

# **Do Boutique Investment Banks Have the Midas Touch? Evidence from M&As**

George Alexandridis, Nikolaos Antypas, and Vicky Lee\*

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## **ABSTRACT**

The M&A advisory space has seen a profound shift since 2000s with boutique investment banks emerging as major competitors for bulge bracket and other full-service corporate financiers. We study whether the explosive rise of boutiques is justified by their M&A buy-side success. Using the U.S. domestic deals during the period 2000 to 2016, we perform short- and long-term event study analyses to estimate shareholder wealth effects on boutique-led M&As. We document that acquiring firms represented by boutique advisors generate significantly higher abnormal returns than those advised by full-service banks in difficult-to-value transactions with greater information asymmetry. These deals include private target deals, cross-industry acquisitions, and deals involving inexperienced bidders in the target sector. In these deals, boutique advisors reduce information asymmetry on the target firm and accrue more value creation to acquirers than do full-service banks using their distinctive knowledge and expertise in the target industry. Our study provides important implications for conventional wisdom on the role of financial advisors in M&As.

Keywords: Financial Advisor, Mergers and Acquisitions, Boutique Investment Bank, Advisor Reputation, Information Asymmetry

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\* Alexandridis, Antypas, and Lee are from the ICMA Centre, Henley Business School, University of Reading, U.K. All errors are our own.

Corporate takeovers generally cost millions to billions of dollars per transaction for acquirers. Given an exorbitant outlay of acquisitions on average, firms are required to identify an optimal target and thoroughly evaluate the offer price and synergies. Acquiring firms normally delegate these tasks to investment banks who can identify synergistic targets and ensure proper valuation. Empirical studies, for this reason, have recognized the importance of financial advisors in M&A and investigated their contribution to deal performance. Initially, studies in this area focused mainly on unfolding the correlation between advisor reputation, determined by the investment banking league table, and shareholder wealth gains surrounding merger announcements (Servaes and Zenner, 1996; Rau, 2000; Hunter and Jagtiani, 2003; Bao and Edmans, 2011; Golubov, Petmezas, and Travlos, 2012). While this angle has promoted concentrated interest on so-called top-tier investment banks in the league table, recent studies on financial intermediaries have shifted their research emphasis to examining the relation between industry expertise and the choice of advisor (Song, Wei, and Zhou, 2013; Chang et al., 2016; Graham et al., 2017). At the forefront of this shift are boutique financial advisors who independently provide corporate advisory service and business valuation in specialized industries.

A lot of factors differentiating boutique advisors from traditional full-service banks have fascinated corporate clients and investors. Statistically, in the U.S., boutique investment banks have partaken in M&A activities which amount to collective deal value of approximately \$2.3 trillion over the period 2000 to 2016. During this period, their reputation has superseded several bulge bracket investment banks in terms of advisory market share and for leading some of the largest M&A transactions. Refinitiv reports that the M&A fees earned by boutique investment banks surpass those by top five banks as of 2012<sup>1</sup>. In addition, majority of top-tier boutique investment banks in the league table<sup>2</sup> are founded by former bulge bracket dealmakers. This brings an intriguing intuition that boutique financial advisors have both an established client base to lead the business and ability to attract investors to handle large scale transactions. This notable transition of boutique brand has led to discoveries on the importance of industry expertise for value creation in M&A.

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<sup>1</sup> See Refinitiv, July 31, 2018, "Mega deals keep the M&A boom afloat".

<https://www.refinitiv.com/perspectives/market-insights/mega-deals-keep-ma-boom-afloat/>.

<sup>2</sup> The league table is available in Thomson One SDC Mergers and Acquisitions Database, Yearly Advisors Rank by Value. In 2018, four of boutique investment banks, Evercore, Centerview Partners, Lazard, and PJT Partners preceded the largest banks such as Bank of America Merrill Lynch, Citi, Credit Suisse, and Barclays from the top 10 US league table.

Another advantage that has boosted boutique firms' reputation includes their corporate governance. Boutique financial advisors avoid conflict of interest unlike their full-service counterparts which commonly cross-sell financial products and services to their clients to generate profit. After the financial crisis, however, large financial institutions became subject to stricter regulatory scrutiny for their financial misconduct. As such, many corporate clients started considering independence of financial services an important quality.

By serving mid-size to large cap corporations in major deals, boutique advisors have amplified their profile, becoming a major driver of financial advisory market. Despite their growing importance, limited insights have been offered regarding boutique financial advisors. One of the reasons is because their increasing reputation is fairly a recent phenomenon. Prior to mid-2000s, the M&A advisory space has been dominated by bulge bracket and other full-service financiers. Accordingly, much attention has been naturally devoted to top-tier bulge bracket bankers (Servaes and Zenner, 1996; Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010; Bao and Edmans, 2011; Golubov, Petmezas, and Travlos, 2012). Another reason is due to the lack of established database providing classification between full-service and boutique advisors.

Our study overcomes these limitations and systematically reviews why boutique intermediaries are becoming more important. Primarily, the investigation into boutique investment banks involve more recent periods during which their deal flow (market share) reflects consistent increase over the years regardless of the impact of merger wave. For example, our sample is comprised of U.S. M&As which involve a buy-side financial advisor over the period of 2000 to 2016. We shift the sample period from the prior study (Song, Wei, and Zhou, 2013) to a decade later<sup>3</sup>. We also manually classify financial advisors by cross-checking various sources which indicate the type of advisor at the time of deal announcements. Advisory classification provided in this study is not only much more comprehensive than the prior study<sup>4</sup>, but also corrects earlier misclassifications. More importantly, this study offers insights as to the economic implications associated with boutique intermediaries by examining their impact on acquiring firms' short- and long-term stock performance.

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<sup>3</sup> We redefine our sample period for the following reasons. The estimated sample period in Song et al. (2013) is from mid-1990s to 2006 which coincides with the fifth merger wave (1993-2001) defined by large value-destructive M&As. Due to the characteristics of this merger wave, bulge bracket banks had disproportionate advantages of receiving deal flows over boutique advisors during this period. Several of top-tier boutique firms such as Centerview Partners, Moelis & Company, and PJT Partners are also founded post-2006. Further, including the post-financial crisis period is crucial in this study as it is one of the primary reasons why independent financial intermediaries became more important.

<sup>4</sup> The number of boutique advisors classified in this study is 462 whereas that in Song et al. (2013) is 141.

The short-term equity performance of acquiring firms involving boutique investment banks is measured by cumulative abnormal returns (CARs) surrounding the merger announcement date. Their performance is then compared with those advised by full-service banks using multinomial cross-sectional OLS regression analysis. We find economically significant effect of boutique advisors on bidder CARs which exceed full-service deals by an average of 0.8%. This shareholder wealth gain is translated as an upside of \$96 million for a mean-sized bidder.

We further estimate public and private deals separately according to the target firm's public status. These deals present a different set of challenges that can be tackled by a specific type of advisors. In general, public deals require more resources and an established network to handle a broad range of tasks such as regulatory approval, preparation of fairness opinion, and funding for large scale mergers<sup>5</sup>. Private deals, on the other hand, impose substantial challenges in valuation and target searching because private firms contain greater information asymmetry than do public firms<sup>6</sup>. Thus, valuing and identifying private targets require higher level of segment expertise and due diligence (Officer, Poulsen, and Stegemoller, 2009). Our conjecture is that boutique advisors may be more valuable in private deals because of their commitment to and expertise in designated sectors. On the contrary, full-service advisors can be more useful for large scale public deals which require additional personnel, funding, and integrated solution to multiple services.

Consistent with our conjecture, we observe that boutique advisors undertake more proportion of private deals than do full-service banks and significantly improve announcement returns of bidders acquiring private targets with an average of 1.4% increase in CAR<sup>7</sup>. In public deals, the performance of bidding firms is statistically indifferent between boutique deals and full-service deals, implying boutique advisors who are capable of advising large public deals enable matching performance with their full-service counterparts. These findings have an important implication regarding the quality of boutique advisors. Previously, Golubov et al. (2012) have argued that top-tier advisors, majority of which are consisted of bulge bracket firms under their classification, place much more resources and efforts to public deals than to

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<sup>5</sup> Other complications bidders experience in public deals include lower bargaining power against public targets, reputational exposure as public deals draw more media attention, shareholder approval, and unavailability of post-deal indemnification (Golubov et al., 2012).

<sup>6</sup> Private firms are not listed in the stock market exchange. As such, their financial statements are not publicly available and are not as accurate or exclusive as those of public firms, making them difficult to be discovered and value.

<sup>7</sup> This wealth gain is comparable to \$121.4 million for a mean-sized bidder acquiring a private target.

private deals. As a result, top-tier banks exhibit superior performance in public deals only<sup>8</sup>. Our findings imply that while top-tier full-service banks may only be superior at public deals, boutique advisors are skilled at both public and private deals.

To substantiate this intuition, we perform propensity score matching (PSM). PSM matches comparable deals from each advisor group who manages extremely different client portfolios based on firm and deal characteristics and then compares acquisition performance. Thus, it effectively controls for endogeneity originated from fundamental dissimilarities in observables. This matching comparison allows us to examine whether boutique dealmakers deserve rapidly growing reputation relative to their larger competitors based on similar transaction portfolios. The results indicate that the excess returns that boutique advisors generate are even greater after matching, with an average of 1.57% increase in all deals and of 1.47% increase in private deals. Moreover, consistent with the previous outcome, boutique advisors still show comparable performance to full-service advisors in public deals after matching.

As well-documented by the literature, however, the OLS model also suffers from unobservable bias since advisors are not randomly chosen by their clients and certain advisor selection criteria that are unaccounted in our model might have driven the results<sup>9</sup>. To control for unobservable bias, we implement Heckman's two-step analysis using an instrumental variable which indicates whether the current financial advisor has advised an acquirer in the past five years. Interestingly, the first stage regression analysis indicates that boutique advisors are more likely to be retained by their previous clients for future acquisitions than are their full-service counterparts. Further, we discover that boutique advisors are less likely to be selected by highly levered firms and larger bidders acquiring relatively larger targets<sup>10</sup>. Instead, they are preferred by acquirers as the deal becomes harder to value and negotiate; such deals include cross-industry mergers and deals involving stock offers<sup>11</sup>. However, the second stage results show no evidence of unobservable selection bias in our model, verifying our earlier findings from the OLS analysis.

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<sup>8</sup> Golubov et al. (2012) argue that the reason why top-tier advisors outperform only in public deals is because reputational capital is much higher in public deals than in private deals, hence, they put more efforts to acquisitions of public targets.

<sup>9</sup> This is called omitted variable bias and cannot be controlled by PSM. Sample selection bias in financial advisor study is also specified in Golubov et al. (2012) and Song, Wei, and Zhou (2013).

<sup>10</sup> Highly levered firms require an advisor who can arrange financing for the acquisition. Large firms may prefer an advisor who can provide financing and more integrated advisory service for its scale and complexity.

<sup>11</sup> Diversifying deals have higher information asymmetry than those within related industry and, thus, require specific knowledge in the target sector. Stock offers are more difficult to negotiate than cash deals and are negatively associated with shareholder returns in public deals.

Additionally, we implement buy and hold abnormal return (BHAR) and calendar-time portfolio regression (CTPR) analyses to measure the long-term effect of boutique advisors on shareholder wealth gains. Both measures indicate that investors who invest in the bidder stock portfolio comprised of boutique deals outperform those who invest in full-service portfolio. The aggregated excess profit is up to 7.2% within 12 months and 14.4% within 24 months.

Our findings may make one wonder why do boutique advisors perform better than full-service banks and why in private acquisitions only? We deduce the reason from Capron and Shen (2007) who conclude that acquiring managers make informed choices in the acquisition of private targets where information asymmetry is greater. For public deals in which all the information about the target firm is known, there may be little room to make a difference in terms of offer price among capable financial advisors. Capron and Shen (2007) introduce two conflicting economic theories regarding information asymmetry to the M&A literature. The information economics theory (Akerlof, 1970) suggests that information asymmetry obstructs bidders from pursuing suitable targets by incurring costs to uncover the intrinsic value of the target. On the contrary, the strategic factor market theory (Makadok and Barney, 2001) views information asymmetry as an opportunity to obtain private information through which bidders can take advantage of negotiating the acquisition price<sup>12</sup>. If a financial advisor has significant knowledge in the target industry and can identify a better target for the acquirer, the concerns suggested by the information economics theory can be resolved, and as a result, the bidder can save a great deal of search costs. Further, financial advisors take a considerably important role in offering proper due diligence and valuation by minimizing information asymmetry to provide bidders better bargaining power. Boutique advisors in this regard are very resourceful as they not only are strongly sector specialized but are also frequently hired for due diligence to provide fairness opinion in public deals<sup>13</sup>.

