Regressions are estimated using Logit, where the dependent variable equals 1 if the merger is completed, and 0 if it is not completed. The model includes calendar-year dummies. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with z-statistics in parentheses.

Dependent variable	Pr (Merger Completion)		
	(1)	(2)	(3)
Completion ratio, 1-year	1.726*** (4.03)		
Completion ratio, 2-year		1.643*** (4.34)	
Completion ratio, 3-year			1.304*** (3.24)
Prior acquisition returns, 1-year	0.001 (0.00)		
Prior acquisition returns, 2-year		0.193 (0.34)	
Prior acquisition returns, 3-year			-0.233 (0.38)
Advisor's market share	0.367 (0.41)	0.155 (0.18)	0.071 (0.08)
Prior experience as advisor	0.018 (0.14)	-0.004 (0.03)	-0.013 (0.11)
Advisor is prior underwriter	0.092 (0.76)	0.036 (0.30)	0.030 (0.25)
Log(number of transactions as acquirer)	-0.072*** (3.28)	-0.072*** (3.40)	-0.068*** (3.27)
Number of bidders	-0.971*** (10.55)	-0.987*** (10.84)	-0.993*** (11.26)
Paid by cash	0.249** (2.32)	0.235** (2.28)	0.213** (2.12)
Firms in similar industries	0.151 (1.63)	0.217** (2.43)	0.222** (2.54)
Log(number of target industries)	-0.510*** (7.41)	-0.484*** (7.29)	-0.461*** (7.04)
Hostile takeover	-2.329*** (14.77)	-2.411*** (16.16)	-2.423*** (16.60)
Log(merger value/acquirer size)	-0.259*** (7.52)	-0.252*** (7.42)	-0.243*** (7.17)
Constant	2.093*** (4.94)	2.207*** (5.84)	2.503*** (6.27)
Observations	6,424	7,003	7,213

Table 3  
Determinants of acquirer CAR

This table reports the determinants of acquirer cumulative abnormal returns around the time of a merger announcement. Data are obtained from the SDC Mergers and Acquisitions database for mergers and acquisitions announced during 1979-2007. The dependent variable is acquirer CAR in the 3 days (-1; +1) surrounding the merger announcement. The model includes calendar-year dummies. The regressions are estimated using ordinary least squares. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with t-statistics in parentheses.

Dependent Variable	Acquirer Announcement Returns		
	(1)	(2)	(3)
Completion ratio, 1-year	0.053 (1.45)		
Completion ratio, 2-year		-0.024 (0.73)	
Completion ratio, 3-year			-0.044 (1.27)
Prior acquisition returns, 1-year	0.124** (2.28)		
Prior acquisition returns, 2-year		0.077 (1.32)	
Prior acquisition returns, 3-year			0.101 (1.53)
Advisor's market share	-0.012 (0.21)	-0.034 (0.62)	-0.059 (1.07)
Prior experience as advisor	-0.005 (0.75)	-0.005 (0.78)	-0.005 (0.84)
Advisor is prior underwriter	0.003 (0.45)	0.000 (0.07)	-0.001 (0.09)
Log(number of transactions as acquirer)	-0.006* (1.77)	-0.006* (1.92)	-0.005* (1.80)
Number of bidders	-0.010 (1.51)	-0.011* (1.70)	-0.011* (1.73)
Paid by cash	0.014** (2.01)	0.013** (2.07)	0.012** (2.00)
Firms in similar industries	-0.001 (0.09)	-0.001 (0.10)	0.000 (0.03)
Log(number of target industries)	-0.011* (1.79)	-0.010* (1.73)	-0.010* (1.77)
Hostile takeover	0.007 (0.59)	0.000 (0.01)	0.000 (0.02)
Log(merger value/acquirer size)	0.004 (1.57)	0.004* (1.72)	0.003 (1.59)
Constant	(-0.01) (0.16)	(0.06) (1.63)	0.077** (2.02)
Observations	1,815	1,986	2,038
R-squared	2.38%	1.80%	1.78%

Table 4

Summary statistics of advisor CAR for firms with strong and weak corporate governance

