Accounting Firms in the European M&A Advisory Market

Building on the knowledge-based view of the resource-based theory, we propose that accounting firms leverage the industry expertise acquired from the audits of the targets' industries to produce fairer target valuations on merger and acquisitions (M&As). The accounting expertise competitive advantage explains why bidders choose accounting firms, rather than investment banks, to advise on transactions where the likelihood of overpaying for a target is high. We document that for such deals, acquirer announcement returns are higher and offer premia are lower if the bidders are advised by accounting firms that are audit specialists in the targets' industries. Our results explain why accounting firms are listed among top ten M&A financial advisors in the European Thomson Reuters and Mergermarket league tables.

Keywords: accounting firms, financial advisors, hard-to-value targets, mergers and acquisitions, knowledge-based view, resource-based theory

Introduction

"Mergers and acquisitions (M&As) have been an important source of non-organic growth for more than 100 years", Bauer *et al.* (2020, p. 896). However, Cartwright and Cooper (1990, p.65) highlight that "between 50-80 percent of all mergers are considered financially unsuccessful". Overpayment for a target is among the most commonly cited reasons for M&As' failure to deliver value to bidder shareholders (Gu and Lev, 2011; Mauboussin, 2010).

Building on the knowledge-based view of the resource-based (KBVRB) theory (Kogut and Zander, 1992; Peteraf, 1993; Grant 1996; Wan *et al.*, 2011), we propose that accounting firm advisors to bidders lever on their specialist audit knowledge, their unique competitive resource, to produce fairer target valuation reducing the overpayment risk. The KBVRB theory views knowledge (its acquisition, integration and deployment) as a strategic resource a firm can use to create a sustainable competitive advantage. Auditing of private and publicly listed companies is accounting firms' specialty. Through the audit practice, accounting firms develop a unique resource – accounting expertise about companies of different sizes and from a wide range of industries that is required to perform high-quality audits (such as their understanding of accounting accruals and intangible assets measurement and valuation). This industry expertise, which is not client-specific, thus not confidential, can be shared across functions within accounting firms. In our context, the expertise can be deployed by the M&A advisory function of accounting firms to facilitate target appraisal, reducing the risk of overpayment.

The goal of this study is to establish evidence of accounting firms' competitive advantage in a niche segment of the M&A advisory market (with hard-to-value targets) and link this competitive advantage to their knowledge resource, namely the industry expertise accumulated from their audit practice. We look at the acquirers' announcement-period stock return, which captures the benefit an acquisition is expected to bring to the acquirer's shareholders (Cai *et al*., 2016; Halpern, 1983; Jensen and Ruback, 1983; Jarrell *et al*., 1988; Betton *et al.,* 2008). The tests are conducted using M&As from

15 European Union (EU) countries as regulatory constraints have significantly limited accounting firms' M&A activity in the United States (Harris, 2014).[1]

We find that bidders advised by investment banks experience lower price reactions when they attempt to acquire difficult-to-value targets, i.e., for deals where the risk of overpayment is high. However, when such deals are advised by accounting firms, price reactions are, on average, higher. Consistent with the KBVRB theory, price reactions are higher when the accounting firm has audit-specialist knowledge about the industries of difficult-to-value targets. The results are robust to endogeneity concerns and alternative measures of overpayment risk and of merger outcomes such as the offer premium.

The paper's theoretical contribution is to advance the knowledge-based perspective of organizations (Bontis and Choo, 2002) particularly, knowledge transmission and deployment (Vince et al., 2002; Eisenhardt and Santos, 2006), and how firms can achieve competitive advantage through the development of idiosyncratic capabilities (Eisenhardt and Santos, 2006; Grant, 1996; Spender, 1996). Building on the KBVRB theory, the study documents how accounting knowledge accumulated through audit work can be deployed to enhance the quality of accounting firms' M&A advisory work. Accounting knowledge sharing, a unique capability of accounting firms, creates a competitive advantage that helps them compete with investment banks for M&A advisory mandates.

In the following sections, we explain the theoretical perspective motivating our hypotheses and describe the empirical methodology. We then report our findings, followed by a discussion on the contribution of our research to the management and organizational theory and to practice.

[1] The countries are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Aktas *et al.* (2007) highlight that the European M&A regulation has been remarkably stable and homogenous over the period 1990-2004 and the 2004 Takeover Directive 2004/25/EC led to further regulatory harmonization.

Research background and hypotheses

This section first discusses the KBVRB theory. Then, we discuss the importance of the valuation task in M&A engagements.

Knowledge-based view of the resource-based theory

We build on the KBVRB theory to explain how accounting firms compete with investment banks for advisory mandates on M&As. The KBVRB theory emphasizes that companies build competitive advantage through efficient firm-level knowledge identification, creation, acquisition, application, protection and transfer (Penrose, 1959; Rumelt, 1984; Wernerfelt, 1984; Hoskisson, 1987; Hoskisson and Hitt, 1988; Barney, 1991; Peteraf, 1993; Spender, 1996; Barkema and Vermeulen, 1998; Kogut and Zander, 2003). Narasimha (2000) and Miller (2002) view a company as a body that generates, combines and distributes knowledge to build strategic competencies and create value. Grant (1996, p. 110) argue that "[T]he resource-based view perceives the firm as a unique bundle of idiosyncratic resources and capabilities where the primary task of management is to maximize value through the optimal deployment of existing resources and capabilities" and that efficient deployment of resource explains "why some firms are able to establish positions of sustainable competitive advantage". He further argues that knowledge is the most strategically important of the firm's resources. Teece *et al.* (1997) highlight that companies that can successfully deploy their distinct capabilities and resources, which can be implicit or intangible, can gain a competitive advantage. Davenport and Prusak (1998) argue that knowledge transfer within a firm leads to innovation and efficiency gains and Liebowitz (2000) shows that knowledge-based companies are more creative.

Efficient knowledge utilization requires congruence between the knowledge domain of the firm and its product domain (Madhok, 1997; Vermeulen and Barkema, 2001). Inspired by this view, we argue that accounting firms' industry expertise in accounting (the knowledge domain) facilitates their presence in the M&A financial advisory market (the product domain) through reducing the target valuation uncertainty to the acquirer (their competitive advantage) and thereby increasing the

acquirer's shareholder value. In this framework, the source of accounting firm's strategic capability is the knowledge acquired through the audit function and the strategic capability is the deployment of this knowledge through the M&A advisory function on the valuation task.

Grant (1996) and Wareham and Gerrits (1999) emphasize that process of knowledge transfer within a firm requires contact between the source and the recipient. The integrated nature of accounting firms, where the audit and advisory functions are located within the same company, often within the same geographic location or the same building, facilitates knowledge dissemination within the organization. Appendix A illustrates the channels through which the advisory function can lever on the audit experience.

To have a sustainable competitive advantage, a company must constantly replenish, augment and update knowledge (Grant, 1991). The changing nature of accounting regulation and an increasing proportion of hard-to-measure intangible capital (e.g., human and intellectual capital) that constitutes firm value require continuous updating of accounting knowledge. Barney (2001), Macher and Mowery (2009), and Zollo and Winter (2002) highlight that the strategic competitive advantage is unique to the firm and its distinct employees. Accounting firms recruit mainly accounting graduates and accounting specialists and spend considerable resources on ongoing training and certification of staff, such as the expectation that audit personnel obtain professional qualification of the Certified Public Accountant qualification.[2] This up-to-date knowledge could then be deployed in the M&A advisory function to aid valuation of difficult-to-value targets. The need for constant updating of accounting knowledge also points to barriers in knowledge acquisition by traditional investment banks as replicating the knowledge acquisition by accounting firms would be prohibitively costly. This is consistent with Barney's (1991) view that longevity of the firm's strategic advantage depends on inimitability.

[2] All accounting firms encourage and support staff to obtain professional CPA qualification, e.g., https://www2.deloitte.com/ca/en/pages/careers/articles/deloitte-cpa-advantage.html and offer ongoing training, e.g., https://home.kpmg/xx/en/home/careers/life-at-kpmg/learning-and-development.html

Building on the conceptual framework of the KBVRB theory, the next subsection develops two testable hypotheses that link the importance of valuation difficulty to accounting firms' industry expertise in accounting on which their M&A advisory function can leverage.

The importance of the valuation task in M&A engagements

Financial advisor's valuation experience has a significant impact on the fairness of the offer price.[3] The initial target valuation is typically the sole responsibility of the financial advisor and the basis for the offer price proposed to the target's board. The offer price in turn influences whether the target rejects the deal or agrees to a public deal announcement, subsequent due-diligence, and further negotiations (Janiszewski and Uy, 2008; Hukkanen and Keloharju, 2019).[4] Furthermore, because of confidentiality, the initial valuation is largely based on the financial advisors' knowledge and experience and public data, as the bidder has no access to the target's internal documents before submitting the offer (Chemmanur and Fulghieri, 1994; Liaw, 2008, Wangerin, 2019). To illustrate, the City Code states that the bidder is required to publicly announce an offer if the transaction details are to be extended to "more than a very restricted number of people (outside of those who need to know within the parties concerned, and their immediate advisers)." Thus, the advisor's valuation experience will have a direct bearing on the fairness of the offer price.

Accounting firms' accounting industry expertise acquired from their audit work in the target

[3] The International Ethics Standards Board of Accountants defines M&A lead advisors as "primarily responsible for advising on, and organizing and presenting an offer, or the response to an offer." Only in 3% of transactions accounting firms' role is preparing fairness opinion. We do not focus on the quality of fairness opinion for accounting firms vs. investment banks, as Derrien and Dessaint (2012, p. 27) report that "[a]ll fairness opinions [which are issued for the final offer] reported in SDC conclude that the price is fair, because transactions in which the FO [fairness opinion] provider reaches the opposite conclusion do not reach the announcement stage."

[4] To illustrate, Rule 1(a) of the City Code, which is a binding set of rules that apply to listed companies in the United Kingdom, states that the offeror must notify the target's board of the offer terms, including the offer price, before the public announcement of the transaction. Other countries have similar provisions. For example, in the United States, the bidder and target sign a merger agreement stating the terms of the deal before filing form 8k, a report of unscheduled material events, at the time the M&A is publicly announced. Initial acceptance of the offer leads to further negations, which can result in a revision of the offer price, but these are rare. Boone and Mulherin (2007) and Aktas *et al.* (2010) report that virtually no offer prices are revised following the public deal announcement.

industries should facilitate fairer target valuation. Through audit engagements, accounting firms build expertise on the GAAP application in select industries, value drivers and risks (DeFond *et al.*, 2000; Casterella *et al.*, 2004; Balsam *et al.*, 2003). The industry expertise in accounting, therefore, provides accounting firms the competitive advantage in promoting fair target valuation for acquirers. This experience should be particularly valuable on transactions with difficult to value targets. McNichols and Stubben (2015, p. 129) document that "returns to acquiring firm shareholders are significantly higher when the target has higher-quality accounting information" and that "acquirers gain $132 million more from acquisitions of target firms in the top decile of accounting quality compared to acquisitions of target firms in the bottom decile." Raman *et al.* (2013, p. 1073) report that "when a target's earnings quality [EQ] is one standard deviation below the mean EQ, the premium offered increases by 3.65%." Marquardt and Zur (2015, p. 605) argue that "M&A transactions involving target firms with poor accounting quality are generally associated with a more costly and inefficient process than transactions involving targets with higher accounting quality." Empirical evidence suggests only a limited role of even reputable investment banks in mitigating overpayment risk.[5]

Stehr (1992) and Kaplan *et al.* (2001) recognize that knowledge generation and sharing are not directly observable, but can be inferred though observable actions that manifest firm's capabilities. Knight and Kim (2009) see intangible capabilities like in-house knowledge, employment of skilled personnel, and efficient procedures as key resources that support firm performance. Thus, superior performance and value creation is a measurable outcome of successful deployment of firm-specific

[5] For inability of reputable investment banks to mitigate overpayment risk, see McLaughlin (1992), Servaes and Zenner (1996), Rau (2000), Fuller *et al.* (2002), Hunter and Jagtiani (2003), Moeller *et al.* (2003), Porrini (2006), Ismail (2010), and McNamara *et al.* (2008). Lehn and Zhao (2006) and Golubov *et al.* (2012) argue that the primary role of investment banks is to hedge the reputational damage of failed transactions, such as the risk of the CEO being fired. Yasuda (2005), and Ljungqvist *et al.* (2006) emphasize that bidders value the ability of investment banks to facilitate financing for the deal. Hunter and Jagtiani (2003) highlight that investment banks focus on the speed of deal completion. Mauboussin (2010) argues that investment banks evaluate whether an acquisition adds to earnings per share as the measure of success, rather than whether it creates shareholder wealth. McLaughlin (1992) highlight that top investment banks may advise on more complex transactions that deliver poorer outcomes. Jointly, past evidence suggests limited valuation-related benefits of hiring investment banks and further justify the need to examine whether accounting firms have a competitive advantage in valuing targets.

resources and capabilities (Barney, 1991; Wernerfelt, 1984; Collis, 1994). On M&As, the announcement-period stock return captures the benefit an acquisition is expected to bring to the shareholders and is commonly used to measure the value a transaction is expected to generate (Cai *et al.*, 2016; Halpern, 1983; Jensen and Ruback, 1983; Jarrell *et al.*, 1988; Betton *et al.*, 2008). Following the literature, we use the acquirer M&A announcement returns to capture the expected benefits of hiring accounting firm advisors to bidder shareholders. Our first hypothesis is

Hypothesis 1: The acquirer announcement return is comparatively higher for deals with difficult-to-value targets when the financial advisor is an accounting firm compared to an investment bank.