To support our argument on the skills and expertise of boutique advisors, we employ two additional proxies of information asymmetry following Graham et al. (2017) and perform propensity score matching. The first proxy is cross-industry deals in which target firms operate in different industries from acquiring firms. The second proxy is bidders without prior acquisition experience in the target industry. Similar to our findings in private deals, in both

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<sup>12</sup> This theory is supported by Li and Tong (2018) who find positive correlation between bidders' announcement returns and targets' information asymmetry.

<sup>13</sup> This theory has been attested by Song, Wei, and Zhou (2013) who emphasize the skills and devotions of boutique advisors. They find that complex deals such as cross industry mergers and mergers with competing bids, which require greater due diligence, are more likely to involve boutique advisors, and they take longer time to complete transactions than do full-service banks to improve deal quality.

measures, bidders hiring boutique advisors outperform those hiring full-service advisors by an average of 1.37%.

We propose several contributions to the M&A financial intermediary literature. First, our study provides new empirical evidence on the quality of boutique investment banks based on the acquirer's announcement returns and long-term abnormal returns using the most comprehensive advisor classification data. We find that boutique advisors create greater value for their buy-side clients than full-service advisors do and are more likely to be retained by their clients for the future acquisitions. This finding corroborates with the conventional role of investment banks where advisory quality is translated into reputation.

Second, we use propensity score matching technique to compare advisor quality between boutique and full-service advisors based on justifiably analogous deals and control for sample selection bias in observables. Previous studies investigating the quality of M&A advisors do not account for observable differences in their client portfolios and simply compare overall deals among different groups of advisors. Such a comparison could potentially produce a biased outcome as it does not approximate counterfactual, an alternative outcome had the same deal been advised by the other advisor group. By applying PSM, we derive the alternative outcome and show that bidder returns improve significantly when involving boutique advisors rather than full-service banks. The improvements appear in transactions with particularly higher information asymmetry. We support this theory by uncovering the contribution of boutique advisors in acquisition performance of highly opaque deals such as private deals, cross-industry mergers, and acquisitions in target sectors within which the bidder has no prior experience.

Lastly, this study offers an important economic implication associated with antitrust issues concerning the market for financial intermediation. Previously, the advisory space has been dominated by a small number of bulge bracket banks who were largely responsible for the financial crisis. Market dominance by the limited number of players is known to restrain competition and endanger the free market economy. The emergence of boutique firms, therefore, is meaningful in that it promotes healthy competition and can potentially increase overall advisory quality as competing full-service firms will try to match their performance to uphold reputation.

The paper is structured as follows. Section I presents literature review related to financial advisors in M&A. Section II analyses market share of boutique investment banks. Section III is dedicated to data collection and descriptive statistics. Section IV performs empirical analysis. Section V is robustness tests, and Section VI concludes.

## **I. Literature Review**

It is an intuitive supposition that the quality of service determines advisors' reputation and their future market share. However, earlier studies do not seem to corroborate this intuition. The controversy related to advisor reputation and quality began with the expensive fee investment bankers used to charge for M&A deal-making in early 1990s. McLaughlin (1990) cautions that the contingency-based fee contracts upon deal completion can undermine value creation by promoting conflicts of interest between advisors and clients. Advisors under this contract can complete mergers just for the sake of receiving fees, without putting their best efforts to create value for the acquirer. Consistent with this conjecture, McLaughlin (1992) discovers later that reputable advisors do not necessarily improve deal quality considering their clients pay similar deal premia to those of non-top-tier clients.

Rationally, skilled financial advisors should be able to lower the premium by reducing information asymmetry on the target firm and increasing negotiation power for their acquirer clients. High premium means more of the value creation in merger is accrued to the target firm than to the acquiring firm. Thus, his finding on merger premia weakens the connection between reputation of advisors and the quality of their service. McLaughlin's theory is further substantiated by Rau (2000)'s discovery that the contingent fee structure allows investment banks to focus more on completing deals than improving deal quality. He observes that reputation of investment banks estimated by their market share is positively associated with both contingent fee payments and deal completion rate but is negatively related to acquirers' post-acquisition performance in tender offers.

Like McLaughlin (1992), a series of similar studies (Servaes and Zenner, 1996; Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010; Bao and Edmans, 2011) continue to disapprove this intuitive correlation between reputation and quality. Servaes and Zenner (1996) show that bidder returns do not change based on advisor reputation. Hunter and Jagtiani (2003) find that the use of top-tier advisor negatively affects shareholder returns for both acquirers and targets. Bao and Edmans (2011) assert that investment banks in general have positive contribution to deal outcome. However, they identify large variations in average CARs among top-tier investment banks and conclude that this variation induces negative association between average bidder returns and advisor market share. They further demonstrate that bulge bracket advisors associated with lower average CARs tend to take higher proportion of value-destructive deals than small deals with positive returns.



As demonstrated by constant divergence of top-tier banks' reputation from their deal quality, empirical efforts have been continuously made to unearth why reputable advisors do not improve deal outcome. Eventually, Golubov et al. (2012) find that advisor reputation matters in acquisition performance, but only in public deals. They report that bidders advised by top-tier banks exhibit superior abnormal returns during acquisition announcements. The outperformance is then explained by top-tier advisors' ability to identify and accrue greater synergies for their clients, justifying the premium advisory fee. Yet, they do not clearly elucidate as to why top-tier-banks make no difference in private deals and how a firm's public status justifies the significance of any mergers. In general, private targets are traded at discounts due to information asymmetry, thereby acquirers can capture more synergies than they do in public deals (Officer et al., 2009). Synergies on the bidding firm can be magnified, especially when the financial advisor has greater expertise in the target industry. For all things considered, private acquisition is an important indicator of advisor skill as private targets are harder to discover and value than public targets. Moreover, the number of private deals as a proportion of overall M&A volume is too high to be taken lightly.

While earlier studies have consistently failed to link the ongoing market dominance by top-tier banks with their advisory quality, Sibilkov and McConnell (2014) identify technical issues in measuring reputation and market share of investment banks. Specifically, earlier studies use a time-invariant methodology to define top-tier banks. For example, Golubov et al. (2012) define top-eight banks based on total deal value over the entire sample period as top-tier advisors without applying year-on-year change in ranking. This causes imperfect correlation between advisors' prior performance and their market share in following periods. Another measurement issue comes from the use of static market share in regression analysis. Sibilkov and McConnell (2014) re-examine Rau (2000) and Bao and Edmans (2011)'s model using change in advisory market share instead. Their methodology corrects both measurement issues originated from time-invariant definition of advisor reputation and market share and succeed in deriving different outcomes from previous studies. They find that prior client performance determines advisors' future deal flows as well as their market share and finally corroborates the unresolved puzzle.

Apart from advisor quality, questions still remain on how else market share is determined and what other fundamental roles financial advisors play. Bao and Edmans (2011) and Sibilkov and McConnell (2014) remind that prior acquisition performance is not the only decision criteria for hiring a financial advisor. Depending on the deal and acquirer characteristics, different types of advisors are hired, which is why the advisory market is not dominated by a

single best advisor. For example, an experienced acquirer with enough capital to purchase a target may hire an independent advisor specifically for a target recommendation and valuation advice, whereas an inexperienced bidder without funding would hire a full-service bank who can provide more integrated services as well as capital. For this reason, recent studies started changing their focus from measuring the quality of top-tier investment banks more toward identifying determinants of advisor selection.

The most researched topic is the relation between deal complexity defined by information asymmetry and industry expertise of financial advisors in M&A. Servaes and Zenner (1996) argue that the primary role of buy-side advisors is to reduce information asymmetry residing between a buyer and a seller. In support of this argument, they find that the probability of hiring an advisor increases when the target operates businesses across diverse industries. Diversified firms have greater information asymmetry on divisional cash flows, especially when they have operations outside the bidder's industry. Hence, when acquiring a diversified target, the financial advisor's expertise in the target industry is essential.

More studies affirm the importance of target sector knowledge in advisor selection of acquiring firms. Based on the most active fifty advisors by transaction value, Chang et al. (2016) document that the probability of hiring advisors increases with their expertise in the merger counterparty's industry. Graham et al. (2017) compare transactions led by industry specialists with those of non-specialist advisors and find that acquirers hiring specialist advisors in the target industry receive higher announcement valuation. This value creation is enabled by the specialized advisors' ability to negotiate a better price for their bidder clients by resolving information asymmetry on the target firm. Graham et al. (2017) add that due to the significance of sector knowledge in deal-making, more value is created by small/medium-sized specialist advisors than by bulge bracket banks.

Song et al. (2013) study the choice between boutique and full-service financial advisors and make the following discoveries: full-service banks mainly advise larger firms and firms with which they have prior lending relationship while boutique investment banks advise smaller but more complex deals which require sector-specific knowledge and experience such as cross-industry acquisitions, competing bids, and stock deals. They find that bidders advised by boutique investment banks on average pay lower premium than those advised by full-service banks.

As observed in these studies, the literature on the choice of M&A advisor presents more persistent findings corresponding to the conventional role of financial advisor: advisors can identify better merger opportunities and reduce transaction costs using their advisory skills and

industry expertise (Bowers and Miller, 1990; Servaes and Zenner, 1996; Song et al., 2013; Chang et al., 2016; Graham et al., 2017). We take these insights into measuring what kind of role boutique advisors play in the corporate takeover market outside the traditional measure of advisor-tier system and how they create value for their buy-side clients.

## II. Boutique Financial Advisors' Market Share

In this section, we illustrate how the market share of boutique advisors has evolved over time. To observe year-on-year change in market share of boutique advisors in comparison with non-boutique advisors, we produce the following Figures of buy-side advisory market share from 1990 to 2016 using U.S. domestic M&As. [Figure 1](#) describes the change in market share by the number of deals. [Figure 2](#) displays the change in market share by deal value. Both figures indicate that advisory market share of boutique investment banks has discernibly increased starting from 2002 backed by a number of tech mergers.

The perceived trend in advisory market share is complex and multi-faceted that various attributes must be considered from different angles. We suggest largely three factors to explain the change in advisory market share in M&A: regulation, economy, and competition.

First, we contemplate the role of regulation<sup>14</sup>. Late 1990s were marked by merger waves and mega deals conveyed by bulge brackets and full-service banks. This phenomenon was triggered by Section 20 enacted in 1997, which allowed commercial banks to increase investment banking revenue, blurring the role between commercial and investment banks<sup>15</sup>. Further, in 1999, the repeal of the Glass-Steagall Act (Gramm-Leach-Bliley Act) spurred more merger activities by full-service and bulge bracket banks, leading up to 2007 before the financial crisis<sup>16</sup>. During this period, bulge bracket banks benefitted from large deals due to their financing capacity. Another benefit came from cross-selling different types of services through pre-existing relationships. Boutique investment banks began to thrive since 2003 due

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<sup>14</sup> Bonaime, Gulen, and Lon (2018) suggest that uncertainty related to financial regulation strongly affects merger activity.

<sup>15</sup> Cornett, Ors, Tehranian (2002) estimate the effect of Section 20 subsidiaries on the performance of commercial banks and report enhanced operating cash flows due to investment banking activities. Bhargava and Fraser (1998) measure abnormal returns of large commercial banks around the Federal Reserve's conferral of expanded underwriting powers and find negative shareholder wealth effects as well as increase in idiosyncratic risk.

<sup>16</sup> Crawford (2011) contemplate the impact of the repeal of Glass-Steagall Act on the cause of financial crisis. Cyree (2000) discover that after the repeal, commercial banks that are granted powers by prior Section 20 subsidiaries generate higher abnormal returns.

to the sixth merger wave<sup>17</sup>. Up to this point, bulge bracket banks' market share did not suffer as much. However, the passage of the Dodd-Frank Act (DFA) in 2010 changed the game. The DFA stroke most full-service banks with relatively severer regulatory burdens including bulge bracket investment banks, all of which became bank holding companies (BHCs) since 2008. Auxiliary efforts to separate the role of commercial banks from investment banking after the financial crisis forced full-service banks to recoup their old business model. On the contrary, the regulation was more lenient toward independent investment banks and allowed them to be rediscovered.