This table reports the average announcement period CAR for acquirers, split by the 2-year completion ratio of the acquirer's advisor. Merger data are obtained from the SDC Mergers and Acquisitions database. Governance data are obtained from the IRRC Institute. Mergers with advisors above (below) the median completion ratio are assigned to the high (low) sub-samples, shown in columns 1 and 3 (2 and 4). Panel A reports CAR for firms with weak corporate governance: G-index values in the top tercile and managerial ownership in the bottom tercile. Panel B reports CAR for firms with strong corporate governance: G-index values in the bottom tercile and managerial ownership in the top tercile. Bold typeface indicates that statistic is different from zero at the 0.10 level. P-values of the t-test for the difference between the means and medians are reported.

Percentage of completed deals, 2-year	High	Low	Difference P-value
	<b>G-index high</b>		
5-days acquirer returns around acquisition announcement			
Mean	<b>-2.84%</b>	-0.43%	0.05
Median	<b>-2.08%</b>	-0.70%	0.26
	<b>G-index low</b>		
5-days acquirer returns around acquisition announcement			
Mean	<b>2.29%</b>	<b>-1.86%</b>	0.02
Median	0.84%	<b>-1.98%</b>	0.12

Table 5

Determinants of advisor CAR for firms with strong and weak corporate governance

This table reports the determinants of 3-day (-1; +1) acquirer cumulative abnormal returns around the merger announcement date for firms with strong and weak corporate governance. Merger data are obtained from the SDC Mergers and Acquisitions database. Governance data are obtained from the IRRC Institute. The dependent variable is acquirer CAR in the 3 days (-1; +1) surrounding the merger announcement. The regressions are estimated using ordinary least squares. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with t-statistics in parentheses. P-values of the t-test for the difference between the coefficients are reported.

Dependent Variable: Acquirer Returns						
G-index	High	Low	P-value	High	Low	P-value
	(1)	(2)	Diff	(3)	(4)	Diff
Completion ratio, 2-year	-0.084 (1.02)	0.376*** (2.80)	0.004			
Completion ratio, 3-year				-0.215* (1.98)	0.309** (2.08)	0.005
Prior acquisition returns, 2-year	0.015 (0.11)	-0.057 (0.62)				
Prior acquisition returns, 3-year				0.103 (0.83)	-0.356** (1.99)	
Advisor's market share	0.184 (1.22)	0.275 (1.31)		0.129 (0.85)	0.262 (1.15)	
Prior experience as advisor	-0.014 (0.71)	0.034* (1.72)		-0.012 (0.62)	0.037* (1.90)	
Advisor is prior underwriter	-0.006 (0.31)	0.013 (0.66)		-0.005 (0.28)	0.009 (0.50)	
Log(number of transactions as acquirer)	0.005 (0.87)	-0.016** (2.38)		0.002 (0.45)	-0.017** (2.47)	
Number of bidders	0.029 (1.08)	-0.006 (0.36)		0.028 (1.00)	-0.007 (0.42)	
Paid by cash	0.032** (2.01)	0.059*** (2.91)		0.033* (1.94)	0.054*** (2.73)	
Firms in similar industries	0.009 (0.61)	-0.005 (0.21)		0.011 (0.75)	-0.007 (0.30)	
Log(number of target industries)	0.008 (0.63)	0.002 (0.12)		0.011 (0.82)	0.003 (0.16)	
Hostile takeover	0.110** (2.40)	-0.070* (1.88)		0.108** (2.21)	-0.069* (1.93)	
Log(merger value/acquirer size)	-0.011*** (2.78)	0.002 (0.38)		-0.011*** (2.75)	0.004 (0.67)	
Constant	-0.034 (0.42)	-0.331** (2.60)		0.056 (0.58)	-0.265* (1.91)	
Observations	158	157		161	159	
R-squared	17.29%	14.82%		17.42%	14.30%	

Table 6

Placebo tests of the determinants of advisor CAR for firms with strong and weak corporate governance

This table reports the determinants of 3-day (-1; +1) acquirer cumulative abnormal returns around the merger announcement date for firms with strong and weak corporate governance. Merger data are obtained from the SDC Mergers and Acquisitions database. Governance data are obtained from the IRRC Institute. The dependent variable is acquirer CAR in the 3 days (-1; +1) surrounding the merger announcement. The regressions are estimated using ordinary least squares. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with t-statistics in parentheses. P-values of the t-test for the difference between the coefficients are reported.