We expect that the comparatively higher returns for deals with difficult-to-value targets advised by accounting firms should relate to their industry expertise accumulated from audit practice — the competitive advantage of accounting firms that mitigates the overpayment risk. Thus, the second hypothesis is

Hypothesis 2: The acquirer announcement return is incrementally higher for deals with difficult-to-value targets when the accounting firm advisor has target-industry accounting expertise.

Data and sample

The sample of acquisitions is from the Securities Data Company (SDC) Platinum M&A database, with listed acquirers from 15 European Union countries and the announcement date falling in the years between 1990 and 2014, inclusively. We place no restriction on the public status or nationality of the target, nor on the industry of the acquirer or the target (Netter *et al.*, 2011). As standard in previous studies (e.g., Golubov *et al.*, 2012; Faccio *et al.*, 2006), we select deals with explicit change of control, i.e., the acquirer must have initially owned less than 50% of the target's stock, and must have sought to own more than 50% after the acquisition. We also require the availability of data on the announcement date, bidder Stock Exchange Daily Official List (SEDOL) code, acquirer advisor name, acquirer advisor parent company name, and deal value. By definition, our transactions exclude in-house acquisitions where the acquirers do not employ a financial advisor (Golubov *et al.*, 2012).

SDC's "Acquirer Financial Advisors" identifies the acquirer advisors and "Parent of Acquirer Advisors," the advisor's parent company. We use the latter to identify accounting firms, as advisors do not share the same name across markets. We manually identify the list of accounting firms based on the list of auditors on Compustat Global and searches on advisors' websites.[6] From the list, we retain deals where the assignment of the accounting firms was financial advisory. Similar to past approaches for classifying transactions (Servaes and Zenner, 1996; Rau, 2000; Golubov *et al.*, 2012), we consider a transaction advised by an accounting firm if the accounting firm is either the sole advisor or part of a syndicate. In close to 66% of transactions, the accounting firm is the sole financial advisor. The criteria above give rise to a sample of 8,153 deals advised by investment banks and 1,249 transactions advised by accounting firms.

Figure 1 presents the time series distribution of transactions and the proportion of deals advised by accounting firms. Fewer than 1% of deals were advised by accounting firms over the period 1990–1992, and the proportion increased to 20% in 1998 and peaked at 27% in 2013. Overall, accounting firms advised on a significant fraction of European M&As. To calculate control variables in our regressions, we collect accounting and market information from Compustat Global Fundamentals and Compustat Global Security Daily files. Additional data restrictions reduce the sample to 7,771 transactions advised by investment banks and 691 deals advised by accounting firms.

Measures of accounting quality and target valuation difficulty

Because there is no commonly agreed measure of the difficulty of a target's valuation, we use proxies based on accounting quality and an index measure that captures multiple dimensions related to target valuation difficulty.

[6] Table B1 in Appendix B illustrates the match between the advisor and the parent for PwC and Table B2 lists the SDC parent advisor codes and names we use to identify accounting firms.

Measures of target's accounting quality

Our main measure of the target's accounting quality is based on accruals quality. Accruals is a standard measure of accounting quality (e.g., Aboody *et al.,* 2005; Francis *et al.,* 2004, 2005; Lee and Masulis, 2009), and its use is consistent with the survey evidence in Dichev *et al.* (2013), who report that CFOs consider high-quality earnings to be backed by cash flows. Penman and Sougiannis (1998) document that the accuracy of free cash flow valuation, the main valuation technique used in M&As (Mukherjee *et al.,* 2004), decreases as the magnitude and volatility of accruals increases. Sloan (1996) finds that investors overstate accrual persistence and overprice high total accruals stocks. Raman *et al.* (2013) and Marquardt and Zur (2015) use accruals to capture accounting quality and to document that bidders are more likely to overpay for targets with low accounting quality. Accounting firms should have a distinct advantage in understanding accruals through their auditing work (Becker *et al.,* 1998; Francis and Yu, 2009) and should mitigate the negative effect low accrual quality has on valuation (Fairfield *et al.,* 2003).

We define firms to be of low accounting quality if they belong to an industry characterized by low accruals quality. We focus on the industry because (1) this measure is not affected by the target's deliberate manipulations of financial information in anticipation of a takeover (Anagnostopoulou and Tsekrekos, 2015; Campa and Hajbaba, 2016), (2) this allows us to retain private targets in the sample, and (3) McNichols and Stubben (2015) find that acquisitions of targets from low accounting quality industries associate with more negative price reactions for the bidders. Sensitivity tests show our conclusions are unchanged when we measure accrual quality for public targets. We measure accruals quality each year for each 2-digit Standard Industrial Classification (SIC) industry using the standard deviation of asset-scaled total accruals measured over the previous four years and then rank industries in ascending order. The indicator variable *Target in low AQ industry* equals 1 if the target belongs to the top two industries, 2.5% of all two-digit SIC groups, with the highest values of the equal-weighted

average of the total accruals volatility of all the firms in the industry, and 0 otherwise.[7]

Because previous studies often use the discretionary component of total accruals to measure accounting quality (Dechow *et al*, 1995; Rangan, 1998), we also measure target accounting quality using an indicator variable *Target in high Jones residual STD industry*, which takes a value of 1 if the target is in top two industries with the highest equal-weighted average volatility of residuals estimated from the Jones (1991) model using five years of data for each firm and minimum of 10 firms per industry, and 0 otherwise. Xie (2001) documents that the market overprices abnormal accruals estimated from the Jones (1991) model and Skaife and Wangerin (2013) report that acquirers overpay for high discretionary accruals targets consistent with such targets being harder to value. The limitation of the discretionary accruals measure is that it is designed to capture within-industry differences in discretionary accruals, thus may not accurately capture between-industry differences in valuation difficulty.

Because accrual measures of accounting quality are contentious (e.g. Dechow *et al.*, 2010), we also measure target valuation difficulty by the proportion of qualified opinions in an industry in the previous year. Francis and Krishnan (1999) and Bartov *et al.* (2000) document a positive association between reporting quality and the issuance of unqualified opinions. We count the number of qualified opinions annually for each two-digit SIC code industry. *Target in high qualified opinion industry* is an indicator variable taking the value of 1 if the target is in the top quartile of industries with the highest number of qualified opinions, and 0 otherwise.

Index measure of target valuation difficulty

Next, we build an index measure to capture multiple dimensions of target valuation difficulty.

[7] Sensitivity tests show our conclusions are unchanged when we use other cut-off points to define *Target in low AQ industry*, such as top 1% or top 5% industries. We pool industries across target markets in calculating *Target in low AQ industry* because the targets come from 116 markets, which prevents reliable estimate at the country level for most markets. However, we show robustness of our conclusions for a sample of EU targets when *Target in low AQ industry* is estimated at the country level.

This measure recognizes that valuation uncertainty stems not only from low accounting quality, but also relates to the availability of information about the target, bidder's incentives to mitigate overpayment risk, and the quality of target's country institutional setting. Specifically, *Target valuation difficulty*, is an index from the principal component analysis of the *Target in low AQ industry*, and three additional valuation uncertainty measures.[8] The first one is the indicator for private targets, *Private target*. Private targets are more difficult to value given the limited information available to investors, low financial reporting quality, and high information search costs. Compared with public companies, information about private entities is not as easily obtained, owing to the lack of listing requirements by the stock exchange or the lack of incentives for voluntary disclosure (Singhvi and Desai, 1971). Hope *et al.* (2013) document that private firms have, on average, lower accrual quality and are less conservative, as they face lower demand for financial information.

Larger deals are associated with greater investor and media scrutiny, and with more negative consequences related to failed transactions, such as forced CEO departure (Lehn and Zhao, 2006). Such deals may entice managers to place more emphasis on fair valuation. Consistently, Raman *et al.* (2013) and Alexandridis *et al.* (2013) find that bidders are less likely to overpay for larger targets, and Golubov *et al.* (2012) report more positive price reactions to acquisitions of relatively larger targets. Thus, our third proxy for valuation uncertainty is the size of the target, which we proxy by deal size, *Deal Value*.

We expect non-US targets to be associated with higher valuation uncertainties. Prior research has documented higher financial reporting quality under US generally accepted accounting principles (GAAP) than under other national GAAPs (Lang *et al.*, 2006). Significant differences remain despite the enhanced financial reporting comparability of non-US firms with US firms after adopting International Financial Reporting Standards (IFRS) (Barth *et al.*, 2012). To capture this effect, we include a dummy variable, *Non-US target*, for whether the target is located outside the US, as the

[8] Our conclusions are unchanged when we include *Target in high Jones residual STD industry* and *Target in high qualified opinion industry* in principal component analysis.

fourth proxy.

The index measure *Target valuation difficulty* is based on the principal component analysis of the four valuation uncertainty proxies. The weights are 0.14 for *Target in low AQ industry*, 0.58 for *Private target*, 0.24 for *Non-US target*, and 0.63 for an indicator variable for small targets, which includes targets in the bottom quintile as ranked on deal size.

Main results: Acquirer announcement returns

To examine investors' perception of how well accounting firms bring benefits to the acquirers' shareholders compared with how well investment banks bring benefits, we calculate a five-day announcement period cumulative abnormal return, *CAR* (see also Cai *et al.*, 2016; Halpern, 1983; Jensen and Ruback, 1983; Jarrell *et al.*, 1988; Betton *et al.*, 2008). The normal return benchmark is the stock market index of the acquirer's listing exchange. We are primarily interested in the differential stock reaction captured by the indicator variable for the accounting firm advisor, *AF advisor*. On the M&A announcement day, investors learn about the deal and whether the transaction is advised by an investment bank or an accounting firm.[9] If accounting firm advisors generate tangible benefits to bidders, we expect a higher price reaction to transactions advised by accounting firms compared to investment banks. This effect should dominate in cases when bidders attempt to acquire difficult-to-value targets as prior evidence shows lower price bidder price reactions for such deals (Gu and Lev, 2011; Mauboussin, 2010; Raman *et al.*, 2013; Marquardt and Zur, 2015).

The baseline specification of the acquirer return regression analysis is:

$$\begin{aligned} CAR = {} & \alpha_0 + \alpha_1\, AF\ advisor + \alpha_2\, AF\ advisor \times Target\ valuation\ difficulty\ measure \\ & + \alpha_3 Target\ valuation\ difficulty\ measure + \Lambda_4\, Deal/Acquirer/Country\ controls \\ & + \Lambda_5\, Year\ effects + \Lambda_6\, Industry\ Effects + \varepsilon. \end{aligned} \quad (1)$$

[9] Article 6 of the Takeover Directive 2004/25/EC specifies the bidder must disclose to the public, on the announcement day, material deal-relevant information, which includes the identity of advisors.

where *Target valuation difficulty measure* is one of the four measures of target valuation difficulty. *Deal/Acquirer/Country controls* include the method of payment, as cash-financed acquisitions elicit price reactions that are more favorable (Travlos, 1987), whether the deal requires external financing (Baker and Wurgler, 2006), whether it is a hostile takeover (Servaes, 1991), and whether it includes more than one bidder (Fich *et al.,* 2016). We control for the previous relation between the bidder and the advisor, as acquirers are more likely to retain better-performing advisors (Sibilkov and McConnell, 2014); for the size of the advisory team as co-advisors may benefit from the synergy of their expertise, ensuring better risk sharing and monitoring, which can produce better outcomes (Hunter and Jagtiani, 2003); and for the complexity of the payment consideration, as transactions where the payment involves a mix of cash, equity, and hybrid financing associate with less positive outcomes for the bidder (Burgess, 2010). We also include controls for cross-industry and cross-border deals, and for whether the target has significant family ownership, as these transactions tend to have disappointing outcomes (Eckbo and Thorburn, 2000; Basu *et al.*, 2009; Fan and Goyal, 2006; Hoberg and Phillips, 2010). Finally, we include acquirer characteristics and country controls, as well as dummy variables for the year and industry fixed effects. Industry effects capture differences in average price reactions between industries. Year dummies pick up temporal differences in price reactions, e.g. related to the merger announcements in the peak compared to the trough of the business cycle (Rhodes–Kropf *et al*., 2005). The statistical tests on the estimated coefficients are based on clustered standard errors robust to within-industry correlation (Rogers, 1993) and are heteroskedasticity-adjusted (White, 1980). We cluster on industry as M&As tend to happen in industry waves (Harford, 2005; Ahern and Harford, 2014). All continuous variables are winsorized at the 1st and 99th percentiles. Table 1 summarizes the definitions of the variables used in this study.