The economic condition is also a significant factor that we cannot overlook. Post-financial crisis is an optimal ground for boutique investment banks to grow their presence. Most of all, the takeover market experiences a smaller number of mega mergers during this period (Alexandridis, Antypas, and Travlos, 2017), which means smaller deals that boutique advisors can pick up are more widely available. In addition, funding capacity, the biggest advantage of full-service banks, is less necessitated due to low interest rates, enhanced corporate cash reserves, and varied transaction methods such as stock exchange. Some boutiques also establish connections with other entities, through which clients can easily obtain financing for acquisitions.

The fierce competition in corporate advisory market further explains the relative change in market share between boutiques and non-boutiques, and this is where the advisory quality becomes relevant<sup>18</sup>. Boutique advisors provide unique advantages that are unobtainable from major full-service banks. As an independent advisory unit, boutique brand is synonymized with no conflicts of interest and senior level attention. Moreover, reputable boutiques, mostly founded by former bulge bracket bankers, retain deal-making skills, industry expertise, and established business relationships with major corporate clients. Given their comparative advantages, boutique investment banks can easily capture certain groups of corporate clients including those in niche markets where full-service banks rarely jump in<sup>19</sup>. In the empirical

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<sup>17</sup> Alexandridis, Mavrovitis, and Travlos (2012) describe the characteristics of the sixth merger wave which started in 2003 and ended in 2007 and find that bidders in general experience negative announcement returns.

<sup>18</sup> Additional competition comes from non-investment banks such as Private Equity, Venture Capital, Accounting firms, and Wealth Management, which also provide financial advisory services that are traditionally conveyed by investment bankers. Of all the advisors who serve as financial intermediaries in M&As between 1990 and 2016, approximately one fifth of them are non-investment banks.

<sup>19</sup> Niche markets include small and medium-sized mergers, independent advisory services on business valuation, due diligence, or fairness opinion, and certain industries, especially financial services, technology, and healthcare sectors. For example, boutique investment banks advise most financial conglomerates as top-tier banks would not advise each other to prevent information leakage to their direct competitors.

analysis section, we control for some of these characteristics to quantify value creation by boutique investment banks.

### **III. Data Collection and Descriptive Statistics**

#### **A. Sample Criteria**

M&A transaction data is collected from the Securities Data Corporation (SDC) Mergers and Acquisitions Database based on the following criteria. The sample includes acquisitions announced between January 1, 2000 and December 31, 2016. Both acquirers and targets are US domestic firms. Since the focus of this study is to measure acquiring firms' equity performance, bidders included in our sample are public, but targets are public, private, and subsidiary companies. We exclude deal types and acquisition techniques involving repurchases, recapitalisations, self-tenders, exchange offers, acquisitions of remaining interest, minority stake purchases, and intra-corporate restructurings. We further require that bidders own less than 10% of the target firm before the announcement and seek to acquire more than 50% based on the transaction value. Both successful and withdrawn deals are included and deals of at least \$1 million in transaction value are considered. Most importantly, the sample must contain non-missing observation for the buy-side financial advisor. This initial screening leaves a sample of 6,039 deals. To measure the performance of acquiring firms, we limit our sample to those which have stock price data available from CRSP and are traded in NYSE, AMEX, or NASDAQ with share codes 10 and 11. Lastly, we obtain bidders' accounting data from the Compustat annual database and merge all data sets together. The resultant final sample has 5,010 deals.

#### **B. Advisor Classification**

Song et al. (2013) classify advisors as full-service or boutique using sources provided by news accounts and the Dow Jones Factiva database<sup>20</sup>. Their classification was implemented manually by necessity; as of the moment of writing, there is no commercially available, curated

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<sup>20</sup> Song et al. (2013) apply strict definitions for advisor classification; boutique advisors are specialized in certain industries and provide M&A advisory service only, without full spectrum of diversified business lines such as sales, trading, underwriting, research, and lending. We thank Lei Zhou for providing the list of financial advisor classification.

database distinguishing between full-service and boutique advisors. As a result, we also classify advisors manually, but our task has been challenged by the advanced definition of “boutique investment bank” over time. For instance, defining boutique investment banks as advisory-service-only institutions is too strict for today’s standard and could potentially eliminate an actual boutique firm from its category. Nowadays, boutique investment banks frequently offer services beyond corporate advisory, with their divisions acting independently from each other. Hence, we apply a broadened classification plan in labelling advisors as boutique or full-service.

Our classification rationale is as follows. In general, boutique investment banks serve small or middle-market firms. However, boutique advisors with larger capital capacity and tremendous experience in certain industries serve large cap clients. Boutique advisors often have extended business lines such as wealth management, trading, investment, and research. Offering multiple non-corporate finance services does not automatically disqualify them from being boutique as long as financial advisory service is their core business and cross-selling products are clearly avoided to prevent the conflict of interest. The most apparent differences of boutique advisors from non-boutique advisors are drawn by the following characteristics: regional focus, industry specialization, independence of M&A advisory service from the firm’s other business lines, senior level attention, number of employees, independence of the investment bank subsidiary from its parent company, and the mean asset value of their corporate clients. On the contrary, if a firm provides both commercial and corporate advisory services and if M&A advisory is just part of their investment banking businesses, they are considered a full-service bank.

In order to validate our process, we cross-check the classification by manually searching for whether an individual investment bank is explicitly described as “boutique” or “full-service” through various sources such as S&P Global Market Intelligence from Bloomberg’s private company information section, SEC filings, company websites, news media, and past/local periodicals at the time of deal announcements. Collectively, these sources allowed us to accurately identify larger number of boutique advisors and correct earlier misclassifications in Song et al. (2013)<sup>21</sup>.

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<sup>21</sup> For reference, Song et al. (2013) have a sample of 141 boutique advisors and 152 full-service advisors. Of this sample, they misclassified 24 boutique advisors as full-service firms. We corrected for such misclassifications in our study.

Various sources often indicate directly whether a financial advisor is a boutique. We provide the example of Bigelow LLC. The excerpts below are located from the company's website and the S&P Global Market Intelligence database.

*“Bigelow LLC is an independently owned mergers & acquisitions advisory boutique focused on entrepreneur Owner-Managers. (Bigelow Website)”<sup>22</sup>*

*“The Bigelow Company LLC is an investment banking firm that provides financial advisory services to middle-market entrepreneurial companies in North America. It focuses on transactions between \$25 million to \$300 million. The firm provides restructuring, recapitalization, mergers and acquisition, divestiture, management consulting, debt and equity financing, and valuation advisory services. It focuses on aerospace, manufacturing, automotive, building materials, business services, commercial printing, computer hardware, distribution, education, electronics, environmental, industrial tools, metals, materials, publishing, specialty food, software, and telecommunications industries. (S&P Global Market Intelligence)”<sup>23</sup>*

The first source describes Bigelow as an M&A advisory boutique. The second source illustrates characteristics of a typical boutique advisor by providing information on the average size of its corporate clients, types of services provided, and specific sectors of expertise. Accordingly, we define Bigelow LLC as a boutique advisor. Under this classification, we identify 462 boutique advisors and 154 full-service banks between 2000 and 2016.<sup>24</sup>

### C. Descriptive Summary Statistics

[Table 1](#) exhibits summary statistics of (1) all advisor sample and of (2) boutique and (3) full-service advisor subsamples, respectively. We generate control variables which affect acquirer returns as well as the choice of financial advisor based on bidder and deal characteristics. The variable definitions are provided in [Appendix A](#).

First, we discuss bidder characteristics. Moeller, Schlingemann, and Stulz (2004) demonstrate strong size effects on acquirer announcement returns, documenting better returns

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<sup>22</sup> See “<https://bigelowllc.com>.”

<sup>23</sup> See “Company Overview of The Bigelow Company LLC” provided by S&P Global Market Intelligence.

<sup>24</sup> The list of advisor classification can be provided upon request.

for smaller acquirers. *Bidder size* is also one of the key determinants of advisor choice in Song et al. (2013). Accordingly, we control for bidder size in our regression analysis. The overall mean (median) bidder size in our sample is \$12,004.4 million (\$1,478.7 million). However, consistent with Song et al., boutique investment banks advise on average much smaller companies (\$6,480.8 million) than do full-service banks (\$15,241.0 million).

The *book-to-market* ratio is an important indicator of a firm's equity value and growth prospects. Growth firms, in general, have a low book-to-market ratio. Higher market value of growth stocks reflects their expected outperformance in the future, but it also indicates overvaluation. In mergers, bidders of growth firms receive negative market reaction around deal announcements as they frequently use overvalued stocks as a method of payment (Martin, 1996; Rau and Vermaelen, 1998). Conversely, value firms with a high book-to-market ratio are associated with greater announcement returns since their equity is undervalued (Lang, Stulz, and Walkling, 1989). Our sample shows that boutique investment banks advise more number of value firms than do full-service banks. The mean (median) book-to-market ratio of boutique clients is 0.551(0.501) while that of full-service clients is 0.463 (0.386).

*Run-up* is an estimation of pre-announcement returns potentially driven by the leakage of information on the forthcoming merger and is often used as a measure of insider trading (Keown and Pinkerton, 1981). Acquirers' pre-announcement stock price run-up is known to be negatively associated with bidder announcement returns (Masulis, Wang, and Xie, 2007) as inside-traders may capture part of the gains before the market is informed about the deal. Our mean (median) bidder run-up is -0.014 (-0.000) and is comparable between boutique and full-service deals.

Moeller, Schlingemann, and Stulz (2007) denote that high price *volatility* yields lower announcement returns for acquirers, especially those with stock transactions, as the fluctuating stock price weakens their negotiation power. Given the difficulty of valuation, bidders' stock price volatility can also inform about the advisor's skill. Overall, our sample displays mean (median) bidder stock price volatility of 0.027 (0.021), which is statistically indifferent between boutique and full-service clients.

Conventionally, as a measure of financial distress, *leverage* has negative implications on acquirer returns (George and Hwang, 2010). However, empirical studies dominantly find that highly levered firms are associated with positive announcement returns; while firms with excess cash are more likely to pursue a merger to build an empire, highly levered firms would undertake an acquisition only when merger synergies are greater than the risk of financial distress (see e.g. Lang, Stulz, and Walkling, 1991). Meanwhile, leverage is also closely related



to advisor choice decision because it indicates acquirers' funding capacity. Highly levered firms are more likely to hire full-service firms, whereas those with lower leverage may not require their financial advisor to additionally arrange capital. Consistent with our conjecture, our sample shows that full-service clients are more levered than boutique clients. The mean (median) leverage ratio of full-service clients is 0.226 (0.197) and that of boutique clients is 0.157 (0.109).

Similar to leverage, *liquidity* of acquirer is related to acquisition funding capacity<sup>25</sup>. Liquid acquirers are less likely to necessitate the level of funding that full-service banks are able to offer, meaning boutique clients are more likely to be liquid than full-service clients. Our sample statistics confirm this postulation and show that the mean (median) liquidity ratio of boutique clients is 1.274 (0.599) while that of full-service clients is 0.956 (0.436).

The next cluster of variables describe deal characteristics. *Deal value*, which represents target size, is negatively associated with announcement returns; the larger the target, the more the destruction of acquirer shareholder value due to the lengthy and costly process of post-acquisition integration (Alexandridis et al., 2013). Our sample statistics show that bidders are more likely to hire a full-service bank as deal size gets larger. The mean (median) deal value of boutique advisors is \$724.5 (95.1) million while that of full-service advisors is \$2,126.4 (430.4) million.

The target-bidder *relative size* has been known to be positively related to bidder returns, especially for successful mergers (Asquith, Bruner, and Mullins, 1983), but can have a negative effect on bidder announcement returns in public deals (Fuller et al., 2002). Our mean (median) relative size is 0.436 (0.180) and is similar between boutique deals and full-service deals.

A firm's public or private status in association with the method of payment has a significant impact on bidder announcement returns. Officer, Poulsen, and Stegemoller (2009) imply that stock consideration is better for private-target deals where information asymmetry is greater. By offering stocks, bidders can avoid overpayment and retain valuable target shareholders (Harford, Humphery-Jenner, and Powell, 2012). As mentioned in the analysis of the book-to-market ratio, stock financing is also preferred by growth firms because the exchange ratio is favourable to bidders when they use their inflated price to purchase the target. Contrarily, returns in public deals are positively associated with cash offer, but are negatively

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<sup>25</sup> Liquidity is also studied in the context of managerial hubris in M&A literature. Bidders with large cash reserves may pursue value-destroying acquisitions (Harford, 1999) as they are more susceptible to managerial hubris. This is further substantiated by the association of cash-rich bidders with more diversifying deals and less competing bids.

related to stock offer (Chang, 1998). Martin (1996) also suggests that bidders with large cash reserves or a block-holding in the target firm prefer to use cash transaction. Accordingly, we include both the target firm's public status and the payment method in our analysis.