Dependent Variable: Acquirer Returns						
G-index Advisor	OLS: Acquirer Return			OLS: Acquirer Return		
	Low Actual	Low Placebo	P-value	Low Actual	Low Placebo	P-value
	(1)	(2)	Difference	(3)	(4)	Diff
Completion ratio, 2-year	0.376*** (2.80)	-0.085 (0.69)	0.011			
Completion ratio, 3-year				0.309** (2.08)	-0.100 (0.96)	0.025
Observations	157	158		159	165	
R-squared	14.82%	12.69%		14.30%	12.38%	

Dependent Variable: Acquirer Returns						
G-index Advisor	OLS: Acquirer Return			OLS: Acquirer Return		
	High Actual	High Placebo	P-value	High Actual	High Placebo	P-value
	(1)	(2)	Difference	(3)	(4)	Diff
Completion ratio, 2-year	-0.084 (1.02)	-0.123 (1.25)	0.747			
Completion ratio, 3-year				-0.215* (1.98)	-0.046 (1.21)	0.128
Observations	158	150		161	158	
R-squared	17.29%	21.38%		17.42%	19.39%	



Table 7

## Global IPO Activity

This table presents global IPOs purchased by affiliated and unaffiliated mutual funds. Affiliated mutual funds are affiliated with the IPO's lead underwriter. Initial return is the percentage difference between the IPO offering price and the first-day closing price. Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

	Number of IPOs purchased by			Initial Return		Proceeds (\$ million)	
	Affiliated Mutual Funds	Unaffiliated Mutual Funds	Total	Affiliated Mutual Funds	Unaffiliated Mutual Funds	Affiliated Mutual Funds	Unaffiliated Mutual Funds
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Australia	7	129	136	12.0%	35.1%	283.7	71.0
Hong Kong	26	100	126	7.9%	20.4%	487.4	107.7
India	17	41	58	40.5%	54.4%	456.2	82.2
Japan	79	289	368	42.0%	59.3%	239.5	32.8
Singapore	10	49	59	5.6%	27.6%	322.8	59.2
<b>Asia-Pacific Total</b>	<b>139</b>	<b>608</b>	<b>747</b>	<b>31.3%</b>	<b>44.9%**</b>	<b>320.6***</b>	<b>58.7</b>
Austria	9	13	22	1.6%	6.5%	437.2	218.6
Belgium	15	6	21	1.7%	11.4%	344.5	151.2
Denmark	2	10	12	4.0%	4.9%	69.6	68.1
Finland	5	5	10	9.9%	-4.4%	274.0	58.0
France	40	119	159	8.1%	10.6%	777.2	43.9
Germany	79	153	232	11.9%	13.6%	363.6	66.3
Greece	7	21	28	-5.4%	23.7%	154.4	115.3
Ireland	1	5	6	5.4%	11.2%	1,719.1	78.9
Italy	5	51	56	1.1%	13.1%	214.5	424.6
Netherlands	17	17	34	17.5%	24.6%	428.7	165.7
Norway	7	27	34	20.7%	36.8%	553.4	120.0
Poland	3	20	23	8.0%	32.6%	224.4	38.4
Spain	16	14	30	4.6%	0.7%	1,185.1	250.4
Sweden	10	13	23	7.4%	16.0%	947.5	162.9
Switzerland	13	11	24	14.9%	42.0%	470.0	76.9
United Kingdom	28	126	154	12.5%	22.4%	772.6	98.2
<b>Europe Total</b>	<b>257</b>	<b>611</b>	<b>868</b>	<b>9.7%</b>	<b>16.9%***</b>	<b>553.7***</b>	<b>114.9</b>
South Africa	2	10	12	-0.3%	18.5%	332.6	94.1
<b>Africa Total</b>	<b>2</b>	<b>10</b>	<b>12</b>	<b>-0.3%</b>	<b>18.5%</b>	<b>332.6</b>	<b>94.1</b>
Canada	26	69	95	17.9%	20.9%	194.2	63.9
<b>Americas (excl. U.S.) Total</b>	<b>26</b>	<b>69</b>	<b>95</b>	<b>17.9%</b>	<b>20.9%</b>	<b>194.2**</b>	<b>63.9</b>
<b>United States</b>	<b>279</b>	<b>635</b>	<b>914</b>	<b>46.1%***</b>	<b>30.0%</b>	<b>407.1***</b>	<b>110.1</b>
<b>Grand Total</b>	<b>703</b>	<b>1,933</b>	<b>2,636</b>	<b>28.5%</b>	<b>30.1%</b>	<b>437.0***</b>	<b>93.8</b>