Table 2 presents the descriptive statistics of the variables in equation (1), including the individual measures of target's valuation uncertainty that constitute *Target valuation difficulty*. The table is partitioned into M&A deals advised by accounting firms and those by investment banks. We

document that deals advised by accounting firms tend to be for targets in industries with lower total and discretionary accruals quality, and a higher proportion of qualified opinions. Deals advised by accounting also include more private, non-US, and relatively smaller targets. Thus, accounting firms advise precisely on the type of deals where accounting expertise should help resolve valuation uncertainties.[10]

Regression results

Panel A of Table 3 reports the average CARs for deals split by the type of acquirer advisor. Price reactions for deals advised by accounting firms are on average over two times higher in magnitude compared to those advised by investment banks (2.02% vs. 0.92%). These results suggest substantial gains for bidders who hire accounting firms as advisors.

The baseline regression results in Panel B confirm that bidders experience negative price reactions when they attempt to acquire difficult-to-value targets, as captured by *Target in low AQ industry*, with average bidder's value being reduced by approximately 0.6% or $50 million.[11] This result is consistent with past evidence (Gu and Lev, 2011; Mauboussin, 2010; Raman *et al.*, 2013; Marquardt and Zur, 2015). The coefficient for *AF advisor* in the baseline model is positive, which confirms higher price reactions to deals that are advised by accounting firms. For the baseline model, the magnitude of the price reaction is 0.4% higher for deals advised by accounting firms, which translates into a $32 million shareholder value gain for a mean-sized bidder. Thus, the regression results confirm univariate evidence of significant benefits to bidders from hiring accounting firm advisors.

Benefits from hiring accounting firm advisors should be concentrated in transactions involving difficult-to-value targets. Model (2) shows a positive coefficient for the interaction term *AF advisor* × *Target in low AQ industry*, consistent with accounting firms having expertise in advising on deals

[10] Data requirements to construct the regression variables lead to a slightly smaller proportion of private transactions in our sample compared to other European studies, such as Faccio and Masulis (2005), Aktas *et al*. (2016), Drobetz and Momtaz (2020), and Asimakopoulos and Athanasoglou's (2013).

[11] We calculate this number by multiplying the coefficient value for *Target valuation difficulty* by the bidder's average market capitalization, i.e. −0.006 × USD 8466M.

with difficult-to-value targets. Such transactions associate with a 3.9% higher price reaction when advised by accounting firms compared to investment banks. In contrast, the negative coefficient for *Target low AQ industry* suggests that investment banks have no such competitive advantage in these deals—price reactions are on average 1.1% lower for transactions with difficult-to-value targets advised by investment banks.

We reach similar conclusions when we use other measures of target valuation difficulty. Model (3) documents that investors react more negatively when the bidder acquires a difficulty-to-value target captured using the index measure and the transaction is advised by an investment bank, and models (4) and (5) report similar conclusions using the measure of discretionary accruals volatility and auditors' qualified opinions. Importantly, investors react more positively to such transactions advised by accounting firms.

Audit-related industry expertise

Valuation textbooks emphasize the importance of accounting industry analysis in assessing firm performance and in valuation (Wahlen *et al.,* 2014). We propose that the positive stock price reaction to deals involving difficult-to-value targets advised by accounting firms is tied to their audit-generated industry expertise. To test this prediction, we augment equation (1) with an indicator variable, *AF advisor with industry expertise in accounting*, to capture the industry audit-specialist status of an accounting firm. This variable takes the value of 1 if the acquirer advisor is an accounting firm and an audit specialist of the target's industry, and 0 otherwise. The audit-specialist status of an industry is constructed according to the largest-industry-market-share definition, as in Cairney and Young (2006), Behn *et al.* (2008), Cahan *et al.* (2008), and Gul *et al.* (2009). Specifically, we rank accounting firms based on their percentage of total assets audited in the industry, and the audit firm capturing the largest market share (of total assets) is identified as a specialist in that industry. Because our focus shifts to the target's industry, we need an industry measure of target valuation difficulty. We start by examining targets in industries characterized by low accounting quality, *Target in low*

AQ industry, and interact this variable with the industry audit-specialist measure. The model specification is:

$$\begin{aligned} CAR = {} & \delta_0 + \delta_1\, AF\ advisor + \delta_2\, AF\ advisor\ with\ industry\ expertise\ in\ accounting \\ & + \delta_3\, AF\ advisor\ with\ industry\ expertise\ in\ accounting \\ & \qquad \times Target\ in\ low\ AQ\ industry \\ & + \delta_4\, Target\ in\ low\ AQ\ industry + \Xi_5\, Deal/Acquirer/Country\ controls \\ & + \Xi_6\, Year\ effects + \Xi_7\, Industry\ Effects + \varepsilon. \end{aligned} \tag{2}$$

Panel C of Table 3 reports the regression results for equation (2). We continue to observe a negative coefficient for the indicator *Target in low AQ industry*. Importantly, a positive coefficient for the interaction *AF advisor with industry expertise in accounting* × *Target in low AQ industry* suggests that investors recognize the audit-related expertise of accounting firms as their unique strength, which is not shared by investment banks. We reach similar conclusions in columns (2) and (3) when we use *Target in high Jones residual STD industry* and *Target in high qualified opinion industry* measures of target industry valuation difficulty. Thus, results show the robustness of our conclusion to using alternative measures of target valuation difficulty. Appendix C reports additional tests supporting our conclusions that accounting firms have a competitive advantage to advise on transactions with difficult to value targets, and Appendix D reports tests that address the endogeneity concern. Appendix E reports evidence showcasing that investments banks cannot replicate the competitive valuation advantage of accounting firms.

Offer premium and related results

We argue that the unique strength of accounting firms as M&A advisors stems from their accounting expertise, which helps reduce valuation uncertainty. Reduced valuation uncertainty allows the acquirer to more accurately estimate the target's reservation price and thereby lower the offer premium. To assess how well accounting firms, in contrast to investment banks, help acquirers reduce the overpayment risk, we examine the variable *Offer premium* defined as (the ratio of the bid

price per share to the target's closing stock price 1 day prior to announcement – 1) × 100. The variable is only available for public targets. We use *Offer premium* as the dependent variable in equations (1) and (2) and expect that accounting firms help bidders negotiate lower average premiums, particularly for targets with low accounting quality.

Panel A of Table 4 reports the average premiums for the sample split by the advisor type. Deals with accounting firm advisors have, on average, a 13.88% lower premium compared with deals advised by investment banks (25.46% vs. 29.56%).[12] The univariate results provide preliminary evidence suggesting that bidders advised by accounting firms are able to pay lower premiums for their targets.

Panel B of Table 4 reports the offer premium regression estimates. Model (1) of the panel confirms the univariate results of lower premiums for accounting-firm-advised deals. Specifically, we document a 3.4% lower premium on deals advised by accounting firms, which translates into an average saving of $62 million for a mean-sized deal. The positive coefficient of *Target in low AQ industry* is consistent with prior research, suggesting that bidders tend to overpay for targets with poor accounting quality. Model (2) shows that the lower premiums are associated with the competitive strength of accounting firms, namely for deals where the accounting firm is an audit specialist for the target's industry, and the target's industry is of low accounting quality.[13] Together, the results in Table 4 confirm that the quality of accounting firms' advice, which is linked to audit-related accounting expertise, translates into more competitively priced transactions for the bidders.[14] Appendix E reports additional tests consistent with accounting firms reducing the overpayment risk. Specifically, we show that accounting firms advise on transactions with (1) lower likelihood of post-acquisition goodwill impartment and (2) higher completion rates, which suggests our evidence does

[12] For the propensity-score-matching sample, the saving is 12.43% (an offer premium of 25.46% for accounting firm advisors vs. 29.07% for investment banks). Because the offer premium data are only available for listed targets, the PSM sample decreases to 64 deals advised by accounting firms and their matches advised by investment banks.
[13] In untabulated results, we find the regression conclusions are the same for the PSM sample from Appendix D.
[14] In the unreported results, we find that our conclusions are unchanged when we define the offer premium as the ratio of the bid price per share to the target's closing stock price four weeks prior to the announcement.

not capture underbidding.

Merger synergies, target price reactions and long-run post-merger performance

Our evidence can reflect that accounting firms contribute to higher overall deal synergies and/or favor the bidder over the target (Agrawal *et al.*, 2013; Asker and Ljungqvist, 2010; Chang *et al.*, 2016). To disentangle the two explanations, we next examine how accounting firms affect (1) the combined deal synergies, (2) how the synergies are shared between the bidder and the target, and (3) if they affect public targets' price reactions to deal announcement.

We follow Bradley *et al.* (1988), Wang and Xie (2009), and Kale *et al.* (2003) and calculate merger synergies as the CAR of a value-weighted portfolio of the bidder and the target with the weights based on their respective market capitalizations before merger announcements. We then use it as the dependent variable in equation (1). Column (1) in Panel A of Table 5 shows no evidence that accounting firms promote higher combined synergies of the merger. However, Column (2) indicates that accounting firms aid the bidder in capturing a larger share of deal synergies. This evidence is consistent with the proposition that accounting firms facilitate target valuation, but do not necessarily advise the bidder in selecting better quality targets or promote better target integration that would maximize the synergies achieved through the merger compared to investment banks.

To nail down the proposition that accounting firms favor bidders over targets, the last column in Panel A examines the *targets'* announcement day returns. Prior studies document that contrary to the bidders, the targets tend to experience significant positive price reactions. This finding has been attributed to a wealth transfer from the bidder to the target because bidders overpay for targets (Jensen and Ruback, 1983; Jarrell *et al.*, 1988; Datta *et al.*, 1992). If accounting firm advisors promote valuation fairness, they should reduce the risk of wealth transfer from the bidder to the target. Consistently, we find less positive target announcement returns when the *bidder* is advised by an accounting firm.

Panel B of Table 5 examines the post-merger long-run returns to help us check if accounting firms affect performance of the merged firm. We calculate each bidder's abnormal return from regressing daily post-merger returns over 6, 12, 36 and 60 months after the deal announcement on the Fama-French European three-factor model, which we then use as the dependent variable in equation (1). The panel documents a positive effect accounting firms have on 6-months abnormal returns, but not on longer horizon returns. The latter evidence is consistent with (1) past evidence documenting no association between financial advisor quality and post-merger long-run returns (Bowers and Miller, 1990; Michel *et al*., 1991; Servaes and Zenner, 1996; Rau, 2000), (2) the findings in Renneboog and Vansteenkiste (2020), who argue that long-run performance of M&As is affected mainly by bidder characteristics, such as acquirer's corporate governance and bidder's ability to integrate the target, and (3) the M&A advisory mandate ending shortly after the deal announcement, thus the M&A advisor would not affect post-merger integration. Jointly, Table 5 evidence supports our contention that accounting firms' main role is to reduce the risk of wealth transfer, due to overpayment, from the bidder to the target.

Discussion

Our study contributes theoretical and empirical insights to the management literatures, practical insights to executives managing the acquisition process, and has implications for policymakers regulating accounting firms. We advance the knowledge-based perspective of organizations explaining how knowledge spillover from audit work can enhance the quality of M&A advisory work, helping accounting firms establish their strong foothold in investment banks' specialty territory.

The practical insights we contribute concern the benefits executives may expect to achieve from hiring accounting firms as M&A advisors for transactions with difficult-to-value targets. Our finding is consistent with synergy motivated mergers (Bradley *et al.*, 1988) and managers choosing accounting firm advisors to mitigate the risk of wealth transfer from the bidder to the target arising

from information asymmetry and winner's curse that lead to overbidding (Roll, 1986). Our evidence suggests that by hiring an accounting firm advisor, managers can reduce merger hubris, i.e., the mistake of myopic overvaluation of the target (Seth et al., 2000) and expect a more positive price reaction to M&A announcements when acquiring difficult-to-value targets.

Our empirical contribution is fourfold. First, we add to the body of empirical research testing the KBVRB theory. Although knowledge acquisition and management have been the focus of several studies (e.g., Chandler *et al*., 1998; Bontis and Choo, 2002; Dosi *et al*., 1998; Eisenhardt and Santos, 2006; Moingeon and Edmondson, 1996), the evidence on how companies deploy knowledge to build competitive advantage is more limited. Newbert (2007) reviews 55 empirical papers that test the resource-based view theory, RBV, and find that "while the RBV has received considerable attention in the empirical literature, it has only received marginal [empirical] support"; he finds that the six studies looking specifically at knowledge as a resource find support for only 20% of tested hypotheses. Our evidence suggests knowledge intensive organizations, such as accounting firms, can deploy knowledge across functions to build a strategic advantage, consistent with the KBVRB theory.