*Public deals* and *private deals* comprise 39.9% and 60.1% of our sample, respectively. As expected, boutique investment banks focus more on private deals than do full-service banks. The mean rate of public deals that boutique (full-service) advisors take is 37.8% (41.1%) while that of private deals is 62.2% (58.9%). As for the method of payment, *all cash*, *all stock*, and *mixed payment* deals comprise 31.4%, 18.2%, and 50.3% of our sample, respectively. Song et al. (2013) highlight the skills of boutique advisors based on their frequent involvement in stock deals because these are harder to negotiate than cash offers and tend to negatively affect abnormal returns in acquisitions of public targets. Consistent with their finding, our sample indicates that boutique advisors take a larger proportion of stock deals than full-service banks do. The statistics show that 73.9% (65.4%) of the deals involving stock offer are advised by boutique (full-service) advisors.

Prior studies have found conflicting evidence on the announcement returns of *diversifying mergers*. Proposed motives for cross-industry mergers vary from managerial hubris to lower risk of default, which can be achieved through diversified revenue streams (Datta, Pinches, and Narayanan, 1992). For our study, diversifying deals are useful events in determining whether advisor expertise is beneficial to bidders, since acquiring an unrelated company requires critical knowledge in the target sector. While 33.9% of the transactions in our sample is diversifying mergers, full-service banks advise slightly higher proportion of these deals than boutique banks do.

Most *hostile takeovers* occur within related industries (Bhagat, Shleifer, and Vishny, 1990). Firms engaging in hostile deals typically pursue cost efficiencies and seek to increase market power but are highly susceptible to overpayment due to target firms' resistance (Bhagat et al., 1990). Thus, hostile deals have higher failure rates than friendly deals (Malmendier, Opp, and Saidi, 2016) and tend to have a negative effect on CARs. Hostile deals comprise only 1.6% of total acquisitions in our sample, more of which are advised by full-service banks than boutique advisors.

*Tender offers* occur when an acquirer or an investor seeks to acquire a controlling interest in a target company by purchasing shares directly from shareholders at a premium price. Studies show that successful tender offers, in which skilled acquirers takeover poorly managed targets, can increase shareholder returns of both bidding and target firms (Dodd and Ruback, 1977; Jarrell and Poulsen; 1989; Lang, Walkling, and Stulz, 1989). While tender offers

represent only 5.6% of our sample, a relatively larger proportion of these deals are advised by full-service banks.

In the last column of [Table 1](#), we display mean-difference tests (T-test) for each variable between the boutique and full-service subsamples. Except for run-up, volatility, and relative size, all the control variables exhibit significant difference in mean value. This indicates that boutique and full-service intermediaries advise clients of seemingly different profiles. We account for the potential effects of these differences on advisor selection and subsequent deal outcome by employing matching techniques in our empirical analysis section.

## IV. Empirical Analysis

### A. OLS Regression Analysis for Bidder CARs

Most studies examining the quality of financial advisors in M&As use their clients' cumulative abnormal returns (CARs) as a proxy for their economic contribution to a deal<sup>26</sup> (Bowers and Miller, 1990; Kale et al., 2003; Walter et al., 2008; and Golubov et al., 2012). In this study, we also measure the wealth effect of boutique advisors on acquirer performance using CARs in multivariate cross-sectional OLS regression analysis. The dependent variable in this model is 3-day bidder CARs surrounding the announcement date<sup>27</sup>. The key independent variable is *boutique* which takes the value of one if the deal involves a boutique advisor, and zero if it involves a full-service advisor. The relation between these two variables is reported in [Table 2](#)<sup>28</sup>. The regression model is controlled for acquiring firm and deal characteristics, and the definition of control variables is available in [Appendix A](#). Additionally, we control for *year fixed effects* as well as *industry fixed effects* based on Fama and French's 12 industry classification method<sup>29</sup>. All control variables are winsorized at 1%, and standard errors are adjusted for heteroscedasticity and bidder clustering.

The analysis of all deals in model (1) shows a positive and statistically significant coefficient for the boutique variable. This indicates that acquirers employing boutique

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<sup>26</sup> Also, the majority of event studies use cumulative abnormal returns (CARs) to estimate value creation in M&As. See Renneboog and Vansteenkiste (2019) for a review of M&A event studies.

<sup>27</sup> CAR is generated by deducting the benchmark return from the bidder's stock return over the event window. The benchmark return is estimated using market model over the period beginning -295 days and ending -45 days before the announcement. The event window is 3-day (-1, +1) surrounding the announcement date.

<sup>28</sup> We use a smaller number of observations for the regression analysis than in the sample statistics because we exclude 934 deals that are advised by both boutique and full-service banks to produce clean results.

<sup>29</sup> See Eugene Fama and Kenneth French (1997) "Industry Cost of Equity," *Journal of Financial Economics* 43. For industry classification, we use target firms' SIC code.

investment banks generate an average of 0.8% higher returns in acquisitions than those employing full-service advisors. This excess return translates as an upside of \$96 million for an average acquirer<sup>30</sup> and implies that boutique advisors in general make greater economic contribution for acquirers than do full-service banks.

However, as we mentioned earlier, target firms' public status may affect the acquisition performance differently given distinctive challenges associated with these deals, based on which different types of advisors representing specific skillsets may be required. For example, as observed in the sample statistics, boutique advisors may be preferred by bidders acquiring private target firms as their specialty lies in uncovering information asymmetry through business valuation, due diligence, and target searching in designated sectors. On the other hand, full-service advisors may be more appealing to acquirers of public targets, who require services beyond the traditional corporate advisory such as regulatory and shareholder approval or financial arrangement to acquire a large target. In case of Golubov et al. (2012), public and private deals are separately evaluated to prove top-tier advisors' disproportionate focus on and outperformance in public deals for their reputational capital. Hence, we perform the analysis separately for public and private deals as in model (2) and (3), respectively, to investigate in which deals boutique advisors create significant excess returns.

Our results show that the advisory quality in acquisitions of public targets is comparable between boutique and full-service advisors since the boutique dummy is statistically insignificant in public deals. However, boutique financial advisors significantly increase acquirer performance in private deals with an average of 1.4% increase in CARs. The implied shareholder wealth creation associated with boutique advisors in private deals is equivalent to \$121.4 million in excess of full-service deals<sup>31</sup>. This is an economically significant result, considering that the average size of private deals is much smaller than that of public deals.

## B. Sample Selection Bias and Causal Inference

We have estimated the impact of advisor choice on acquirer performance using the OLS cross-sectional regression framework. However, this methodology may produce precarious inferences. As earlier studies have shown, the analysis using the OLS estimator can suffer from

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<sup>30</sup> The excess return is computed as the average market value of bidders (\$12 billion) in our sample times excess CAR (0.8%) of the boutique coefficient in model (1).

<sup>31</sup> The mean dollar gain in private acquisitions is calculated, by multiplying the average market value of bidders who acquired private targets (\$8,671.23 million) by excess CAR (1.4%), the boutique coefficient in specification (3).

*sample selection bias* (Roy, 1951; Heckman, 1979). Explicitly, the *boutique* coefficient estimated in Table 2 could misrepresent the impact of boutique advisors on acquisition performance if the sample used in the analysis is non-random. Furthermore, the analysis may suffer from *causal inference* (Heckman, 1989), which refers to our inability to observe the deal outcome had a firm hired a full-service advisor instead. On an additional note, Rosenbaum and Rubin (1983) suggest that direct comparisons between two treatment groups may be misleading in nonrandomized experiments as the units distributed by one group systematically differ from the units conveyed by the other group.

We conduct additional analysis to test whether our inferences change after accounting for the aforementioned issues. Tucker (2010) recommends two methodologies that can be used to resolve sample selection bias. First, she suggests Heckman's Inverse Mills Ratio (IMR) for selection bias caused by unobservable factors, i.e., omitted variable bias. Second, she recommends Propensity Score Matching (PSM) for the treatment of selection bias that can be explained by observable factors. In both methods, we first estimate the advisor selection model and then, compare deal performance by generating mean difference in excess returns between boutique deals and full-service deals. Nevertheless, the two methodologies follow different procedures. The IMR process entails the estimation of  $\lambda$ , an omitted variable in the selection process, that is included in the second stage regression. In the PSM process, we match deals from the treatment group, i.e., boutique deals, with deals from the control group, i.e., full-service deals, based on the *propensity score* calculated during the first-stage regression. Then, we generate mean differences in returns between the treatment and control group to produce a performance comparison using only matched observations. Both techniques tackle issues arising from selection bias and can augment our analysis.

We incorporate both techniques to our analysis because sample selection can be driven by either observable or unobservable bias. First, we conduct the IMR analysis in order to ensure that our results are not driven by the omitted variable bias that can simultaneously affect both deal performance and the decision to hire a boutique advisor, as it has been suggested by previous studies (see e.g., Kale, Kini, and Ryan, 2003; Chang, Shekhar, Tam, and Yao; 2016). Subsequently, we run the PSM analysis to ensure that the results in the main regressions are not driven by group differences in acquirer and deal characteristics between boutique and full-service deals. A definitive, supportive outcome in both analyses will ensure that our results hold even after accounting for selection bias. We discuss the results on IMR and PSM in the next two sections of the paper.

### C. Heckman’s Two-Step Regression Analysis

To test whether there is an omitted variable bias, we perform Heckman’s two-step regression analysis following Golubov et al. (2012). The first stage model is estimated using a probit regression model where the dependent variable takes the value of one if the advisor is a boutique firm, and zero otherwise. In this selection stage, we use the same set of control variables as in our OLS estimation, excluding the *tender offers* variable which does not affect the advisor choice. Additionally, we include the *prior advisor* variable as an instrument, which indicates whether the bank has advised the acquirer in the past five years. This variable should influence advisor selection, but not the outcome of the announcement returns.

$$\begin{aligned} & Pr(\text{choice of boutique advisor}_{i,t} = 1) \\ & = \Phi[\alpha + \beta \text{prior advisor}_{i,t} + \gamma \text{control variables}_{i,t} + \varepsilon_{i,t}], \end{aligned} \quad (1)$$

The results of the probit regression analyses are reported in [Table 3](#). The prior advisor coefficient is significantly and positively correlated with the choice of boutique advisor across all model specifications. This implies that boutique financial advisors are more likely to be retained by acquirers for their future deal than are full-service banks. This is a very interesting discovery since this could mean that acquirers are in general more satisfied with the advisory quality of boutique banks, but it could also mean that financial advisors’ corporate governance is an important factor in advisor switching decision. As an example, studies note that full-service banks who provide both lending and corporate advisory service are prone to conflict of interest, for which acquirers often switch their financial advisors (Saunders and Srinivasan, 2001; Allen, Jagtiani, Peristiani, and Saunders, 2004).

The probability of selecting boutique advisors increases further with *stock offers* (i.e. all stock deals in the public subsample) and *diversifying deals*. On the contrary, *bidder size*, *book-to-market*, *relative size*, and *leverage* are negatively related to the choice of boutique advisors. These findings suggest that boutique investment banks are more likely to be hired when financing burden is lower and when transactions become more technical with greater valuation uncertainty. This is consistent with Song et al. (2013)’s transaction scale and advisor skill hypotheses. They argue that firms prefer full-service banks as the scale of a transaction becomes larger, but they are more likely to hire boutique advisors for cross-border or cross-industry deals, stock swap offers, and competing bids for these deals require greater fundamental skills.

In the second stage OLS regression, we include the *inverse mills ratio* (IMR) obtained from the probit model to examine whether the unobservable bias drives the deal outcome.

$$\text{bidder } CAR_{i,t} = \alpha + \gamma \text{ control variables}_{i,t} + \text{mills ratio}_{i,t} + \varepsilon_{i,t}, \quad (2)$$

If the omitted variable bias was affecting our results, the IMR coefficient should be statistically significant. However, IMR coefficients are insignificant across all model specifications, implying that there is no unobservable characteristics associated with both the choice of boutique advisors and bidder CARs. Thus, we reiterate the initial findings from the main OLS analysis about the positive contribution of boutique advisors to deal outcomes.