Table 8

## IPO Initial Returns, Fund-Underwriter Affiliation, and Investor Protection

This table reports IPO initial returns based on (i) affiliations between the offering's underwriter and the mutual funds that were allocated the offering, and (ii) country-level measures of investor protection. Affiliated mutual funds are funds that are affiliated with the IPO's lead underwriter. Initial return is the percentage difference between the IPO offering price and the first-day closing price. Investor protection variables are the anti-self dealing index (DLS 2008), the disclosure requirements index (LLS 2006), prospectus liability index (LLS 2006), and judicial quality index (Khorana, Servaes, and Tufano 2005). Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

Investor Protection Variable	Value	Number of IPOs		Initial Return: Mean		
		Affiliated (1)	Unaffiliated (2)	Affiliated (3)	Unaffiliated (4)	P-value (3)-(4)
Anti-self dealing index	(a) Above median	218	839	24.1%	38.0%	0.003
	(b) Below median	206	459	10.0%	16.0%	0.064
	P-value (a)-(b):		0.001	0.002		
Disclosure requirements index	(c) Above median	238	952	23.2%	35.3%	0.004
	(d) Below median	186	346	9.6%	16.1%	0.075
	P-value (c)-(d):		0.001	0.003		
Prospectus liability index	(e) Above median	236	869	22.3%	35.4%	0.001
	(f) Below median	188	429	8.3%	14.2%	0.039
	P-value (e)-(f):		0.001	0.001		
Judicial system quality	(g) Above median	193	609	23.1%	39.7%	0.001
	(h) Below median	231	689	10.3%	18.3%	0.005
	P-value (g)-(h):		0.001	0.001		

Table 9  
Determinants of IPO Initial Return

This table reports the determinants of IPO initial return, defined as the percentage difference between the IPO offering price and the first-day closing price. Affiliate purchases is an indicator that takes a value of one if the IPO is allocated to a mutual fund affiliated with the offering's lead underwriter. Investor protection variables are the anti-self dealing index (DLLS 2008), the disclosure requirements index (LLS 2006), and prospectus liability index (LLS 2006). Price adjustment is the percentage adjustment from the midpoint of the initial filing price and the final offering price. Underwriter reputation is the lead underwriter's market share in the year of the offering. Ln(Assets) is the natural log of the IPO firm's assets following the offering. Technology IPO is an indicator variable that takes a value for one if the IPO firm operates in a high-technology industry. Unaffiliated ownership is the percentage of the offering purchased by mutual funds not affiliated with the lead underwriter. Stock market development is the ratio of a country's stock market capitalization to GDP. The model includes calendar-year dummies. Regressions are estimated using ordinary least squares. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with t-statistics in parentheses. Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