Second, we document the active role of accounting firms in the M&A advisory market, and their high performance in terms of M&A outcomes for difficult-to-value transactions – a result missed by prior empirical studies. Previous research focused on the impact investment bank advisors have on the M&A performance (McLaughlin, 1992; Servaes and Zenner, 1996; Rau, 2000; Fuller *et al.*, 2002; Hunter and Jagtiani, 2003; Moeller *et al.*, 2003; Porrini, 2006; Ismail, 2010; McNamara *et al.*, 2008; Golubov *et al.*, 2012). We report how accounting firm's strategic resource – audit knowledge – can be deployed to compete with investment banks for advisory mandates on transactions where overpayment risk is a significant concern. Our evidence helps explain the high activity of accounting firms in the M&A market as captured by the Thomson Reuters and Mergermarket rankings. Since 2014, Big Four accounting firms (KPMG, PwC, Deloitte and Ernst & Young) have ranked among

the top four to top eight bidder advisors in the European league tables by deal count, and among top twenty in terms of deal value (e.g. Mergermarket, 2014; Thomson Reuters, 2018).[15] They also feature in the global rankings, for example, Mergermarket ranks accounting firms as the top five most active global M&A advisors by volume in their Global & Regional M&A Report 2018.[16]

Third, our evidence complements earlier empirical studies that examined how information asymmetry jointly with the merger motives, such as synergies, hubris and agency, contribute to overbidding in M&As and how the overpayment risk may be reduced (Bradley *et al.*, 1988; Roll, 1986; Coff, 1999, 2002; Reuer *et al.*, 2004; Reuer, 2005; Capron and Shen, 2007; Mantecon, 2009; Zaheer *et al.*, 2010; Kim *et al.*, 2011; Malhotra and Gaur, 2014; Smit and Kil, 2017; de Bodt *et al.*, 2018). Fourth, we provide the much-needed international evidence on the factors affecting M&A performance (Ahammad *et al.*, 2017; Cumming *et al.*, 2020) and the value of external advisors (Conyon *et al.*, 2019), which responds to the call in Cartwright (2005), who highlights "high concentration of [M&A] interest in the USA and UK."

Finally, our findings help policymakers and regulators to appreciate the benefit of letting accounting firms develop different lines of services. Our results suggest that it is in accounting firms' own interest to continue high-quality audit and reporting services in order to be competitive in delivering M&A advisory services. Thus, we add an importance voice to the debate on the need to separate the audit from advisory functions within accounting firms.[17]

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[15] We believe rankings by deal counts are important as most M&As are ultimately medium and smaller transactions. For example, the proportion of headline-grabbing deals with value of over £1billion is between 1% and 3% over the period 1985-2019 (https://imaa-institute.org/mergers-and-acquisitions-statistics/). League tables by value can be distorted by a few large transactions, e.g. Mergermarket *global* league tables for 2019 include Dyal Co with only two deals.

[16] Global rankings understate the M&A activity of accounting firms, as the firms are largely absent from the active United States (US) M&A market. Harris (2014) highlights that soon after the Sarbanes-Oxley act, which constrains a US bidder's advisor choice to a firm other than its auditor, was enacted, three of the Big Four divested their advisory and consulting practices in the US. In other markets, no legal barriers prevent accounting firms from offering advisory services to both audit and non-audit clients.

[17] For example, "the UK's Financial Reporting Council (FRC), the regulatory watchdog for the accounting industry, has set a deadline of June 2024 for the Big Four accounting firms to separate audit practices from the rest of their other operations to avoid potential conflicts of interest" (The Forbes, "What The Break-Up Of The Big Four Audit Function Could Mean For The Future Of Accounting", Oct 19, 2020).

Conclusion

This study documents knowledge spillover of audit-generated industry expertise to M&A advisory services facilitating the valuation of such targets, which leads to higher announcement day returns. The strong foothold of accounting firms in investment banks' specialty territory suggests that accounting firms have a unique positioning in the valuation area, solving acquirers' pain point of overpaying for targets. The results add to the literature studying the knowledge-based perspective of organizations.

Future research could examine if investment banks recognize the valuation advantage of accounting firms in building advisory syndicates and if such syndicates lead to knowledge sharing between investment banks and accounting firms. We also recommend that future M&A research controls for whether a transaction is advised by an accounting firm as (1) such deals are associated with better outcomes and (2) accounting firms advise on a non-trivial proportion of M&A transactions in Europe. Ignoring the impact accounting firm advisors have on M&As could lead to an omitted correlated variable problem (Hill *et al.*, 2021).

One question remains: Why do so many acquirers still hire investment bank advisors for such transactions? We provide two perspectives. First, we document that bidders choose investment banks over accounting firms for transactions where the advisor needs to secure financing for the deal, in cases where the transaction involves a more complex payment consideration, and when there is a competing bid for the target—investment banks should have a competitive advantage over accounting firms on such transactions. Thus, consistent with the KBVRB theory, there is a separating equilibrium where bidders are more likely to choose accounting firms for transactions where bidder valuation uncertainty and risk of overpayment is high, but prefer investment banks where securing financing

for a deal is important.[18] Second, Axworthy and Stinga (2015) highlight that "[M]any clients still do not perceive the 'Big 4' as deal advisors. At their core they are accounting firms and their corporate finance practices in the past have carried out due diligence work. Companies often overlook them for lead advisory work and choose investment banks or boutique advisory firms for this type of service." Indap (2015) points out that "[l]arge companies are particularly status conscious and because of legal scrutiny from being listed, may hesitate to stray towards companies whose identity – fairly or not – lies in bookkeeping." Our evidence should entice managers to consider accounting firms for transactions where valuation concern is the primary driver in advisor selection.

[18] A sustainable competitive advantage cannot be easily replicated by competitors, e.g. investment banks may hire ex-auditors to their teams to replicate accounting firm's valuation advantage. However, that would be prohibitively costly as would require hiring auditor across all industries with only a small fraction being deployed on a given assignment. Further, ex-auditor knowledge would become obsolete over time reducing the benefit of their audit knowledge. Thus, accounting firms can maintain their competitive advantage vis-à-vis investment banks.

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Appendix A: Channels through which accounting firm advisors lever on audit experience

The M&A advisory function of accounting firms can leverage auditing expertise through multiple channels. First, individual firms within the network can draw on the resources of other members, and advisory teams can liaise the services of other functions. To illustrate, the Deloitte M&A advisory website advertises that it "capitalizes on its vast valuation experience gained from assurance work" (Deloitte n.d.).[19] In our industry interviews with practitioners, Andy Brogan, EY Transaction Advisory Services partner, highlighted that "often valuation people working on M&As also work on assurance" and that M&A teams "bring in specialist knowledge [from other service lines] for transactions," particularly from assurance for "anything that relates to accounting." Helen Roxburgh, KPMG Corporate Finance Director, stressed that "for a particular sector with complex accounting, we may reach to audit to understand the challenges in that sector, or what the underlying performance of the business is."

Second, information gained through the audit process can enhance the quality of proprietary M&A analytics platforms. For example, KPMG highlighted that "[e]stablishing industry benchmarks is essential to any acquisition or transaction" and that its analytics platform "leverages a robust, proprietary database which gleans information from our engagements with 1,000+ private companies" (KPMG, n.d.).

Third, information spillover can also occur via other channels like internal training by in-house accounting and audit specialists (Trotman, Bauer, and Humphreys, 2015; Salterio and Denham, 1997; Dittman, Juris, and Revsine, 1980; Chen, Chang, and Lee, 2008). Furthermore, appointments to the advisory functions often occur from within assurance. Online career blogs suggest audit experience

[19] Other M&A advisory pages market similar interactions. KPMG stresses that "when needed, we can quickly tap into industry-experienced professionals from other disciplines, including audit" (KPMG, 2010). PwC transparency report states that all "PwC firms share knowledge, skills and resources. This relationship enables PwC firms to work together to provide high-quality services on a global scale" and that such interactions "comply with common [compliance] policies and the standards of the PwC Network." Deloitte advisory highlights their "access to a global network of industry specialists from Deloitte member firms and their affiliates." BDO advisory state they are "working with our colleagues in BDO's global network as appropriate." Members of the M&A advisory team are not publicly known, however, our search on LinkedIn revealed 3,893 auditors with experience in M&A engagements.

is often a requirement for M&A posts, e.g., the *Life of An Auditor Blog* (2012) mentions that "[T]o get into M&A diligence [at the Big Four], you'd need to put in 3–4 years in audit, because they usually like people with audit experiences and CPA certifications." Because audit and tax-advice revenue have stagnated, auditors see M&A teams as an alternative career path. This can encourage assurance staff to actively seek to assist or participate in advisory services, or even to switch to the advisory unit permanently.

Assurance partners have an incentive for supporting non-audit work, as it can influence future audit appointments, their career progression, and remuneration. Beattie and Fearnley's (1998) interviews highlighted that auditor choice is strongly influenced by prior experience in providing quality non-audit services. *The Economist* (2010) stated that "Deloitte's audit directors referred to their cross-selling work when discussing promotions" and "PWC stressed 'business growth' when handing out bonuses for auditors." Agnew (2015) highlighted that "[I]n the UK, none of the senior partners of the Big Four firms comes from a pure audit background. Instead they have come up through the ranks of advisory (PwC's Mr. Powell and EY's Steve Varley), corporate finance (KPMG's Mr. Collins) and tax (Deloitte's David Sproul)."

The effect low accounting quality has on valuation fairness

We argue that accounting firms will lever on the accounting industry experience acquired through audit engagements to produce fairer target valuations. Palepu and Healy (2008) emphasize the importance of fair target valuation to avoid overpayment, and show how poor financial statements jeopardize the valuation task. McNichols and Stubben (2015) argue that the low accounting quality of a target reduces the precision of value estimates, which increases the range of potential values and leads to a higher winning bid relative to the target's reservation price. The offer price gravitates towards the high end of the potential values because low accounting quality makes it difficult to identify a target's reservation price and consequently bidders prefer to overbid to reduce the risk that

the offer will be rejected (Raman, Shivakumar, and Tamayo, 2013; Marquardt and Zur, 2015; McNichols and Stubben, 2015). Thus, accounting knowledge of the financial advisors is likely to have material effect on target valuation fairness in M&As.

Appendix B: Sample selection

Table B1. Names of M&A advisors associated with PwC

The table shows names of advisors on SDC and their codes where the parent is PwC.

Advisor name	SDC advisor code	Parent Name
Price Waterhouse Corporate Fin	PRICE-CORP-FIN	PricewaterhouseCoopers
Pricewaterhouse Coopers Secur	PWC-SECURITIES	PricewaterhouseCoopers
PricewaterhouseCoopers	PWC	PricewaterhouseCoopers
PricewaterhouseCoopers (Aus)	PWC-AUS	PricewaterhouseCoopers
PricewaterhouseCoopers (JP)	PWC-JAPAN	PricewaterhouseCoopers
PricewaterhouseCoopers (SG)	PWC-SG	PricewaterhouseCoopers
Pricewaterhousecoopers Corpora	PWC-CF-SAS	PricewaterhouseCoopers
PricewaterhouseCoopers Secur	PWC-SEC	PricewaterhouseCoopers
PwC Advisory Co Ltd (JP)	PWC-ADV-JAPAN	PricewaterhouseCoopers
PwC Transaction Services Inc	PWC-TRANS-SVCS	PricewaterhouseCoopers
PricewaterhouseCoopers (UK)	PWC-UK	PricewaterhouseCoopers

Table B2. SDC parent advisor codes and names

The table reports parent advisor codes and names of accounting firms on SDC.

SDC parent advisor codes	SDC parent advisor names
ARTHUR-ANDERSEN	Arthur Andersen
BAKER-TILLY-INT	Baker Tilly
BDO	BDO
CROWECLARK	Crowe Clark Whitehill
DELOITTE	Deloitte
ERNST-YOUNG	Ernst & Young
GRANT-INTL	Grant Thornton
KPMG	KPMG
MCGLADREY-CM	McGladrey Capital Markets
PANNELL-KERR	Pannell Kerr Forster
PKF-INTL	PKF International
PKFITALIA	PKF Italia
PWC	PricewaterhouseCoopers
RSM-BENTJEN	RSM Bentley Jennison
RSM-TENON	RSM Tenon Group
RSMROB	RSM Robson Rhodes
SMITH-W	Smith & Williamson Securities
TENON-GROUP	Tenon Group

Appendix C: Further tests and alternative measures of target valuation difficulty

Bidder's corporate governance

This section presents additional tests to build confidence in our main findings. First, to ensure the robustness of our conclusions, we repeat equation (2) with controls for bidder's corporate governance quality. *CEO-chairman separation* is an indicator variable equal to 1 if the CEO function is separate from the Chairman function, and 0 otherwise. *CEO Board Member* is an indicator for whether the CEO is a board member. *Board size* is the total number of directors sitting on the board. Data on corporate governance is from Eikon and available for 2,856 deals. Column *Bidder corporate governance* in Panel A of Table C1 documents that CEO-Chairmen separation has a positive effect on bidder's announcement day returns, a result consistent with Masulis *et al.* (2007). Larger board size has a negative effect on price reactions, consistent with Defrancq *et al.* (2021). Importantly, controlling for bidder's corporate governance quality leaves our main conclusions unchanged.