#### D. Propensity Score Matching (PSM)

Our summary statistics exhibit material differences on acquirer and deal characteristics between the boutique and full-service groups. In order to account for inter-group heterogeneity when comparing the performance, we repeat our main analysis after matching boutique deals with similar full-service deals. We follow the Propensity Score Matching method considering its wide scope and flexible inclusion of matching factors.

**Step 1** Obtain propensity scores (the probability of receiving treatment<sup>32</sup>) using a logit regression estimation with a set of  $x$  covariates (bidder and deal characteristics) that influence the choice of advisor.

$$p(x) = \text{prob}(d = 1|x) = E(d|x), \quad (3)$$

where  $p(x)$  is a propensity score,  $d$  (dependent variable) is the boutique dummy, and  $x$  is a set of control variables which determine the advisor choice.

**Step 2** Match deals based on a similar propensity score between the treated (boutique advisors) and control group (full-service advisors) using Nearest Neighbour Matching (one-to-one and 5 nearest) and Gaussian Kernel Matching to validate consistency of the results throughout different matching methods.

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<sup>32</sup> The probability of receiving treatment in our model is the probability of a boutique advisor to be selected by an acquirer.

**Step 3** Measure the average treatment effects by comparing the deal outcome between the treated,  $Y_i(1)$  and of the treated, had they not been treated,  $Y_i(0)$  as below<sup>33</sup>:

$$ATT = E(\Delta|d = 1) = E(Y(1)|d = 1) - E(Y(0)|d = 1), \quad (4)$$

Throughout the estimation, we apply common support restrictions which perform matching only based on the common range of propensity scores since a range outside the common support will not provide very good matches.

This treatment methodology allows unbiased use of the selected sample and estimation of the outcome at the population level. [Table 4](#) presents the PSM results. Panel A is a logit regression analysis on the choice of boutique over full-service banks as described in Step 1. Panel B summarizes the treatment effects on bidder CARs estimated by equation (4). The treatment group is boutique advisors. We compare their bidder client CARs with those of full-service banks and estimate statistical significance of their excess returns. Across all deals, bidders achieve up to 2% higher and statistically significant returns when hiring a boutique advisor. Similar to OLS analysis, however, bidder CARs do not differ between boutique and full-service advisors in public deals. Thus, the significant difference between boutique and full-service deals is mostly driven by private acquisitions in which boutique advisors improve shareholder returns by an average of 1.47%.

#### E. Long-term Abnormal Returns

Announcement returns, however, are merely an indication of investors' perception toward the deal based on expected synergies, and the actual performance can rather be measured by long-term event study methods. We perform two different types of long-term returns analysis: buy and hold abnormal return (BHAR) and calendar-time portfolio return (CTPR). For BHAR, we use the control firm approach following Barber and Lyon (1997) since it corrects for the new listing bias, portfolio rebalancing bias, and skewness bias. In this approach, returns of an acquiring firm are compounded over an estimation period and then adjusted by compounded returns of a matching benchmark portfolio formed over the same period. We use Fama-French's 25 equal-weighted size and book-to-market portfolios for benchmark returns<sup>34</sup>:

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<sup>33</sup>  $Y_i(1)$  is boutique CARs.  $Y_i(0)$  is counterfactual which is unobservable because it has not happened and should be estimated using the outcome of matched full-service banks (full-service CARs).

<sup>34</sup> The use of value-weighted portfolios produces qualitatively similar results.



$$BHAR_i = \prod_{t=1}^T [1 + R_{i,t}] - \prod_{t=1}^T [1 + R_{benchmark,t}], \quad (5)$$

where  $R_{i,t}$  is monthly returns of a sample firm  $i$  compounded over the 12- and 24-month period beginning from the announcement date.  $R_{benchmark,t}$  is returns of a corresponding benchmark portfolio which falls into the same size/book-to-market decile as the sample firm. Table 5 shows the regression results generated using 12- and 24-month BHARs as dependent variables. The boutique dummy is positively and significantly related to both BHARs, implying that firms hiring boutique advisors experience higher gains than those hiring full-service banks with excess returns of 4.0% within 12 months and 7.8% within 24 months. In subsequent analysis of public and private acquisitions, however, we observe findings similar to the analysis of announcement returns. Boutique advisors make no difference in long-term returns for public deals, but for private deals, they significantly increase acquirer returns by 7.4% within 12 months and 16.1% within 24 months.

Despite the advantages of the control firm approach in the calculation of BHAR, this method is still subject to a cross-sectional correlation issue. For this reason, we also undertake calendar time portfolio return (CTPR) approach, following Mitchell and Stafford (2000), to account for the cross-sectional correlation in the event-firm returns. For each month, our sample firms participating in the acquisition event enter the monthly portfolio and remain for 12 to 24 months. Portfolios are rebalanced with firms entering the event each month and those exiting the portfolio when they reach the end of the 12- or 24-month period. The monthly portfolio returns are regressed against Fama-French (1993) and Carhart (1997) factors as in the equation below:

$$\begin{aligned} R_{p(boutique),t} - R_{p(full-service),t} \\ = \alpha_p + b_p(R_{m,t} - R_{f,t}) + s_pSMB_t + h_pHML_t + u_pUMD_t + e_{p,t}. \end{aligned} \quad (6)$$

where  $R_{p(boutique),t} - R_{p(full-service),t}$  is a zero-investment portfolio estimated by the monthly boutique portfolio returns in excess of the full-service portfolio returns,  $R_{m,t} - R_{f,t}$  is the market excess return,  $SMB$  is the difference between small and large stock portfolios,  $HML$  is the difference between high and low book-to-market equity stock portfolios, and  $UMD$  is the difference between winners and losers stock portfolios. The intercept,  $\alpha_p$  estimates boutique

portfolio's monthly abnormal return. We conduct the analysis for both equal-weighted (EW) and value-weighted (VW) portfolios.

Table 6 presents the results from the time-series OLS regression analysis based on equation (6). For the 12-month portfolio, the estimation of all deals displays statistically significant and positive abnormal returns for the VW portfolio: 0.6% per month or 7.4% in annualised terms. In public deals, boutique portfolio significantly underperforms only in the EW portfolio by 0.5% per month or 6.2% in annualised terms. Consistent with the BHAR analysis, in private deals, boutique portfolio significantly outperforms in both EW and VW measures by 0.7% and 1.0%, respectively, per month or 8.7% and 12.7% in annualised terms, respectively.

For the 24-month portfolio, boutique deals significantly increase in value in both EW and VW measures with excess returns of 0.3% and 0.6% per month or 7.5% and 15.4% in biannual terms, respectively. During this period, there is no difference in public deal performance between boutique and full-service portfolios. In private acquisitions, EW measure indicates that boutique portfolio experiences excess returns of 0.6% per month or 15.4% in biannual terms. Overall, the long-term performance analysis indicates that the investment portfolio of boutique deals outperforms that of full-service deals in all deals and private acquisitions.

## **V. Additional Robustness Checks**

### **A. Information Asymmetry and Boutique Advisors' Contribution on Bidder CARs**

So far, we have shown that boutique advisors generate superior wealth gains for acquiring firms' shareholders in private deals, where financial advisors face more challenges in valuing a target firm than in public deals. Officer et al. (2009) emphasize that private deals have substantially greater information asymmetry than do public deals, thus, entail considerable valuation uncertainty. Capron and Shen (2007) argue that the lack of information on private targets increases search costs and the risk of misvaluation. However, information asymmetry in private deals can work in favour of acquirers with the potential to generate higher returns if they are already familiar with the target firm's industry. This is supported by acquirers' choice of private targets based on familiar industries or closer geographic proximities (Capron and Shen, 2007). Even private deals involving cross-industry acquisitions can provide value-increasing opportunities for acquirers if they hold bargaining power by having the expertise to tackle information asymmetry. The valuation of public targets, contrariwise, should be easier

with readily and publicly available information, possibly with multiple valuations already provided by several equity research analysts.

In our study, we argue that the outperformance of boutique advisors in private acquisitions is associated with their ability to mitigate the effects of information asymmetry by applying their sector-specific expertise in due-diligence and target selection. To assess this argument, we consider a partial segmentation of our sample to focus on deals with higher information asymmetry following Graham et al. (2017). We consider two types of deals. The first deal type is *cross-industry vs same-industry* deals, classified based on the acquirer and target firms' 3-digit SIC code. The second deal type is *without prior experience vs with prior experience*, where prior experience is determined by whether the acquirer has acquisition experience in the target's industry in the last three years before the deal announcement<sup>35</sup>. We expect the case of cross-industry deals and deals where the acquirer has no recent experience in the target's industry to increase information asymmetry, rendering the valuation of the target company more difficult. Our expectation is that boutique advisors will be more valuable to acquirers when information asymmetry is higher.

In order to test our hypothesis, we perform Propensity Score Matching analysis, where we match boutique deals with full-service deals based on similar client and deal characteristics as in Table 4. Panel A of Table 7 presents the advisor selection model for the sample of cross-industry and same-industry deals. In this model, we include the *industry peers* variable which measures the average use of boutique advisors by an acquirer's industry peers following Graham et al. (2017)<sup>36</sup>. This variable is significantly and positively associated with the choice of boutique advisor in cross-industry deals and indicates that the use of boutique advisor by the bidder's industry peers affects its decision to hire the same type of advisor. As for the acquisition performance, Panel B of Table 7 indicates that bidders hiring boutique advisors in cross-industry deals experience up to an average of 1.6% higher returns than those hiring full-service advisors. This corresponds to our hypothesis that boutique financial advisors offer a unique advantage to bidders dealing with higher information asymmetry. In contrast,

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<sup>35</sup> *Without prior experience* is a dummy equal to one if the acquirer does not have prior acquisition experience in the current target's industry. *With prior experience* is a dummy equal to one if the acquirer has prior acquisition experience in the current target's industry. Prior experience is estimated by the number of acquisitions that a bidder has undertaken in the current target's industry based on the 3-digit SIC code over the past 3 years prior to the announcement date; the bidder is considered without prior experience if the experience is zero, but the bidder is considered with prior experience if the experience is greater than zero.

<sup>36</sup> *Industry peers* is computed as the number of boutique advisors hired by a bidder's industry peers (based on the same 3-digit SIC code) in the year prior to the announcement date divided by the total number of advisors employed by those peers over the same period.

announcement returns are indifferent between boutique and full-service deals for the same-industry acquisitions.

The same conclusion is reiterated when considering acquirers with or without prior acquisition experience in the target industry. Panel A of [Table 8](#) shows that industry peers significantly influence the bidder's decision to hire a boutique advisor when it lacks prior acquisition experience in the target industry. The results on deal outcome in Panel B of [Table 8](#) are similar to those of cross-industry deals and confirm that bidders with lack of acquisition experience in the target sector gain greater returns when they select boutique advisors. The realized excess return is up to 1.6% on average. Overall, the results imply that bidders pursuing deals with higher information asymmetry have a strong incentive to hire boutique advisors.

## B. Sensitivity Analysis on CARs

Sibilkov and McConnell (2014) uses Fama-French value-weighted portfolios instead of market model to calculate CARs during the announcement period. To see whether the use of different benchmark model changes our results, we also employ the Fama-French model and Fama-French Momentum model to produce announcement returns. Our results remain the same with these variations.

## C. Matching Quality from Balance Diagnostics

The quality of matching can be confirmed by assessing the similarity of baseline covariates between treated and untreated subjects - when there are no differences between the treatment and control group after matching on the propensity score, the matching is considered well-balanced. Therefore, we check the distance in marginal distributions of the  $x$  covariates by comparing the standardised bias (SB) before and after matching as suggested by Rosenbaum and Rubin (1983). While empirical studies typically suggest that the bias be less than 3% or 5% after matching, our sample displays below 3% for all covariates. The mean bias for all groups are also less than 5% after matching. However, this does not uphold the success of matching. Hence, we employ additional approaches to evaluate the matching quality. The t-test is similar to SB and test whether there are significant mean differences between the treated and untreated group for each covariate. The matched advisor groups in our sample show no significant differences in covariates after matching. Additionally, an approach by Sianesi (2004) shows drastically low pseudo R-squared for the matched sample, indicating no systematic differences

in covariates between treatment and control group. Finally, the F-test on the joint significance of all covariates is rejected before matching, but it is not rejected after matching. Thus, we conclude that certain level of balancing between the treated and untreated group is achieved after matching. To visually represent the matching quality, we produce a box chart and density graph exhibited in [Figure 3](#).