	Investor Protection Variable						
		Anti-Self Dealing		Disclosure Requirements		Prospectus Liability	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Affiliate purchases</b>	-0.050** (2.29)	-0.029 (1.31)	-0.060** (2.10)	-0.029 -1.33	-0.095*** (3.31)	-0.046** (2.12)	-0.095*** (3.43)
<b>Investor protection</b>		0.418*** (6.95)	0.388*** (6.06)	0.369*** (7.15)	0.056** (2.07)	0.051*** (2.64)	0.019 (0.82)
<b>(Affiliate purchases) × (Investor protection)</b>			0.063* (1.74)		0.103*** (2.62)		0.108*** (2.70)
Price adjustment	1.699*** (17.93)	1.682*** (17.96)	1.675*** (17.95)	1.688*** (18.21)	1.679*** (17.87)	1.701*** (18.02)	1.681*** (17.67)
Underwriter reputation	3.522*** (5.65)	3.348*** (5.46)	3.226*** (5.23)	2.968*** (4.83)	3.171*** (5.14)	3.301*** (5.23)	3.212*** (5.11)
Ln(Assets)	-0.003 (0.57)	-0.001 (0.27)	-0.001 (0.31)	-0.007 (1.41)	-0.004 (0.89)	-0.004 (0.83)	-0.003 (0.66)
Technology IPO	0.115*** (4.88)	0.115*** (4.92)	0.113*** (4.83)	0.100*** (4.31)	0.110*** (4.67)	0.111*** (4.69)	0.111*** (4.71)
Unaffiliated ownership	-0.032*** (6.95)	-0.036*** (7.76)	-0.036*** (7.77)	-0.033*** (7.20)	-0.034*** (7.36)	-0.033*** (7.18)	-0.033*** (7.09)
Stock market development	0.030** (2.08)	-0.052*** (2.74)	-0.052*** (2.74)	-0.020 (1.24)	0.004 (0.24)	0.027* (1.95)	0.026* (1.86)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,636	2,636	2,636	2,613	2,613	2,613	2,613
Adjusted R-squared	22.42%	23.59%	23.63%	23.76%	22.90%	22.54%	22.70%

Table 10  
Determinants of IPO Allocations to Affiliates

This table reports the determinants of IPO allocations to mutual funds affiliated with the offering's lead underwriter. The dependent variable is an indicator that takes a value of one if the IPO is allocated to a mutual fund affiliated with the offering's lead underwriter. Cold IPO is an indicator that takes a value of one if an IPO has a negative initial return. Investor protection variables are the common law dummy (LLSV 1998), anti-self dealing index (DLS 2008), the disclosure requirements index (LLS 2006), prospectus liability index (LLS 2006), and judicial quality index (Khorana, Servaes, and Tufano 2005). Price adjustment is the percentage adjustment from the midpoint of the initial filing price and the final offering price. Underwriter reputation is the lead underwriter's market share in the year of the offering. Ln(Assets) is the natural log of the IPO firm's assets following the offering. Technology IPO is an indicator variable that takes a value for one if the IPO firm operates in a high-technology industry. Unaffiliated ownership is the percentage of the offering purchased by mutual funds not affiliated with the lead underwriter. Stock market development is the ratio of a country's stock market capitalization to GDP. The model includes calendar-year dummies. Regressions are estimated using logit. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with z-statistics in parentheses. Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

	Anti-Self Dealing		Disclosure Requirements		Prospectus Liability	
	(1)	(2)	(3)	(4)	(5)	(6)
Cold IPO		0.314 (0.83)		0.894* (1.80)		0.170 (1.06)
Investor protection	-2.917*** (8.35)	-2.808*** (7.73)	-1.953*** (6.64)	-1.727*** (5.42)	-0.346*** (3.25)	-0.229* (1.94)
(Cold IPO) × (Investor protection)		-0.638 (1.04)		-1.189** (1.99)		-0.590** (2.25)
Price adjustment	1.957*** (4.56)	1.939*** (4.52)	2.122*** (4.72)	2.045*** (4.57)	2.013*** (4.65)	1.912*** (4.41)
Underwriter reputation	14.394*** (5.89)	14.392*** (5.90)	16.851*** (6.75)	16.739*** (6.72)	15.804*** (6.41)	15.564*** (6.27)
Ln(Assets)	0.285*** (9.96)	0.284*** (9.93)	0.308*** (10.63)	0.306*** (10.54)	0.291*** (10.23)	0.289*** (10.16)
Technology IPO	0.489*** (4.31)	0.488*** (4.30)	0.560*** (4.88)	0.556*** (4.83)	0.551*** (4.82)	0.539*** (4.69)
Unaffiliated ownership	0.209*** (7.08)	0.209*** (7.09)	0.176*** (6.88)	0.177*** (6.89)	0.182*** (7.40)	0.181*** (7.40)
Stock market development	0.092 (0.89)	0.104 (1.00)	-0.204** (2.24)	-0.199** (2.19)	-0.481*** (5.43)	-0.488*** (5.48)
Constant	-4.040*** (10.83)	-4.116*** (10.80)	-3.498*** (9.67)	-3.678*** (9.72)	-4.590*** (14.22)	-4.609*** (14.28)
Observations	2,636	2,636	2,613	2,613	2,613	2,613
Pseudo R-squared	17.33%	17.37%	16.59%	16.73%	15.36%	15.53%