Alternative measures of target's valuation difficulty

Next, to build further confidence that our conclusions are not driven by a specific measure of industry valuation difficulty, we repeat the analysis for four additional measures. First, we examine acquisitions of targets from R&D intensive industries, as conservative R&D treatment increases valuation difficulty, and is associated with stock mispricing (Lev *et al.*, 2005). We follow Lev and Sougiannis (1996) and Hirschey *et al.* (2001) in defining high R&D industries as those where the three-digit SIC code is one of 357, 367, 382, 384, or 283. This method allocates 16% of transactions to high R&D industries. Model (2) in Panel A of Table C1 documents that for such targets, investors react more positively if the transaction is advised by a specialist accounting firm advisor compared to investment banks advising on such transactions.

Second, we expand the number of industries in *Target in low AQ industry* to six (*Target in low AQ industry2*), which captures approximately 13% of deals. Model (3) in Panel A of Table C1 shows

that the coefficient for the interaction *AF advisor with industry expertise in accounting* × *Target in low AQ industry2* remains significant, which suggests our conclusions are not sensitive to the number of industries we use to define *Target in low AQ industry*.

Third, the last columns of Panel A show that our conclusions from Panel C of Table 3 are unchanged when we re-calculate *Target in low AQ industry* at each target country level for a sample of the targets from the largest EU markets, *Target in low AQ industry3*. Thus, our results are not sensitive to the way we calculate this measure.

In untabulated results, we also estimated equation (1) excluding deals announced during the financial crisis period 2007-2009. We continue to find incremental price reactions to deals advised by accounting firms consistent with our main results.

Target-specific measures of valuation difficulty

Fourth, we use a sample of public targets and augment equation (1) with target-specific measures of accrual quality: asset-scaled total accruals (*Target total accruals*) and accrual volatility (*Target total accruals volatility*), and their interactions with *AF advisor*. We also control for the target's leverage, the book-to-market ratio, the number of target advisors, the target loss indicator, and the target country controls defined in a way similar to that of the acquirer country controls. Our sample has 960 deals with non-missing data. Panel B of Table C1 shows that, consistent with our main conclusions, investors react more positively when bidders acquire difficult-to-value targets and are advised by accounting firms.[1] Therefore, our conclusions do not depend on whether the valuation uncertainty proxy is industry-level or firm-level; however, the firm-level measure significantly reduces the sample size.

[1] The evidence that announcement returns are higher for difficult-to-value *public* targets advised by accounting firms helps exclude an alternative explanation based on reputational exposure. Golubov *et al.* (2012) argue that top investment banks advise on public target acquisitions as these transactions require more skill and effort due to greater bargaining power of public targets and increased disclosure and regulatory approvals required. Our evidence suggests that even for public targets, where reputational exposure is higher, bidders benefit from hiring accounting firms when there is higher likelihood of overpaying for the target.

Further results for the competitive strength of accounting firms

In this section, we use cross-sectional identification to establish corroborating evidence consistent with the conjecture that knowledge spillover helps accounting firms offer superior M&A advisory services in instances where target valuation difficulty is high. First, model (1) in Panel C of Table C1 documents a stronger effect on the acquirer announcement return for deals with targets in low-accounting-quality industries when the accounting firm advisor is a Big Four (*Big 4*) rather than a non-Big Four. The Big Four are believed to be capable of performing higher-quality audits (Becker *et al.,* 1998; Khurana and Raman, 2004; Tendeloo and Vanstraelen, 2008; Behn *et al.*, 2008), and their larger networks allow them to have more private and public clients, as well as more in-house specialists, which facilitates expertise-building. This gives the Big Four an advantage over non-Big Four firms in accumulating accounting knowledge that can aid the M&A advisory teams.

Model (2) in Panel C, Table C1, extends the analysis by including an indicator variable for whether the accounting firm advisor is also the auditor of the *target* in the year before the transaction, *AF advisor is target auditor*. Holding such a dual role can reduce acquisition uncertainty, as the accounting firm advisor has access to firm-specific knowledge about the target accumulated through the auditing process and informal discussions with the target's management. Though such roles can be ethically controversial, they are legally allowed.[2] We then interact this indicator with *Target in low AQ industry*. Our search on Compustat, Compustat Global, Worldscope, and Fame for target auditors identifies 275 target auditors for bidders using accounting firms, of which 69 include cases

[2] The International Ethics Standards Board of Accountants' Code of Ethics issued in July 2009 by the International Federation of Accountants states that "[a] professional accountant in public practice who is auditor to a target company may be requested to act as lead adviser to a bidder on an offer subject to the City Code. […] if the bid is agreed, the professional accountant in public practice may be able to act or continue to act as lead adviser to the bidder with the agreement of the target and subject to the prior approval of the Takeover Panel. The professional accountant in public practice shall obtain confirmation from its clients that their interests would not be prejudiced if the professional accountant in public practice were to act or continue to act in both capacities."

where the bidder's advisor is also the target's auditor.[3] The regression results show a significant coefficient for the interaction term *AF advisor is target auditor* × *Target in low AQ industry*, consistent with investors perceiving dual roles of the advisor and target auditor as generating informational advantage when the target is of low reporting quality.

The knowledge of the acquirer's *auditor* may be useful for within-industry mergers, particularly in industries of low reporting quality, because in such transactions, the auditor has a competitive advantage in valuing the target.[4] To test this prediction, we include an indicator variable for whether the acquirer's auditor advised the bidder on a transaction, *AF advisor is acquirer auditor*, and interact it with the indicator variables for an intra-industry merger and with *Target in low AQ industry*. There are 189 horizontal mergers in which the bidder's auditor is also the deal advisor. The positive coefficient for the triple interaction term reported in model (3) is consistent with knowledge spillover from the auditing work benefiting the bidder.

Due diligence, which follows the public deal announcement, confirms the validity of the initial valuation. However, the discovery of "material adverse effects" during the due diligence process can lead to a revision in the offer price or bid withdrawal. Material adverse effect clauses allow the bidder to terminate the deal if specific events are triggered, which include economic or industry shocks and financial misreporting (Denis and Macias, 2013; Wangerin, 2019). If accounting firms are better at collecting and analyzing target information available *prior* to the public deal announcement, the risk of material information emerging during the due diligence process should be lower. Model (4) reports

[3] The small proportion of transactions where a bidder's advisor is also the target's auditor reflects that accounting firm advisors have to be careful in requesting information from target auditors as "[a] request from an acquiring partner for confidential client information from a target client partner is an ethically challenged request." Furthermore, an acquisition of the target results in a loss of future audit fees from the target and an accounting firm "may prefer acquisition bids to be withdrawn or to fail since the acquisition of a target client results in the loss of future fees and partner income for that partner or practice" (McKenna, 2015).

[4] Accounting firms must tread carefully when providing non-audit service to audit clients to mitigate conflicts arising from interest concerns (Hohenfels and Quick, 2018), however, legal rules do not prevent such a dual role. Under the EU Audit Legislation code, produced by the European Contact Group (ECG), auditors have been allowed to provide valuations and accounting consultations in connection with acquisitions, even since the EU Audit Reform in 2016 (see p. 64 of the February 2018 edition of the ECG FAQs). The European Contact Group is an informal regulatory and policy working group of six large audit networks in the EU (BDO, Deloitte, EY, Grant Thornton, KPMG and PwC).

the results for a sample of deals where the party carrying out the due diligence can be identified. The variable *Due diligence by advisor* indicates whether the advisor is also the party carrying out the due diligence. Due diligence should be particularly important in cases in which the target's reporting quality is low, and the positive interaction *AF advisor* × *Due diligence by advisor* × *Target in low AQ industry* supports this prediction. Our evidence suggests investors assess due diligence by the accounting firm advisor at lower risk to discover material events that would justify offer price revision or deal termination compared to investment-bank led due diligence.

Table C1. Bidder corporate governance quality and other measures of target valuation difficulty

The table reports additional regression results of acquirer announcement returns. In Panel A, Column *Bidder corporate governance* reports results when we augment equation (2) with measures of bidder corporate governance quality. *CEO-chairman separation* is an indicator variable equal to 1 if the CEO function is separate from the Chairman function, and 0 otherwise. *CEO Board Member* is an indicator for whether the CEO is board member. *Board size* is the total number of directors sitting on the board. *Target in high R&D industry* is an indicator variable for targets in high R&D industries. We follow Lev and Sougiannis (1996) and Hirschey, Richardson, and Scholz (2001) and define high R&D industries as those where the three-digit SIC code is in 357, 367, 382, 384, 283. *Target in low AQ industry*2 is an indicator variable equal to 1 if the target belongs to the top six industries with the lowest accruals quality, and 0 otherwise. We measure accruals quality by the standard deviation of the asset-scaled total accruals over a four-year period before the acquisition and then take the equal-weighted average across all publicly listed firms in a 2-digit SIC industry. *Target in low AQ industry3* is a re-calculated *Target in low AQ industry* at each target country level for a sample of the targets from the largest EU markets. Panel B reports equation (1) results augmented with target-specific measures of valuation difficulty. Panel C reports additional tests that examine the relation between bidders' price reaction to M&A announcements and accounting firms' characteristics.

Panel A: Further results	(1)		(2)		(3)		(4)	
	Bidder corporate governance		High R&D industry		Target in low AQ industry2		Target in low AQ industry3	
	Est	*p*	*Est*	*p*	*Est*	*p*	*Est*	*p*
Intercept	0.043	0.278	0.051	0.031	0.054	0.019	**0.056**	**0.021**
AF advisor	0.005	0.140	**0.004**	**0.026**	**0.004**	**0.068**	**0.005**	**0.018**
AF advisor with industry expertise in accounting	-0.006	0.454	−0.002	0.758	−0.001	0.901	-0.008	0.914
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.032**	**0.028**						
Target in low AQ industry	**-0.022**	**0.017**						
AF advisor with industry expertise in accounting × Target in high R&D industry			**0.017**	**0.060**				
Target in high R&D industry			0.001	0.882				
AF advisor with industry expertise in accounting × Target in low AQ industry2					**0.063**	**0.000**		
Target in low AQ industry2					**−0.008**	**0.024**		
AF advisor with industry expertise in accounting × Target in low AQ industry3							**0.065**	**0.077**
Target in low AQ industry3							**-0.008**	**0.064**
CEO-chairman separation	**0.011**	**0.063**						
CEO Board Member	0.001	0.727						
ln *Board size*	**-0.012**	**0.027**						
All controls	Yes		Yes		Yes		Yes	
Year and industry effects	Yes		Yes		Yes		Yes	
N	2856		8462		8462		5863	
p(*F*)	0.000		0.000		0.000		0.000	
R^2	6.76		6.79%		6.85%		6.16%	

(continued on next page)

Table C1 (continued)

Panel B: Controlling for public targets' characteristics	Target characteristics	
	Estimate	*p*
Intercept	**0.096**	**0.014**
AF advisor	0.001	0.984
AF advisor × Target total accruals	**0.182**	**0.070**
AF advisor × Target total accruals volatility	**0.177**	**0.089**
Target total accruals	**−0.045**	**0.048**
Target total accruals volatility	−0.039	0.272
ln *Target leverage*	0.001	0.662
ln *Target B/M*	−0.001	0.582
Number of Target advisors	0.001	0.493
Target loss dummy	−0.002	0.764
Target Common law	0.001	0.801
Target Ownership concentration	**−0.166**	**0.000**
Target High disclosure regulation	−0.014	0.555
Target Aggregate earnings management	**0.003**	**0.018**
All controls	Yes	
Year and industry effects	Yes	
N	960	
R^2	31.2%	

(continued on next page)

Table C1 (continued)

Panel C: Accounting firm characteristics	(1) Big 4 AF advisor		(2) AF advisor is target auditor		(3) AF advisor is acquirer auditor		(4) Due diligence	
	Estimate	*p*	*Estimate*	*p*	*Estimate*	*p*	*Estimate*	*p*
Intercept	**0.052**	**0.030**	**0.045**	**0.051**	**0.055**	**0.030**	**0.107**	**0.060**
AF advisor	**0.004**	**0.017**	0.006	0.142	0.003	0.181	0.006	0.375
AF advisor with industry expertise in accounting	−0.010	0.281			−0.007	0.481		
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.097**	**0.082**			**0.043**	**0.007**		
Target in low AQ industry	**−0.011**	**0.041**	**−0.007**	**0.046**	0.003	0.575	−0.012	0.540
Big 4	−0.005	0.494						
Big 4 × Target in low AQ industry	**0.036**	**0.015**						
AF advisor is target auditor			−0.001	0.811				
AF advisor is target auditor × Target in low AQ industry			**0.026**	**0.050**				
AF advisor is acquirer auditor					−0.001	0.932		
AF advisor is acquirer auditor × Intra industry merger × Target in low AQ industry					**0.050**	**0.002**		
Intra industry merger × Target in low AQ industry					**−0.013**	**0.026**		
AF advisor is acquirer auditor × Intra industry merger					0.006	0.612		
AF advisor is acquiror auditor × Target in low AQ industry					0.010	0.272		
Intra industry merger					−0.001	0.557		
Due diligence by advisor							**−0.151**	**0.000**
AF advisor × Due diligence by advisor							**0.143**	**0.000**
AF advisor × Due diligence by advisor × Target in low AQ industry							**0.066**	**0.007**
Deal controls	Yes		Yes		Yes		Yes	
Acquirer firm controls	Yes		Yes		Yes		Yes	
Acquirer country controls	Yes		Yes		Yes		Yes	
Year and industry effects	Yes		Yes		Yes		Yes	
N	8462		6436		8451		701	
p(*F*)	0.000		0.000		0.000		0.000	
R^2	6.79%		7.84%		6.67%		40.94%	

Appendix D: Addressing the endogeneity concern

There are two sources of potential endogeneity in the study. First, acquirers selecting accounting firm advisors may systematically differ from those selecting investment bank advisors, i.e. *the selection of treatment* in Hill *et al*. (2021) Figure 6 in Table 1. Second, there could be an error in measurement of target valuation difficulty or in identifying deals advised by accounting firms that correlates with the decision to appoint an accounting firm advisor and the price reaction to merger announcement, i.e. *measurement error* in Hill *et al*. (2021) Figure 4 in Table 1. This section discusses additional tests that address endogeneity originating from these two sources.