## V. Conclusion

With the increasing demand in industry specialization for strategic mergers and diversified sources of funding, corporate clients have turned their eyes to highly specialized advisory boutiques for M&As. Boutique financial advisors who normally operate with a small group of employees retain expertise and experiences in particular industries and provide differentiated services and attentions from large banks. Corresponding to their increasing demand, this study provides the first empirical evidence on the value of boutique investment banks in M&As using the event study analyses on the acquiring firms' equity performance.

Based on the analysis of 3-day bidder announcement returns, we find that boutique advisors' growing reputation is attributable to the superior quality of their services with economically significant value creation for acquirer shareholders. The majority of excess returns are generated in private deals, cross-industry mergers, and deals involving an acquirer without prior acquisition experience in the target industry. These findings convey two important implications: financial intermediation is a crucial means of successfully accomplishing acquisitions for transactions involving high level of information asymmetry; and boutique advisors retain strongly qualified skillsets and expertise in such deals. This is further supported by the fact that boutique advisors are more likely to be chosen for complex deals such as diversifying mergers and deals involving stock offers. Moreover, boutique advisors are more likely to be retained by their clients for future acquisitions than full-service banks. Whether this is due to boutique banks' superior advisory quality or simply due to their corporate governance, which lowers the probability of advisor switching, it is an important indication of changing dynamics in the M&A advisory market<sup>37</sup>.

Our findings are robust with a series of subsequent tests we provide in this paper. We corroborate our results by controlling for two different types of sample selection bias,

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<sup>37</sup> Full-service banks which provide both lending and M&A advisory service are prone to conflict of interest which often leads to advisor switching decisions by acquirers (Saunders and Srinivasan, 2001; Allen, Jagtiani, Peristiani, and Saunders, 2004).

observable and unobservable, using propensity score matching as well as Heckman's IMR model. We discover that our results are driven by observable bias in which certain characteristics associated with the acquirer and the deal affect both the choice of advisor and deal outcome. After the treatment of the selection bias, the excess returns associated with boutique advisors become greater. However, unobservable bias does not change our results. We also consider the long-term effect of boutique advisors on acquirer shareholder wealth using BHAR and CTPR. Both estimations imply that investors buying stocks of an acquirer promoted by boutique investment banks experience greater wealth gains in the long-run than those investing in firms advised by full-service banks.

The study on boutique financial advisors has far greater implications than simply proving their advisory quality. This study acknowledges the interplay between post-crisis financial regulation against too-big-to-fail financial conglomerates and investors' awareness of valuable intermediaries behind the change in corporate advisory market share. This change is key to healthier competition among financial advisors and higher value creation for corporate takeovers. Bowers and Miller (1990) argue that highly reputable bankers identify better deals and create value for their clients. Our findings on the quality of boutique advisors reflect the conventional role of financial advisor highlighted by Bowers and Miller and add diverse insights to the financial intermediary literature.

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## Appendix A Variable Definition

Variable Name	Description
Bidder size	Acquirers' market value of equity (in US \$ million) 4 weeks prior to the acquisition announcement (CRSP).
Book-to-market	Acquirers' book value of equity at the fiscal year end prior to the announcement (COMPUSTAT) divided by their market value of equity 4 weeks prior to the announcement (CRSP).
Run-up	Acquirers' value weighted market-adjusted excess return over the 200-day period (-205, -6) prior to the acquisition announcement (CRSP).
Volatility	Standard deviation of acquirers' daily stock returns (market-adjusted) between 205 and 6 days prior to the announcement date CRSP.
Leverage	Acquirers' total debt divided by the book value of total assets at the fiscal year end prior to the announcement (COMPUSTAT).
Liquidity	Acquirers' cash divided by current liabilities at the fiscal year end prior to the announcement (COMPUSTAT).
Deal value	Transaction value (in US \$ million) from SDC.
Relative size	Deal value (SDC) divided by the acquirer's market value of equity 4 weeks prior to the announcement from CRSP.
Tender offers	A dummy which takes the value of one when the acquisition technique includes tender offer (SDC).
Public deals	A dummy which takes the value of one when the target firm's public status is public (SDC).
Private deals	A dummy which takes the value of one when the target firm's public status is private (SDC).
Diversifying deals	A dummy which takes the value of one if the first 2-digits of the bidder's SIC code do not match those of the target's SIC code, and zero otherwise.
Hostile deals	A dummy which takes the value of one when the acquisition method is hostile (SDC).
All cash	A dummy which takes the value of one if 100% of the transaction was paid by cash (SDC).
All stock	A dummy which takes the value of one if 100% of the transaction was paid by stock (SDC).
Mixed payments	A dummy which takes the value of one if the transaction was paid by both cash and stock (SDC).
Premium	Deal premium 4 weeks prior to the acquisition announcement in percentage (SDC), which is winsorized between 0 and 2 as in Officer (2003).
CAR (-1, +1)	Acquirers' value-weighted 3-day cumulative abnormal returns around the announcement date. The CAR is generated using the bidder's stock return minus the benchmark portfolio return over the event window. The benchmark is estimated using market model over the period beginning -295 days and ending -45 days before the announcement.
Prior advisor	A dummy which takes the value of one if an advisor has advised the current bidder for an acquisition in the past five years.

Figure 1 Bidder Advisor Market Share by the Number of Deals: Boutique vs. Non-boutique

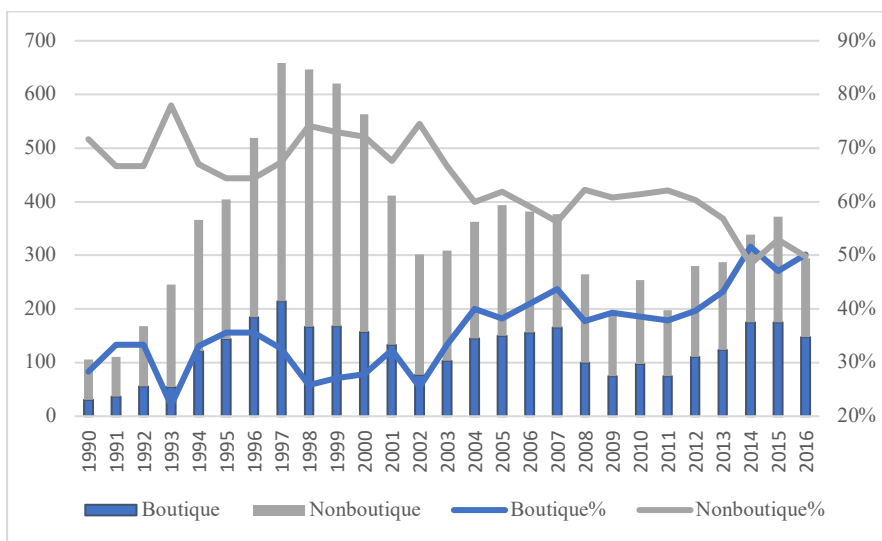


Figure 2 Bidder Advisor Market Share by Deal Value (in Million USD): Boutique vs. Non-boutique

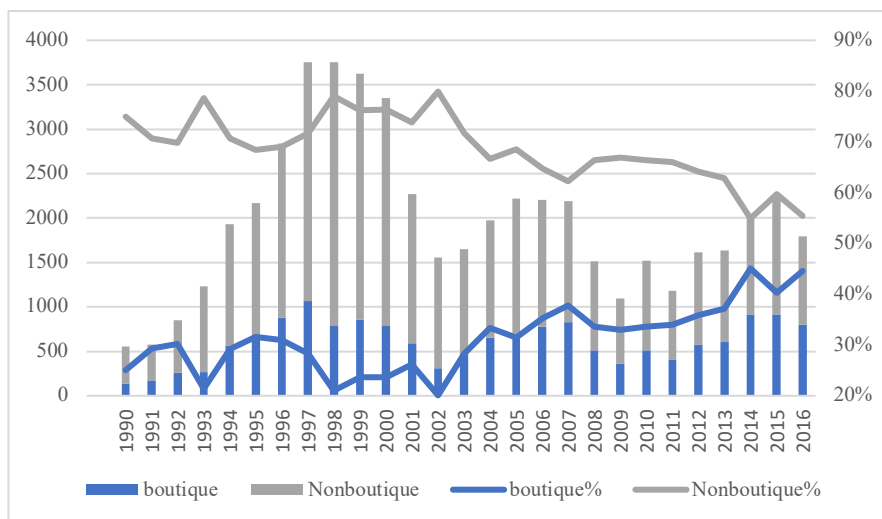


Figure 3 Propensity Score Matching Quality

The following figures display similarity of matched deals between boutique and full-service based on PSM. Both box graph and line chart show that the characteristics of covariates (firm and deal characteristics) in the two groups look very similar after matching.

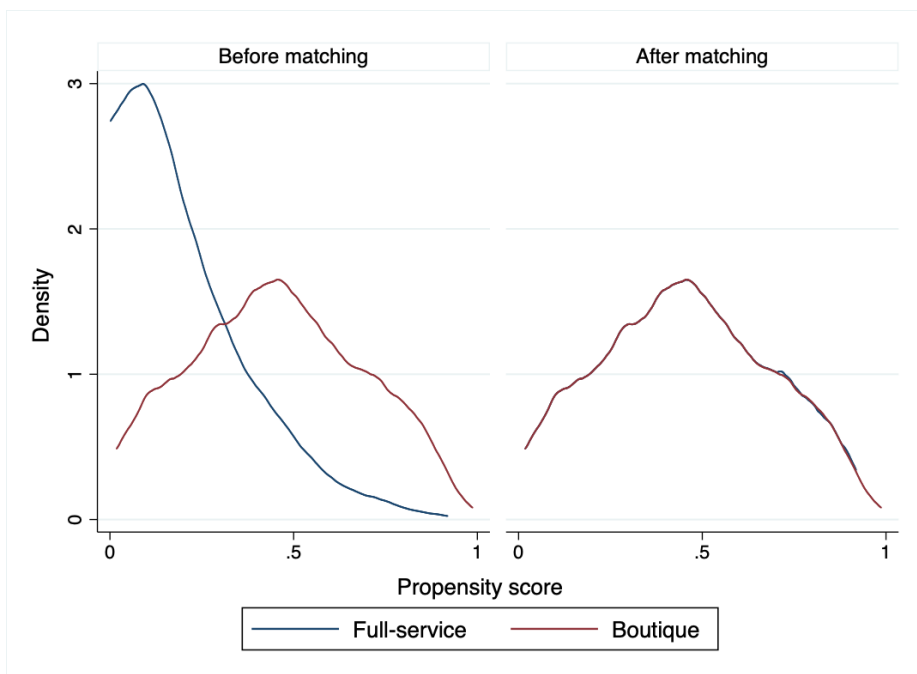
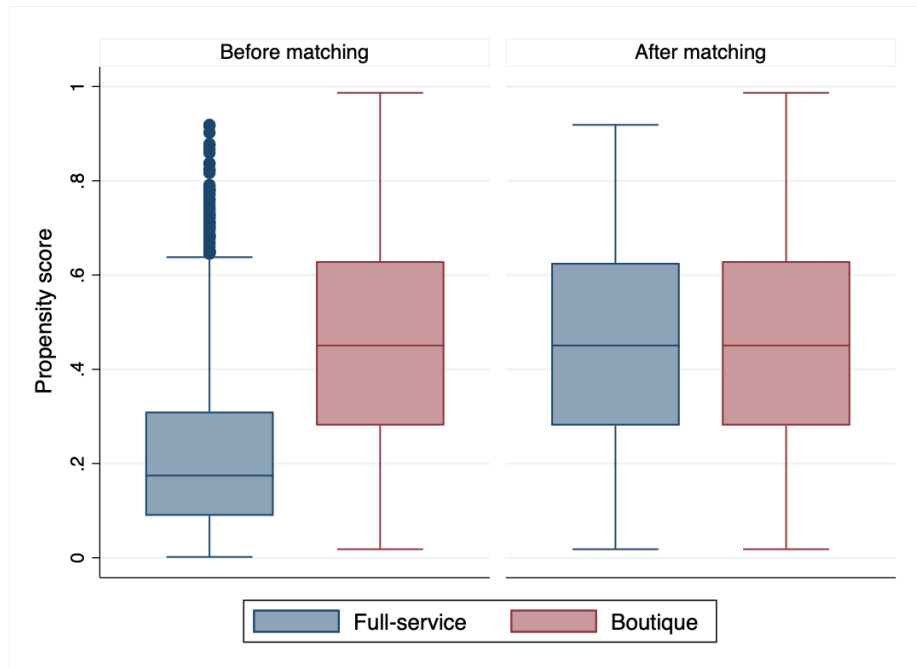


Table 1 Descriptive Summary Statistics

This table presents summary statistics for a sample of U.S. Mergers & Acquisitions announced between January 1, 2000 and December 31, 2016, which involve a financial advisor on the acquirer side. The table contains the number of observations denoted as N, the mean, and the median for (1) all sample as well as (2) boutique and (3) full-service subsamples. Definition of the selected variables are available in [Appendix A](#). *Bidder size* and *deal value* are in US \$ million and are adjusted for inflation. The last column presents the results from mean difference tests between (2) boutique subsample and (3) full-service subsample for each variable. The significance of mean difference is estimated using t-tests. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively. M&A transaction data are obtained from the Thomson Reuters SDC Mergers and Acquisitions Database. Acquiring firms' stock price and accounting data are acquired from CRSP and Compustat, respectively.