Table 11  
Determinants of IPO Pre-Offer Price Adjustments

This table reports the determinants of IPO pre-offer price adjustments, defined as the percentage adjustment from the midpoint of the initial filing price and the final offering price. Affiliate purchases is an indicator that takes a value of one if the IPO is allocated to a mutual fund affiliated with the offering's lead underwriter. Investor protection variables are the anti-self dealing index (DLS 2008), the disclosure requirements index (LLS 2006), prospectus liability index (LLS 2006), and judicial quality index (Khorana, Servaes, and Tufano 2005). Ln(Assets) is the natural log of the IPO firm's assets following the offering. Technology IPO is an indicator variable that takes a value for one if the IPO firm operates in a high-technology industry. Unaffiliated ownership is the percentage of the offering purchased by mutual funds not affiliated with the lead underwriter. Stock market development is the ratio of a country's stock market capitalization to GDP. The model includes calendar-year dummies. Regressions are estimated using ordinary least squares. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors that are clustered at the investment bank level. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively. Coefficient estimates are reported with t-statistics in parentheses. Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

	(1)	Investor Protection Variable			
		Anti-Self Dealing (3)	Disclosure Requirements (4)	Prospectus Liability (5)	Judicial System Quality (6)
Affiliate purchases	0.025*** (4.450)	0.014** (2.484)	0.009 (1.569)	0.010* (1.863)	0.005 (0.677)
Investor protection		0.013 (1.174)	0.000 (0.010)	-0.004 (0.448)	-0.002*** (3.362)
(Affiliate Purchases) × (Investor protection)		0.024** (2.500)	0.033*** (3.317)	0.035*** (3.381)	0.031*** (3.582)
Underwriter reputation	0.572*** (3.952)	0.513*** (3.523)	0.509*** (3.475)	0.508*** (3.426)	0.561*** (3.887)
Ln(Assets)	-0.002** (2.183)	-0.002** (2.160)	-0.002** (2.142)	-0.002** (2.027)	-0.002** (2.094)
Technology IPO	0.018*** (3.180)	0.018*** (3.050)	0.018*** (3.155)	0.018*** (3.155)	0.019*** (3.330)
Unaffiliated ownership	-0.003*** (4.077)	-0.003*** (4.281)	-0.003*** (4.346)	-0.003*** (4.311)	-0.003*** (4.140)
Stock market development	0.016*** (5.956)	0.011*** (3.807)	0.014*** (4.834)	0.016*** (6.088)	0.017*** (6.432)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	2,636	2,636	2,613	2,613	2,613
Adjusted R-squared	9.29%	9.55%	9.82%	9.84%	9.77%

Table 12

## Long-Run Performance of Affiliated and Unaffiliated IPOs

This table reports IPO long-run returns based on affiliations between the offering's underwriter and the mutual funds that were allocated the offering. Affiliated mutual funds are funds that are affiliated with the IPO's lead underwriter. 3-year holding period return is the percentage difference between the IPO offering price and the closing price three years after the offering. Benchmarks are the CRSP value-weighted index, and the return on the offering's Fama French size decile portfolio. Data are obtained from the SDC New Issues database for IPOs, and mutual fund holdings data are taken from the FactSet LionShares database. The sample period is 1999-2009.

Variable	Initial Return		P-value (1)-(2)
	Affiliated (1)	Unaffiliated (2)	
3-year holding period return, unadjusted	-10.0%	-3.5%	0.128
3-year return minus CRSP value-weighted index	-3.6%	-1.8%	0.617
3-year return minus size decile return	-10.9%	-9.4%	0.455
Number of Observations	582	1,503	

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