Selection of treatment

We use several approaches to address the endogeneity concern related to the selection of accounting firm advisors. First, we take advantage of an exogenous shock due to the International Financial Reporting Standards introduced in Europe. The IFRS standardized reporting across European markets facilitating comparison and valuation. If both the target and acquirer report under the IFRS, the benefit from appointing an accounting firm as advisor, as opposed to an investment bank, should be lower. The results for model (1) in Table D1 are consistent with this prediction.[1]

Second, we form a propensity score matched (PSM) sample, which matches acquirers hiring accounting firm advisors and those hiring investment bank advisors so that the acquirers are "not dissimilar". The method follows two steps. First, we use an advisor choice regression to estimate the probability of a bidder choosing an accounting firm advisor. The set of controls includes the four measures of target valuation difficulty we use for *Target valuation difficulty*, and controls from equation (1). We report the advisor choice regression results in Table D2 and confirm the Table 2 univariate evidence that accounting firms are more frequently selected to advise on transactions involving difficult-to-value targets. These transactions include targets from industries characterized

[1] In untabulated results, we also control for whether the bidder's country and the target's country have the same legal origin to capture low execution risk across more homogenous countries. We continue to find a lower benefit from hiring accounting firm advisors when both the target and the acquirer report under the IFRS, thus our result is unlikely to capture lower execution risk if the bidder and target countries are more homogenous.

by low accounting quality and deals targeting private, non-US, and smaller targets. The effect of target valuation proxies in predicting advisor choice is economically significant. To illustrate, the odds that an accounting firm will advise on an M&A transaction increase by 103.5% when the target is in a low accruals quality industry. The logistic regression also confirms that deals that require external financing, deals with more complex payment consideration, and transactions where there is a competitor bidder are more likely to be advised by an investment bank rather than an accounting firm. Investment banks should have a competitive advantage over accounting firms on such transactions. Thus, there is a separating equilibrium along the competitive advantage: accounting firms are more likely to advise on transactions where the valuation uncertainty and related risk of overpayment is high; bidders are more likely to choose an investment bank to advise on transactions where securing external financing is important.

The predicted value of the advisor choice regression constitutes the propensity score, which we then use for matching investment-bank-advised deals to accounting-firm-advised deals. The mean difference in the predicted probability between the treatment (deals advised by accounting firms) and the control sample (matched deals advised by investment banks) is 0.02%, and we report statistics for the quality of matching on individual covariates in Panel B of Table D2. In untabulated results, we find that the univariate difference in CARs for the accounting-firm-advised deals and the PSM matched sample of investment bank deals is 0.69% (2.02% vs. 1.33%). We then re-estimate the acquirer return regression to control for residual differences in covariates as suggested by Shipman *et al.* (2017). Panel C of Table D2 confirms there are more positive price reactions for deals where the target is in an industry with low accounting quality and the accounting firm is an audit specialist for that industry. Propensity score results help to rule out several alternative explanations, e.g. that the results are driven by the small percentage of competed deals, by smaller deals that may be associate with higher returns or deals that do not require external financing.

Third, we use a treatment-effects model. Specifically, following Heckman (1997) and Wooldridge (2010, pp. 911–913), we calculate the regression-adjusted average treatment effect on the treated firms. The approach uses a regression model to predict potential outcomes adjusted for covariates

from equation (1). In untabulated results, we find that transactions advised by accounting firms have on average 0.4% higher price reactions compared to the same transactions had they been advised by investment banks.

Fourth, we run a placebo test that substitutes the bidder for the target accounting quality. The accounting knowledge about the *acquirer* should not, on average, facilitate the *target's* valuation task, thus the interaction term between accounting firm target specialist status and acquirer reporting quality should be zero. Because we keep the observable and unobservable bidder and target characteristics constant, any correlations they have with the accounting firm specialist status remain unchanged. Thus, the placebo test should produce similar results to our main test if selectivity in deals advised by accounting firms explained our evidence. We measure acquirer's accounting quality by the volatility of the total accruals scaled by the total assets over the four years prior to the acquisition, *Acquirer low AQ.* Model (1) in Table D3 documents an insignificant coefficient for the interaction term between advisor's audit specialist status of the target's industry and *acquirer* accounting quality. This result is consistent with the accounting advisor's knowledge about the target, rather than about the acquirer, helping to value the target.

Finally, to address the concern that correlated omitted variables could have affected our conclusion, we follow the approach by Altonji *et al.* (2005) and Nunn and Wantchekon (2011) and test by how much the coefficient on *AF advisor with industry expertise in accounting* × *Target in low AQ industry* changes compared with a model without control variables. If the change in coefficients between the full and restricted models is substantial, then it is more likely that adding additional controls would reduce the estimated coefficient and eliminate our finding. The difference in coefficients between the two models is less than 0.004, thus the selection on unobservables would have to be over 26 times greater than that on observables to explain our result.[2] This result suggests that omitted variables are unlikely to explain the effect we document. In sum, the results from the

[2] As in Nunn and Wantchekon (2011), we calculate the ratio of the coefficient on *AF advisor with industry expertise in accounting* × *Target in low AQ industry* from equation (1) scaled by the difference between this coefficient and the same coefficient from the restricted model.

tests that address the endogeneity concern originating from selectivity in deals advised by accounting firms provide consistent support for our conclusion that investors react more positively to M&A transactions with targets of low accounting quality advised by accounting firms.[3]

Measurement error

Our main tests use several measures for target reporting quality to minimize the likelihood this source of measurement error affects our conclusions. Here, we present two additional tests to address the measurement error concern related to identifying deals advised by accounting firms and competitors of accounting firms.

First, similar to past approaches for classifying transactions (Servaes and Zenner, 1996; Rau, 2000; Golubov *et al.*, 2012), we consider a transaction to be advised by an accounting firm if the accounting firm is either the sole advisor or part of a syndicate. To ensure the robustness of our results, we re-do the analysis for deals with single advisors, and model (2) of Table D3 documents that our conclusions are unchanged for this subsample. This result is unsurprising because accounting firms tend to advise on mid- and small-level transactions, which frequently have only one advisor (close to 66% of transactions advised by accounting firms have only one advisor).

Second, accounting firms do not always compete with top investment banks for M&A assignments (Indap, 2015), and Rau (2000), Cornaggia and Rau (2002), and Ismail (2010) document that hiring top-tier advisors is associated with less favorable deal outcomes.[4] Thus, the sample of non-treated firms may be biased towards lower quality deals. Model (3) of Table D3 reports results for a sample that excludes top-tier investment banks using the classification from Fang (2005) and Golubov *et al.* (2012), and shows our conclusions remain unchanged.

[3] In untabulated results, we find that our result of higher price reaction to deals advised by accounting firms persists if we remove (i) the small proportion of competed deals, (ii) hostile deals, (iii) deals that require external financing, and (iv) deals where the accounting firm is target auditor. Thus, our conclusions are not driven by these subsamples.

[4] Accounting firms compete primarily with boutique investment banks, but increasingly with top investment banks: "the bulk of all M&A are smaller assignments that occur at a steadier pace," and large investment banks have been competing in this space "as a hedge against the erratic flow of blockbuster transactions" (Indap, 2015). Thomson Reuters 2014–2018 rankings for the mid-market and small-cap M&As continuously feature top investment banks.

Table D1 A quasi-natural experiment related to the introduction of IFRS

The table reports regression results for equation (2) augmented with indicator variables for whether the bidder (target) reports under International Financial Reporting Standards, *Acquirer IFRS* (*Target IFRS*).

	Estimate	*p*
Intercept	**0.055**	**0.032**
AF advisor	**0.008**	**0.006**
AF advisor with industry expertise in accounting	−0.011	0.328
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.103**	**0.040**
Target in low AQ industry	**−0.008**	**0.051**
AF advisor × Acquirer IFRS× Target IFRS	**−0.006**	**0.002**
Acquirer IFRS × Target IFRS	−0.005	0.224
All controls	Yes	
Year and industry effects	Yes	
N	5261	
R^2	7.27%	

Table D2 Predicting the bidder's choice of accounting firm advisor and PSM results

Panel A reports the results of the advisor choice analysis for the acquirer. The dependent variable *AF advisor* takes the value of 1 if the acquirer has chosen an accounting firm advisor in the M&A deal, and 0 otherwise. The explanatory variables are from equation (1). Panel B documents the quality of matching and Panel C reports regression results of acquirer announcement returns using the propensity-scored-matched (PSM) sample.

	Estimate	% change in odds	*p*
Panel A: Type of advisor chosen by acquirers: accounting firm vs. investment bank advisor			
Intercept	**-1.230**		**0.007**
Target in low AQ industry	**0.757**	**103.5**	**0.066**
Private target	**0.461**	**54.5**	**0.000**
Non-US target	**0.340**	**42.6**	**0.010**
Deal value	**-0.499**	**-38.6**	**0.000**
Financing required	-0.114	-4.6	0.446
Cash offering	-0.023	-9.3	0.789
Number of considerations	-0.035	-2.9	0.588
Returning acquirer advisor	**-0.384**	**-4.3**	**0.002**
Percentage of shares sought	**0.012**	**-27.7**	**0.000**
Number of acquirer advisors	**0.182**	**1.2**	**0.002**
Hostile deal	-0.450	15.6	0.346
Competed deal	**-2.887**	**-36.2**	**0.003**
Domestic	-0.030	-94.3	0.800
Family owned target	-0.476	-34.3	0.437
Cross-industry mergers	0.093	5.5	0.293
ln *Acquirer size*	**0.085**	**6.4**	**0.066**
ln *Acquirer B/M*	0.062	4.6	0.105
ln *Acquirer leverage*	0.078	-20.5	0.731
Acquirer stock momentum	0.158	15.8	0.542
Acquirer stock volatility	-0.216	-22.8	0.322
Common law	**0.832**	**98.6**	**0.000**
Ownership concentration	1.508	48.7	0.195
High disclosure regulation	**-2.169**	**-84.5**	**0.001**
Aggregate earnings management	-0.012	1.3	0.691
More aggregate earnings management	0.151	14.1	0.201
Year and industry effects	Yes		
N	8462		
p(Wald X^2)	0.000		
Pseudo R^2	12.54%		

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Table D2 (continued)

	Treatment sample mean	Control sample mean	p-value for difference
Panel B: Propensity score matching quality			
A. Valuation uncertainty			
Target in low AQ industry	0.045	0.041	0.690
Private target	0.415	0.418	0.913
Non-US target	0.886	0.900	0.385
Deal value ($mil)	278.9	316.6	0.401
B. Deal value, financing, and method of payment			
Financing required	0.156	0.182	0.197
Cash offering	0.415	0.386	0.273
Number of considerations offered	1.428	1.424	0.908
C. Past relation with the advisor			
Returning acquirer advisor	0.334	0.342	0.776
D. Other deal characteristics			
Percentage of shares sought	89.918	88.472	0.256
Number of acquirer advisors	1.524	1.621	0.299
Hostile deal	0.003	0.004	0.654
Competed deal	0.000	0.000	1.000
Domestic	0.504	0.525	0.420
Family owned target	0.003	0.001	0.564
Cross-industry merger	0.283	0.276	0.310
E. Acquirer characteristics			
Acquirer size	4631.7	5011.6	0.425
Acquirer B/M	0.675	0.668	0.846
Acquirer leverage	0.165	0.164	0.921
Acquirer stock momentum	0.090	0.079	0.497
Acquirer stock volatility	0.107	0.106	0.864
F. Country characteristics (Acquirer)			
Common law	0.508	0.505	0.914
Ownership concentration	0.200	0.290	0.995
Disclosure regulation	0.694	0.693	0.824
Aggregate earnings management	12.136	12.077	0.869
G. Country characteristics (Target)			
More aggregate earnings management	0.169	0.165	0.829

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Table D2 (continued)

	PSM	
Panel C: Bidder price reaction regression results using the PSM sample	*Estimate*	*p*
Intercept	0.026	0.346
AF advisor	**0.009**	**0.070**
AF advisor with industry expertise in accounting	**−0.015**	**0.010**
AF advisor with industry expertise in accounting × *Target in low AQ industry*	**0.119**	**0.029**
Target in low AQ industry	0.000	0.975
All controls	Yes	
Year and industry effects	Yes	
N	1382	
R^2	9.27%	

Table D3 Additional tests addressing endogeneity

The table reports additional regression results of acquirer announcement returns. Column "Placebo test" reports results from a placebo test that substitutes bidder's for target's accounting quality. *Acquirer low AQ* is acquirer's accounting quality measured by the volatility of total accruals scaled by total assets over four years prior to the acquisition. Column "Single advisor" reports equation (2) results for deals with a single advisor. Column "Boutique IBs" documents results for a sample that excludes deals advised by top top-tier investment banks using the classification from Fang (2005) and Golubov *et al.* (2012).