	All Sample (1)			Boutique (2)			Full-service (3)			Mean Difference
	N	Mean	Median	N	Mean	Median	N	Mean	Median	(2) - (3)
Bidder Size	4991	12004.420	1478.700	1844	6480.808	556.808	3147	15241.007	2701.047	-8760.199***
Book to Market	4431	0.495	0.425	1601	0.551	0.501	2830	0.463	0.386	0.087***
Run-up	4778	-0.014	-0.000	1792	-0.006	-0.003	2986	-0.019	0.002	0.013
Volatility	4778	0.027	0.021	1792	0.027	0.020	2986	0.026	0.021	0.001
Leverage	4445	0.201	0.162	1602	0.157	0.109	2843	0.226	0.197	-0.069***
Liquidity	3399	1.051	0.498	1014	1.274	0.599	2385	0.956	0.436	0.319***
Deal Value	5010	1609.302	255.130	1848	724.484	95.128	3162	2126.425	430.395	-1401.941***
Relative Size	4991	0.436	0.180	1844	0.407	0.179	3147	0.452	0.181	-0.045
Public Deals	5010	0.399	-	1848	0.378	-	3162	0.411	-	-0.034*
Private Deals	5010	0.601	-	1848	0.622	-	3162	0.589	-	0.034*
Diversifying Deals	5010	0.339	-	1848	0.317	-	3162	0.352	-	-0.035*
Hostile Deals	5010	0.016	-	1848	0.011	-	3162	0.020	-	-0.009*
Tender Offers	5010	0.056	-	1848	0.032	-	3162	0.071	-	-0.039***
All Cash	5010	0.314	-	1848	0.260	-	3162	0.346	-	-0.086***
All Stock	5010	0.182	-	1848	0.207	-	3162	0.168	-	0.040***
Mixed Payments	5010	0.503	-	1848	0.532	-	3162	0.486	-	0.046**
Premium	1847	49.127	38.312	615	50.807	39.651	1232	48.289	37.636	2.519
CAR	4936	0.005	0.001	1828	0.008	0.002	3108	0.004	0.001	0.004

Table 2 Multinomial Cross-sectional OLS Regression Analysis: Bidder CARs

This table presents results from the cross-sectional OLS regression analysis on the relation between the use of boutique financial advisor and acquiring firms' announcement returns estimated by cumulative abnormal returns (CARs). The sample of this analysis includes U.S. domestic M&A transactions announced over the period 2000 to 2016, involving public bidders acquiring either public or private targets. The dependent variable is 3-day bidder CAR (-1, +1) surrounding the announcement date. *Boutique* is a dummy equal to one if the deal is advised by a boutique investment bank, and zero if it involves a full-service bank. *Bidder size* is the log of bidder market value four weeks prior to the announcement. Control variables are selected based on the firm and deal characteristics and are defined in Appendix A. Specification (1), (2), and (3) denote acquisition of all, public, and private targets, respectively. Regressions are controlled for year fixed effects and industry fixed effects. All control variables are winsorized at 1%, and standard errors are adjusted for heteroscedasticity and bidder clustering. *P*-values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

	All (1)	Public (2)	Private (3)
Boutique	0.008** (0.048)	-0.002 (0.825)	0.014*** (0.003)
Bidder size	-0.003* (0.075)	-0.006*** (0.007)	0.000 (0.970)
Book to market	-0.016** (0.021)	-0.013 (0.359)	-0.016** (0.039)
Run-up	0.020* (0.051)	0.024 (0.194)	0.021* (0.086)
Volatility	0.041 (0.850)	0.017 (0.966)	0.014 (0.956)
Public Deals	-0.028*** (0.000)		
All stock deals	-0.016** (0.027)	-0.026*** (0.004)	0.003 (0.801)
Relative size	0.003* (0.094)	-0.010*** (0.000)	0.011*** (0.000)
Diversifying deals	-0.007** (0.044)	-0.006 (0.304)	-0.010** (0.020)
Tender offers	0.010* (0.086)	-0.002 (0.702)	-0.153*** (0.000)
Hostile deals	0.011 (0.239)	0.020* (0.058)	0.012 (0.197)
Leverage	0.029*** (0.006)	0.036* (0.069)	0.023* (0.056)
Liquidity	-0.001 (0.546)	-0.003 (0.198)	-0.001 (0.451)
Constant	0.046** (0.017)	0.015 (0.660)	0.057** (0.019)
Observations	2,938	998	1,940
Adjusted R-squared	0.054	0.089	0.037
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Table 3 Heckman's Two-Step (IMR) Analysis: Advisor Selection and Bidder CAR

This table presents Heckman's two-step analysis on advisor selection and ensuing equity performance of acquiring firm during the announcement period. The analysis contains a sample of M&A transactions announced over the period 2000 to 2016. While all bidders are public firms, the sample is specified into all, public, and private deals depending on the target firm's public status. For each specification, results of two regression models are reported: (1) *selection* refers to the choice of advisor estimated using probit regression, where the dependent variable is a dummy equal to one if the deal is advised by a boutique investment bank, and zero if it involves a full-service bank; (2) *outcome* indicates acquirer performance estimated by cross-sectional OLS regression analysis, where the dependent variable is 3-day bidder CAR (-1, +1) surrounding the announcement date. In the selection stage, we include an instrumental variable, *prior advisor* which is equal to one if the financial advisor has advised the current acquirer in the past 5 years, and zero otherwise. *Inverse mills ratio* (IMR) generated in the selection stage is added to the outcome stage regression to determine whether there is omitted variable (unobservable) bias in the model. The definition of other control variables is available in [Appendix A](#). Regressions are controlled for year fixed effects and industry fixed effects. All control variables are winsorized at 1%. *P*-values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

	All		Public		Private	
	Selection	Outcome	Selection	Outcome	Selection	Outcome
Prior advisor	0.226*** (0.008)		0.296* (0.066)		0.195* (0.058)	
Bidder size	-0.456*** (0.000)	-0.001 (0.866)	-0.405*** (0.000)	-0.012 (0.208)	-0.493*** (0.000)	-0.001 (0.885)
Book to market	-0.270*** (0.003)	-0.016** (0.018)	-0.426** (0.020)	-0.019 (0.171)	-0.215** (0.048)	-0.017** (0.026)
Run-up	0.005 (0.962)	0.020*** (0.003)	-0.515** (0.025)	0.016 (0.347)	0.182 (0.172)	0.021** (0.016)
Volatility	-1.113 (0.657)	0.050 (0.746)	2.268 (0.621)	0.044 (0.866)	-2.764 (0.365)	0.010 (0.958)
Public Deals	0.010 (0.877)	-0.028*** (0.000)				
All stock deals	0.104 (0.252)	-0.017*** (0.003)	0.285** (0.035)	-0.022** (0.030)	0.010 (0.940)	0.003 (0.697)
Relative size	-0.372*** (0.000)	0.004 (0.473)	-0.368*** (0.000)	-0.016* (0.085)	-0.386*** (0.000)	0.010 (0.162)
Diversifying deals	0.101* (0.085)	-0.008** (0.046)	0.213* (0.062)	-0.003 (0.717)	0.069 (0.324)	-0.010** (0.023)
Tender offers		0.010 (0.169)		-0.002 (0.767)		-0.157* (0.074)
Hostile deals	0.216 (0.389)	0.011 (0.386)	0.385 (0.134)	0.026 (0.100)		
Leverage	-0.637*** (0.000)	0.030** (0.022)	-0.506 (0.121)	0.029 (0.173)	-0.680*** (0.001)	0.020 (0.225)
Liquidity	0.015 (0.464)	-0.001 (0.342)	0.041 (0.339)	-0.003 (0.283)	0.018 (0.452)	-0.002 (0.271)
Inverse Mills Ratio		-0.007 (0.710)		0.020 (0.514)		-0.002 (0.926)
Constant	2.310*** (0.000)	0.049** (0.036)	2.118*** (0.000)	0.030 (0.433)	2.528*** (0.000)	0.073** (0.016)
Observations	2,938	2,938	998	998	1,939	1,939
Pseudo R2 (Adj. R2)	0.201	0.053	0.198	0.089	0.200	0.034
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES



Table 4 Propensity Score Matching (PSM): Boutique vs. Full-service

This table exhibits results from the Propensity Score Matching on boutique vs. full-service deals: boutique deals are matched with full-service deals based on similar propensity scores calculated using the characteristics of the acquirer and the deal in logit regression analysis as in Panel A; then the excess CAR that boutique investment banks generate in M&As is estimated based only on these matched deals by computing mean difference in bidder CARs between boutique deals and full-service deals using the Average Treatment Effect on the Treated (ATT) as in equation (4). The excess returns are presented in Panel B. This analysis contains a sample of U.S. domestic M&As announced over the period 2000 to 2016. While all bidders are public firms, the sample is specified into all, public, and private deals depending on the target firm's public status. The dependent variable in Panel A is a dummy equal to one if the deal is advised by a boutique investment bank, and zero if it involves a full-service bank. The definition of control variables is available in Appendix A. All control variables are winsorized at 1%. Regressions are controlled for year fixed effects and industry fixed effects. The excess returns in Panel B are reported based on different matching methods: one-to-one Nearest Neighbour matching, five Nearest Neighbour matching, and Gaussian Kernel matching. *P*-values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Logit regression: Choice of boutique advisor			
	All	Public	Private
Bidder size	-0.450*** (0.000)	-0.395*** (0.000)	-0.489*** (0.000)
Book to market	-0.253*** (0.006)	-0.405** (0.026)	-0.201* (0.064)
Run-up	0.010 (0.931)	-0.512** (0.025)	0.187 (0.161)
Volatility	-1.019 (0.684)	2.257 (0.622)	-2.661 (0.383)
Public Deals	0.010 (0.883)		
All stock deals	0.102 (0.260)	0.286** (0.034)	0.008 (0.953)
Relative size	-0.376*** (0.000)	-0.371*** (0.000)	-0.390*** (0.000)
Diversifying deals	0.098* (0.094)	0.200* (0.078)	0.069 (0.322)
Hostile deals	0.219 (0.381)	0.390 (0.127)	
Leverage	-0.611*** (0.000)	-0.503 (0.123)	-0.651*** (0.001)
Liquidity	0.013 (0.516)	0.040 (0.357)	0.016 (0.496)
Constant	2.240*** (0.000)	2.020*** (0.000)	2.470*** (0.000)
Observations	2,938	998	1,939
Pseudo R2	0.199	0.194	0.198
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Panel B. CARs of acquirer advised by boutique investment banks			
	One-to-one	5 Nearest	Gaussian Kernel
All	0.020*** (0.003)	0.013*** (0.008)	0.014** (0.029)
Public	0.005 (0.734)	-0.006 (0.610)	-0.003 (0.742)
Private	0.014** (0.046)	0.017** (0.019)	0.013** (0.029)

Table 5 Long-term Abnormal Returns: Bidder BHARs

This table presents results from cross-sectional OLS regression analysis for a sample of acquisitions announced in the U.S. over the period 2000 to 2016. While all bidders are public firms, the sample is specified into all, public, and private deals depending on the target firm's public status. The dependent variable is acquiring firms' buy-and-hold abnormal returns (BHARs) estimated over the 12- to 24-month period beginning the announcement date. BHARs are returns compounded over the estimation period and then adjusted by benchmark returns obtained from Fama-French's 25 equal-weighted size and book-to-market portfolios. The calculation of BHAR is as follows:

$$BHAR_i = \prod_{t=1}^T [1 + R_{i,t}] - \prod_{t=1}^T [1 + R_{benchmark,t}],$$

where  $R_{i,t}$  is compounded returns of an acquiring firm  $i$  over the estimation period, and  $R_{benchmark,t}$  is compounded returns of a corresponding benchmark portfolio which falls into the same size/book-to-market decile as the acquiring firm. The definition of control variables is available in [Appendix A](#). Regressions are controlled for year fixed effects and industry fixed effects. All control variables are winsorized at 1%, and standard errors are adjusted for heteroscedasticity and bidder clustering.  $P$ -values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

	All Deals		Public Deals		Private Deals	
	12 Month	24 Month	12 Month	24 Month	12 Month	24 Month
Boutique	0.040*	0.078**	-0.047	-0.098	0.074***	0.161***
	(0.081)	(0.038)	(0.266)	(0.140)	(0.007)	(0.000)
Run-up	0.053	0.097	-0.029	0.108	0.087	0.089
	(0.279)	(0.243)	(0.740)	(0.497)	(0.142)	(0.358)
Public Deals	-0.012	0.013				
	(0.600)	(0.720)				
All stock deals	-0.075**	-0.116**	-0.092**	-0.130*	-0.051	-0.101
	(0.022)	(0.031)	(0.030)	(0.070)	(0.306)	(0.215)
Relative size	0.024***	0.029**	0.001	0.016	0.037***	0.039**
	(0.002)	(0.020)	(0.905)	(0.376)	(0.000)	(0.021)
Diversifying deals	-0.035*	-0.040	-0.016	-0.026	-0.040	-0.050
	(0.084)	(0.210)	(0.614)	(0.615)	(0.123)	(0.224)
Tender offers	0.007	-0.033	-0.031	-0.084		
	(0.849)	(0.578)	(0.405)	(0.175)		
Hostile deals	0.027	-0.066	0.069	-0.025	-0.014	-0.160
	(0.718)	(0.533)	(0.380)	(0.838)	(0.808)	(0.157)
Leverage	0.176***	0.254**	0.025	0.055	0.277***	0.425***
	(0.005)	(0.021)	(0.794)	(0.762)	(0.001)	(0.002)
Liquidity	-0.036***	-0.036***	-0.027*	-0.034	-0.039***	-0.040***
	(0.000)	(0.002)	(0.065)	(0.190)	(0.000)	(0.003)
Constant	0.002	0.098	0.085	0.279**	-0.047	0.014
	(0.966)	(0.254)	(0.326)	(0.036)	(0.503)	(0.907)
Observations	2,157	1,608	765	588	1,392	1,020
Adjusted R-squared	0.041	0.034	0.007	0.003	0.058	0.057
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 6 Long-term Abnormal Returns: Bidder CTPRs

This table presents results from the time-series regression analysis of calendar-time portfolio returns for a sample of acquiring firms announced M&A in the U.S. during the period 2000 to 2016. Portfolios are rebalanced by adding firms entering the event in the beginning of each month and excluding firms exiting the portfolio at the end of their 12- to 24-month period. Then the monthly portfolio returns are regressed against Fama-French (1993) and Carhart (1997) factors as in the equation below:

$$R_{p(boutique),t} - R_{p(full-service),t} = \alpha_p + b_p(R_{m,t} - R_{f,t}) + s_pSMB_t + h_pHML_t + u_pUMD_t + e_{p,t},$$

where  $R_{p(boutique),t} - R_{p(full-service),t}$  is a zero-investment portfolio estimated by the monthly boutique portfolio returns in excess of the full-service portfolio returns,  $R_{m,t} - R_{f,t}$  is the market excess return,  $SMB$  is the difference between small and large stock portfolios,  $HML$  is the difference between high and low book-to-market equity stock portfolios, and  $UMD$  is the difference between winners and losers stock portfolios. The intercept,  $\alpha_p$  estimates boutique portfolio's monthly abnormal return. Panel A, Panel B, and Panel C exhibit all deals, public deals, and private deals, respectively. We report both equal-weighted (EW) and value-weighted (VW) portfolio returns.  $P$ -values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

	12 Months		24 Months	
	EW	VW	EW	VW
<b>Panel A. All Deals</b>				
Alpha	0.003 (0.130)	0.006** (0.048)	0.003* (0.064)	0.006** (0.042)
RMRF	-0.183*** (0.000)	-0.232*** (0.008)	-0.119*** (0.004)	-0.159** (0.043)
SMB	0.075 (0.537)	0.059 (0.695)	-0.022 (0.844)	-0.228* (0.056)
HML	0.037 (0.570)	-0.056 (0.676)	0.098 (0.144)	-0.094 (0.438)
UMD	0.067 (0.182)	-0.315*** (0.000)	0.003 (0.956)	-0.187** (0.044)
Calendar Month	215	215	226	226
Adjusted R-squared	0.118	0.104	0.059	0.087
<b>Panel B. Public Deals</b>				
Alpha	-0.005** (0.019)	-0.002 (0.630)	-0.003 (0.231)	0.004 (0.250)
RMRF	-0.301*** (0.000)	-0.057 (0.591)	-0.301*** (0.000)	-0.173* (0.092)
SMB	0.048 (0.705)	0.187 (0.257)	0.004 (0.975)	-0.188 (0.203)
HML	0.400*** (0.000)	0.393** (0.041)	0.231** (0.029)	0.019 (0.911)
UMD	-0.061 (0.453)	-0.389*** (0.000)	-0.126 (0.185)	-0.242** (0.038)
Calendar Month	214	214	225	225
Adjusted R-squared	0.207	0.174	0.157	0.067
<b>Panel C. Private Deals</b>				
Alpha	0.007*** (0.006)	0.010*** (0.008)	0.006*** (0.010)	0.005 (0.178)
RMRF	-0.089 (0.213)	-0.199 (0.106)	-0.014 (0.843)	0.007 (0.946)
SMB	-0.011 (0.949)	0.407* (0.086)	-0.135 (0.465)	0.187 (0.340)
HML	-0.134 (0.151)	-0.483** (0.011)	0.073 (0.487)	-0.349** (0.020)
UMD	0.127* (0.050)	-0.057 (0.616)	0.093 (0.294)	0.000 (0.998)
Calendar Month	214	214	226	226
Adjusted R-squared	0.062	0.138	0.025	0.059

Table 7 Propensity Score Matching (PSM): Cross-industry M&As

This table exhibits results from the Propensity Score Matching on boutique vs. full-service deals. The analysis contains a sample of acquisitions announced in the U.S. over the period 2000 to 2016. The bidder is public while the target includes both public and private firms. **Panel A** reports logit regression analysis where the dependent variable is the choice between boutique and full-service advisor (a dummy equal to one if the deal is advised by a boutique investment bank, and zero if it involves a full-service bank). *Cross-industry* is a dummy equal to one if the acquirer operates in a different industry from the target based on the first 3-digit SIC code. *Same-industry* is a dummy equal to one if the acquirer operates in the same industry as the target based on the first 3-digit SIC code. *Industry peers* is an instrumental variable which indicates the average use of boutique advisors by the acquiring firm's industry peers; it is computed as the number of boutique advisors hired by a bidder's industry peers (based on the same 3-digit SIC code) over the past one year prior to the announcement date divided by the total number of advisors employed by the same group of peers over the same period. The definition of other control variables is available in **Appendix A**. **Panel B** displays mean difference in bidder CARs between boutique and full-service deals measured by the Average Treatment Effect on the Treated (ATT) as in equation (4). The excess returns boutique advisors generate are reported based on different matching methods: one-to-one Nearest Neighbour matching, five Nearest Neighbour matching, and Gaussian Kernel matching. Regressions are controlled for year fixed effects and industry fixed effects. All control variables are winsorized at 1%. P-values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Logit estimation results: Choice of boutique advisor			
	Cross-industry	Same-industry	
Bidder size	-0.472*** (0.000)	-0.451*** (0.000)	
Book to market	-0.402*** (0.003)	-0.211 (0.127)	
Run-up	0.111 (0.558)	-0.076 (0.621)	
Volatility	-1.086 (0.787)	-1.632 (0.663)	
Public Deals	0.013 (0.893)	0.009 (0.932)	
All stock deals	0.095 (0.494)	0.124 (0.335)	
Relative size	-0.361*** (0.000)	-0.410*** (0.000)	
Hostile deals	-0.184 (0.625)	0.370 (0.149)	
Leverage	-0.528** (0.044)	-0.412 (0.138)	
Liquidity	0.005 (0.891)	0.029 (0.337)	
Industry peers	0.517*** (0.001)	0.094 (0.641)	
Constant	2.602*** (0.000)	2.089*** (0.000)	
Observations	1,366	1,508	
Pseudo R2	0.207	0.216	
Industry FE	YES	YES	
Year FE	YES	YES	
Panel B. CARs of acquirer advised by boutique investment banks			
	One-to-one	5 Nearest	Gaussian Kernel
Cross-industry	0.010 (0.347)	0.015* (0.078)	0.016** (0.039)
Same-industry	0.014 (0.181)	0.012 (0.198)	0.013 (0.137)

Table 8 Propensity Score Matching (PSM): without Prior Experience

This table exhibits results from the Propensity Score Matching on boutique vs. full-service deals. The analysis contains a sample of acquisitions announced in the U.S. over the period 2000 to 2016. The bidder is public while the target includes both public and private firms. **Panel A** reports logit regression analysis where the dependent variable is the choice between boutique and full-service advisor (a dummy equal to one if the deal is advised by a boutique investment bank, and zero if it involves a full-service bank). *Without prior experience* is a dummy equal to one if the acquirer does not have prior acquisition experience in the current target's industry. *With prior experience* is a dummy equal to one if the acquirer has prior acquisition experience in the current target's industry. Prior experience is estimated by the number of acquisitions that a bidder has undertaken in the current target's industry based on the 3-digit SIC code over the past 3 years prior to the announcement date; the bidder is considered without prior experience if the experience is zero, but the bidder is considered with prior experience if the experience is greater than zero. *Industry peers* is an instrumental variable which indicates the average use of boutique advisors by industry peers; it is computed as the number of boutique advisors hired by a bidder's industry peers (based on the same 3-digit SIC code) over the past one year prior to the announcement date divided by the total number of advisors employed by the same group of peers over the same period. The definition of other control variables is available in **Appendix A**. **Panel B** displays mean difference in bidder CARs between boutique and full-service deals measured by the Average Treatment Effect on the Treated (ATT) as in equation (4). The excess returns boutique advisors generate are reported based on different matching methods: one-to-one Nearest Neighbour matching, five Nearest Neighbour matching, and Gaussian Kernel matching. Regressions are controlled for year fixed effects and industry fixed effects. All control variables are winsorized at 1%. P-values are reported in parentheses below the coefficients. \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A. Logit estimation results: Choice of boutique advisor			
	Without Prior Experience	With Prior Experience	
Bidder size	-0.437*** (0.000)	-0.553*** (0.000)	
Book to market	-0.255** (0.014)	-0.460 (0.121)	
Run-up	0.006 (0.960)	-0.021 (0.956)	
Volatility	-0.894 (0.753)	7.455 (0.505)	
Public Deals	-0.045 (0.540)	0.246 (0.296)	
All stock deals	0.075 (0.437)	0.243 (0.421)	
Relative size	-0.366*** (0.000)	-0.475*** (0.000)	
Diversifying deals	0.152** (0.018)	-0.570** (0.013)	
Hostile deals	0.142 (0.550)	0.378 (0.427)	
Leverage	-0.597*** (0.003)	-0.141 (0.811)	
Liquidity	0.027 (0.249)	-0.237** (0.033)	
Industry peers	0.347** (0.011)	-0.122 (0.788)	
Constant	2.205*** (0.000)	2.473** (0.026)	
Observations	2,406	455	
Pseudo R2	0.197	0.300	
Industry FE	YES	YES	
Year FE	YES	YES	
Panel B. CARs of acquirer advised by boutique investment banks			
	One-to-one	5 Nearest	Gaussian Kernel
Without Prior Experience	0.012 (0.162)	0.013** (0.037)	0.016*** (0.006)
With Prior Experience	0.007 (0.691)	-0.003 (0.869)	0.003 (0.844)