	(1) Placebo test		(2) Single advisor		(3) Boutique IBs	
	Estimate	*p*	*Estimate*	*p*	*Estimate*	*p*
Intercept	**0.035**	**0.013**	0.036	0.198	**0.064**	**0.000**
AF advisor	0.007	0.271	**0.008**	**0.007**	**0.005**	**0.054**
AF advisor with industry expertise in accounting	−0.002	0.825	−0.008	0.225	-0.006	0.166
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.181**	**0.000**	**0.035**	**0.005**	**0.097**	**0.002**
Target in low AQ industry	−0.003	0.612	−0.004	0.372	**-0.009**	**0.061**
AF advisor with industry expertise in accounting × Acquirer low AQ	−0.028	0.802				
Acquirer low AQ	−0.016	0.309				
All controls	Yes		Yes		Yes	
Year and industry effects	Yes		Yes		Yes	
N	4661		4502		5261	
R^2	10.31%		6.48%		7.28%	

Appendix E: Can investment banks replicate the advantages of accounting firms?

This section examines if investment banks can replicate the competitive advantage of accounting firms in advising on deals with difficult-to-value targets. The first test considers the advisory specialization of an investment bank. Specifically, we include an indicator variable for top-tier investment banks using the classification from Fang (2005) and Golubov *et al.* (2012), *Top IB*, and its interaction with the indicator variable *Target in low AQ industry*. The results for model (1) in Table E1 show an insignificant coefficient for this interaction term, suggesting that investors do not perceive top investment banks to have a competitive advantage in advising on such transactions. To sharpen this analysis, we also include an indicator variable for whether the advisor completed the most M&A transactions in the target's industry over the previous three years, *Advisor is industry specialist*. We then interact the industry specialist status of the advisor with the target reporting quality measure. The interaction term tests whether the investment bank advisors can develop valuation expertise similar to the accounting firms. We do not find evidence that investors react more positively to specialist advisors when the target is in a low accrual quality industry. Together, the results corroborate the view that understanding accruals is a unique strength of accounting firms that is not shared by even top-tier investment banks or specialist advisors.

Investment banks may create advisory teams to better cope with transactions involving difficult-to-value targets. Advisory syndicates can reduce the costs of information acquisition and efficiently leverage on individual member's expertise (Grullon *et al.*, 2014). Model (2) in Table E1, interacts the size of the syndicate with *Target in low AQ industry*; however, the coefficient for the interaction term is negative. A triple interaction with an indicator for the top investment bank is not significant, which suggests that even including a large reputable investment bank in an advisory team does not overcome the challenges related to target valuation. However, pairing an investment bank with an accounting firm generates positive price reactions for deals involving a difficult-to-value target. This result suggests that advisory teams benefit from the competitive strength of accounting firms.

Table E1 Advisory specialization and advisory team characteristics

The table reports results from tests that examine investment bank specialization.

	(1) Advisory specialization		(2) Team characteristics	
	Estimate	*p*	*Estimate*	*p*
Intercept	**0.054**	**0.028**	**0.055**	**0.023**
AF advisor	**0.005**	**0.016**	0.003	0.118
AF advisor with industry expertise in accounting	−0.011	0.276		
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.100**	**0.076**		
Target in low AQ industry	−0.008	0.211	0.011	0.125
Top IB	0.001	0.362		
Top IB × Target in low AQ industry	0.001	0.938		
Advisor is industry specialist	0.000	0.928		
Advisor is industry specialist × Target in low AQ industry	−0.014	0.429		
Number of acquirer advisors			−0.002	0.236
Number of acquirer advisors × Target in low AQ industry			**−0.015**	**0.007**
Number of acquirer advisors × Target in low AQ industry × Top IB			0.004	0.433
Number of acquirer advisors × Target in low AQ industry × AF advisor			**0.025**	**0.036**
Deal controls	Yes		Yes	
Acquirer firm controls	Yes		Yes	
Acquirer country controls	Yes		Yes	
Year effects	Yes		Yes	
Industry effects	Yes		Yes	
N	8462		8462	
R^2	6.75%		6.75%	

Appendix F: Goodwill impairment and deal completion rates

This section presents two further tests consistent with accounting firms reducing the overpayment risk.

Goodwill impairment

As an alternative test for whether accounting firms can reduce the overpayment risk, we examine the likelihood of post-acquisition goodwill impartment. Goodwill is the part of the purchase price exceeding the fair market value of identifiable assets of the target. If the goodwill recognized from M&A transactions is driven by overpricing, it will have a greater chance of being impaired when the overpricing becomes clear to investors and managers over time. IFRS requires goodwill to be tested at least annually for impairment. Such goodwill impairment, however, is less likely if accounting firms' expertise helps prevent overpricing. Consistently, Panel A of Table F1 shows that the likelihood of experiencing goodwill impairment shortly after the transaction is 25.77% lower among the combined firms from accounting-firm-advised deals than from investment-bank-advised deals. Using PSM-matched sample, we find 26.02% lower likelihood of goodwill impairment for deals advised by accounting firms compared to investment-bank advised transactions.

Deal completion rates

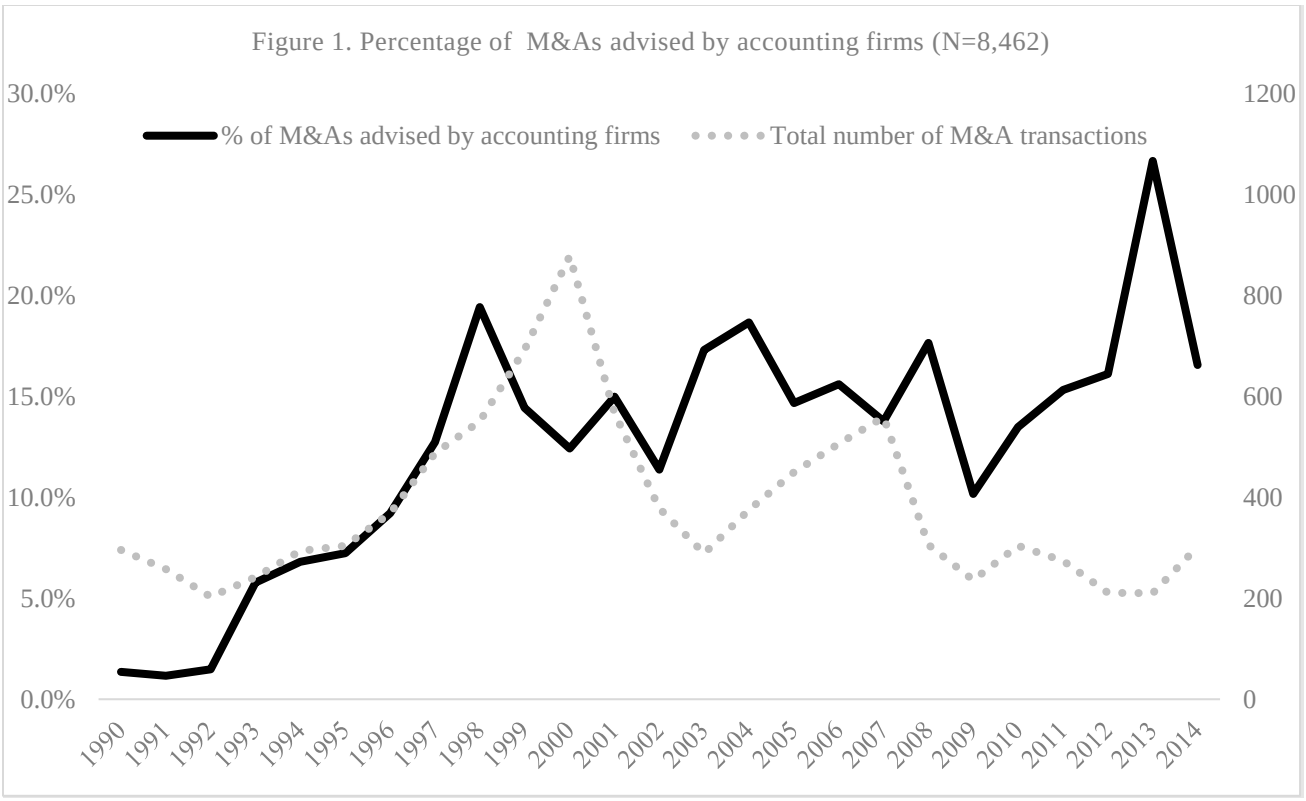
Our evidence suggests that acquirers bid closer to the target's reservation price on deals with hard-to-value targets when such transactions are advised by accounting firms compared to investment banks. However, low offer premia may reflect underbidding when the offer price often falls short of the target's minimum acceptable price. To exclude this possibility, we examine completion rates for deals advised by accounting firms, as underbidding should be associated with significantly larger deal failure rates. Deal failures lead to reputational costs for the managerial team, such as forced bidder firm CEO departure (Lehn and Zhao, 2006) and negative market reactions (Jacobsen, 2014; Davidson, Dutia, and Cheng, 1989). Panel B of Table F1 reports that deals advised by accounting

firms have significantly higher completion rates than transactions advised by investment banks for the full sample and the PSM-matched sample.

Table F1 Future goodwill impairment likelihood and offer withdrawal rates

Panel A reports the fraction of the combined firms reporting goodwill impairment within five years after the transactions as in Fich, Rice, and Tran (2016) for the pooled sample (1419 non-missing observations) and the PSM sample (80 non-missing observations). Panel B reports the proportion of withdrawn offers.

	N	Mean	S.E.	*z*
Panel A: Future goodwill impairment likelihood				
Full sample:				
Accounting firm advisor	40	**55.00%**	7.97%	**6.9**
Investment bank advisor	1379	**74.09%**	1.16%	**64.07**
% diff.		**−25.77%**	8.05%	**−2.37**
PSM sample:				
Accounting firm advisor	40	**52.50%**	8.00%	**6.57**
Investment bank advisor	40	**70.97%**	5.81%	**12.21**
% diff.		**−26.02%**	9.89%	**−1.87**
Panel B: Offer withdrawal rates				
Full sample:				
Accounting firm advisor	691	0.14%	0.14%	1.00
Investment bank advisor	7771	**7.29%**	0.29%	**24.73**
% diff.		**4944%**	0.33%	**−21.76**
PSM sample:				
Accounting firm advisor	691	0.14%	0.14%	1.00
Investment bank advisor	691	2.60%	0.61%	**4.30**
% diff.		**1700%**	0.62%	**−3.95**



The figure reports the total number of M&A transactions over the period 1990–2014 and the percentage of M&A transactions advised by accounting firms.

Table 1 Variable definitions of the main variables used

Variable	Definition
Target valuation uncertainty measures	
Target in low AQ industry	An indicator variable equal to 1 if the target belongs to the top two industries with the lowest accruals quality, and 0 otherwise. We measure accruals quality by the standard deviation of the asset-scaled total accruals over a four-year period before the acquisition and then take the equal-weighted average across all publicly listed firms in a 2-digit SIC industry.
Target in high Jones residual STD industry	An indicator variable that equals 1 if the target is in top two industries with the highest equal-weighted average volatility of residuals estimated from the Jones (1991) model using five years of data for each firm and minimum of 10 firms per industry, and 0 otherwise.
Target in high qualified opinion industry	An indicator variable taking value of 1 if the target is in the top quartile of industries with the highest number of qualified opinions, and 0 otherwise. We count the number of qualified opinions annually for each two-digit SIC code industry.
Private target	An indicator variable equal to 1 if the target is a private firm and 0 otherwise.
Non-US target	An indicator variable equal to 1 if the target is not incorporated in the US and 0 otherwise.
Deal value	The market value of the shares sought in the M&A deal expressed in USD million using the exchange rate at the end of the month preceding the transaction.
Target valuation difficulty	An index measure from the principal component analysis of target's valuation uncertainty proxies: *Target in low AQ industry*, *Target in high Jones residual STD industry*, *Target in high qualified opinion industry*, *Private target*, *Non-US target*, and an indicator variable for small targets, which includes targets in the bottom quintile ranked on deal size.
Target valuation difficulty2	*Target valuation difficulty* recalculated removing *Target in low AQ industry*, *Target in high Jones residual STD industry*, *Target in high qualified opinion industry.*
Accounting advisor characteristics	
Big 4	An indicator variable equal to 1 if the accounting firm advisor is a Big 4 auditor and 0 otherwise.
AF advisor is target auditor	An indicator variable equal to 1 if the accounting firm advisor is also target's auditor and 0 otherwise.
AF advisor is acquirer auditor	An indicator variable equal to 1 if the accounting firm advisor is also acquiror's auditor and 0 otherwise.
Due diligence by advisor	An indicator variable equal to 1 if the advisor is responsible for target's due diligence and 0 otherwise.
Deal and target characteristics	
AF advisor	An indicator variable equal to 1 if the acquirer advisor is an accounting firm and 0 otherwise
AF advisor with industry expertise in accounting	An indicator variable equal to 1 if the acquirer advisor is an accounting firm whose parent audit firm has expertise as an audit-specialist of the target's industry and 0 otherwise. An industry audit-specialist is defined analogously according to the largest-industry-market-share definition in (Gul *et al.*, 2009), with the market shares defined based on audit clients' total assets. We calculate the measure each year for each market.
Percentage of shares sought	The percentage of target shares the bidder seeks to acquire (1 = 100%).
Hostile deal	An indicator variable equal to 1 if the board officially rejects the offer but the acquirer persists with the takeover and 0 o/w.
Competed deal	An indicator variable equal to 1 if a third party launched an offer for the target while the original bid was pending and 0 o/w.
Domestic	An indicator variable equal to 1 if the target is incorporated in the same country as the acquirer and 0 otherwise.
Financing required	An indicator variable equal to 1 if the source of funding for the transaction is either borrowing, bridge loan, common stock issue, debt issue, junk bond issue, mezzanine financing, rights issue, staple offering, or preferred stock, and 0 otherwise.
Number of considerations	The number of securities used in the payment for target's stock.

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Table 1 (continued)

Cash offering	An indicator variable equal to 1 if the transaction payment method is cash and 0 otherwise.
Number of acquirer advisors	The number of financial advisors advising the acquirer in the M&A deal.
Returning acquirer advisor	An indicator variable equal to 1 if the acquirer's advisors advised the acquirer in a prior M&A deal and 0 otherwise. We search for past M&A transactions over a three-year period.
Cross-industry merger	A variable equal to 1 if the acquirer and target are in different industry of Fama-French 10-industry classification and 0 o/w.
Offer premium	The ratio, in percentage, of the bid price per share to the target's closing stock price 1 day prior to announcement less 1.
Top IB	A variable equal to 1 for top-tier investment banks classified by Fang (2005) and Golubov *et al.* (2012) and 0 otherwise.
Advisor is industry specialist	A variable equal to 1 if the advisor completed the most M&A transactions in the target's industry over prior 3 years; 0 o/w.
Industry effects	Acquirer's industry dummy variables based on the two-digit SIC code.
Year effects	Year dummy variables for the M&A deal announcement year.
Acquirer characteristics	
Acquirer size	Acquirer's market capitalization measured at the end of the fiscal year before the M&A deal date and expressed in USD millions using the exchange rate at the end of the month preceding the transaction.
Acquirer B/M	Acquirer's book value of equity to market value of equity ratio at the fiscal year end (FYE) prior to the M&A deal.
Acquirer leverage	Acquirer's ratio of long-term debt to average assets at the FYE prior to the M&A deal.
Acquirer stock momentum	Acquirer's buy-and-hold stock returns for 90-days prior to the previous FYE.
Acquirer stock volatility	Stock price standard deviation measured over 90-days before the prior FYE, scaled by the mean price level over this period.
Family owned target	An indicator variable equal to 1 if a family or group of families controls at least 20% of the target and 0 otherwise.
Targets' CARs	Targets' CARs (−2, 2) calculated around the deal announcement.
Country characteristics (Acquirer and Target)	
Common law	A variable equal to 1 if the legal system of the bidder country originates from the UK common law system and 0 otherwise.
Ownership concentration	Ownership concentration index of the acquirer's country of incorporation, which is the median proportion of common shares owned by the three largest shareholders in the ten largest privately owned nonfinancial firms.
High disclosure regulation	A measure for the bidder's country based on Hope's (2003) country disclosure score for disclosure regulation quality.
Aggregate earnings management	An aggregate score of the earnings management activities of the nonfinancial firms in the acquirer's country of incorporation.
More aggregate earnings management	A variable equal to 1 if the target country's aggregate earnings management score (Leuz *et al.* 2003) is above the bidder country's and 0 otherwise.

Table 2 Descriptive statistics

The table presents the descriptive statistics of the variables used in the analysis. All variables are defined in table 1.

	(1) Accounting firm acquirer advisor (N = 691)			(2) Investment bank acquirer advisor (N =7,771)			(1) - (2) Difference in mean	
	Mean	Median	S.D.	Mean	Median	S.D.	% diff.	*t/z*
A. Valuation uncertainty								
Target in low AQ industry	0.045	0.000	0.207	0.032	0.000	0.176	**40.0%**	**146.58**
Target in high Jones residual STD industry	0.072	0.000	0.259	0.046	0.000	0.207	**58.6%**	**2.636**
Target in high qualified opinion industry	0.213	0.000	0.409	0.184	0.000	0.388	**15.72%**	**1.79**
Target valuation difficulty	0.782	0.870	0.496	0.417	0.240	0.376	**87.4%**	**138.48**
Private target	0.415	0.000	0.493	0.183	0.000	0.387	**126.9%**	**200.26**
Non-US target	0.886	1.000	0.318	0.823	1.000	0.382	**7.6%**	**15.91**
Deal value	278.530	46.468	768.769	1997.150	364.920	4684.350	−86.1%	−0.02
Deal value / Acquirer size	0.532	0.066	2.272	0.640	0.152	2.060	**−16.8%**	**−5.50**
B. Deal value, financing, method of payment and past relation with the advisor								
Financing required	0.156	0.000	0.363	0.233	0.000	0.423	**−32.9%**	**−60.97**
Cash offering	0.416	0.000	0.493	0.415	0.000	0.493	0.2%	0.29
Number of considerations offered	1.428	1.000	0.684	1.465	1.000	0.747	**−2.6%**	**−2.60**
Returning acquirer advisor	0.337	0.000	0.473	0.490	0.000	0.500	**−31.3%**	**−46.47**
D. Other deal characteristics								
Percentage of shares sought	89.933	100.000	22.554	84.086	100.000	27.513	7.0%	0.20
Number of acquirer advisors	1.523	1.000	0.902	1.874	1.000	1.233	**−18.7%**	**−12.88**
Hostile deal	0.003	0.000	0.054	0.020	0.000	0.140	**−85.6%**	**−632.69**
Competed deal	0.000	0.000	0.000	0.047	0.000	0.213	**−100.0%**	**−540.70**
Domestic	0.503	1.000	0.500	0.424	0.000	0.494	**18.7%**	**26.87**
Family owned target	0.003	0.000	0.054	0.005	0.000	0.072	**−43.8%**	**−512.69**
Cross-industry merger	0.283	0.000	0.451	0.224	0.000	0.417	**26.3%**	**3.54**
E. Acquirer characteristics								
Acquirer size	4553.950	849.761	8317.050	8699.100	3390.390	11030.430	−47.7%	0.00
Acquirer B/M	0.691	0.481	0.743	0.698	0.493	0.851	−0.9%	−0.86
Acquirer leverage	0.163	0.137	0.156	0.186	0.155	0.160	**−12.6%**	**−57.51**
Acquirer stock momentum	0.083	0.043	0.292	0.122	0.067	0.398	**−31.7%**	**−67.36**
Acquirer stock volatility	0.105	0.059	0.161	0.122	0.056	0.195	**−13.6%**	**−55.94**

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Table 2, continued

F. Country characteristics Acquirer and Target								
Common law	0.509	1.000	0.500	0.396	0.000	0.489	**28.6%**	**41.37**
Ownership concentration	0.290	0.195	0.166	0.305	0.240	0.162	**−4.8%**	**−20.86**
High disclosure regulation	0.695	0.792	0.160	0.684	0.750	0.155	**1.5%**	**7.01**
Aggregate earnings management	12.129	7.000	6.664	13.136	13.500	6.615	−7.7%	−0.83
More aggregate earnings management	0.171	0.000	0.376	0.162	0.000	0.369	**5.1%**	**9.82**

Table 3 Acquirer announcement-period CAR

Panel A reports the average acquirer CARs partitioned by the accounting firm and investment bank advised deals. *N* is the number of observations, *Mean* the mean value, *S.E.* are the standard errors and *t* is the two-tailed *t*-test. Panel B shows equation (1) regression results. The dependent variable is the acquirer CAR calculated for the five days (−2, 2) around the announcement (day 0) of an acquisition deal, adjusted for the market return based on the stock market index of the acquirer's country of incorporation. The other explanatory variables are defined in table 1. Panel C reports equation (2) regression results. *F* is the F-statistic for the model specification and *p*(*F*) is the corresponding *p*-value. R^2 is the R-squared.

Panel A: Descriptive statistics	*N*	*Mean*	*S.E.*	*t*
Full sample:				
Accounting firm advisor	691	**2.02%**	0.32%	**6.40**
Investment bank advisor	7771	**0.92%**	0.08%	**11.78**
% diff.		**118.4%**	0.32%	**3.37**

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Table 3 (continued)

Panel B: Regression results	(1) Baseline model		(2) Full model		(3) Full model with the index measure		(4) Jones residuals		(5) Qualified opinions	
	Est	*p*	*Est*	*p*	*Est*	*p*	*Est*	*p*	*Est*	*p*
Intercept	**0.057**	**0.025**	**0.058**	**0.022**	**0.057**	**0.000**	**0.047**	**0.000**	**0.048**	**0.000**
AF advisor	**0.004**	**0.088**	0.002	0.319	−0.004	0.374	0.003	0.292	0.003	0.199
Target in low AQ industry	**-0.006**	**0.044**	**-0.011**	**0.006**						
AF advisor × *Target in low AQ industry*			**0.039**	**0.000**						
Target valuation difficulty					**−0.008**	**0.020**				
AF advisor × *Target valuation difficulty*					**0.015**	**0.031**				
Target in high Jones residual STD industry							**-0.006**	**0.025**		
AF advisor × *Target in high Jones residual STD industry*							**0.008**	**0.025**		
Target in high qualified opinion industry									**-0.004**	**0.039**
AF advisor × *Target in high qualified opinion industry*									**0.004**	**0.081**
Deal controls	Yes		Yes		Yes		Yes		Yes	
Acquirer firm controls	Yes		Yes		Yes		Yes		Yes	
Acquirer country controls	Yes		Yes		Yes		Yes		Yes	
Year effects	Yes		Yes		Yes		Yes		Yes	
Industry effects	Yes		Yes		Yes		Yes		Yes	
N	8462		8462		6568		8451		8451	
p(*F*)	0.000		0.000		0.000		0.000		0.000	
R^2	6.81%		6.94%		6.33%		5.48%		5.45%	

(continued on next page)

Table 3 (continued)

Panel C: The effect of accounting expertise	(1) Low AQ industry		(2) Jones residuals		(3) Qualified opinions	
	Est	*p*	*Est*	*p*	*Est*	*p*
Intercept	**0.057**	**0.024**	**0.046**	**0.000**	**0.045**	**0.000**
AF advisor	**0.004**	**0.024**	0.005	0.182	0.004	0.144
AF advisor with industry expertise in accounting	-0.007	0.459	−0.003	0.662	−0.008	0.429
AF advisor with industry expertise in accounting × Target in low AQ industry	**0.098**	**0.052**				
Target in low AQ industry	**-0.009**	**0.034**				
AF advisor with industry expertise in accounting × Target in high Jones residual STD industry			**0.055**	**0.081**		
Target in high Jones residual STD industry			**−0.007**	**0.021**		
AF advisor with industry expertise in accounting × Target in high qualified opinion industry					**0.028**	**0.090**
Target in high qualified opinion industry					**−0.005**	**0.016**
Deal controls	Yes		Yes		Yes	
Acquirer firm controls	Yes		Yes		Yes	
Acquirer country controls	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	
Industry effects	Yes		Yes		Yes	
N	8462		6568		8451	
p(*F*)	0.000		0.000		0.000	
R^2	6.99%		6.17%		5.56%	

Table 4 Offer premium

Panel A reports the average offer premium partitioned by the type of advisor. Panel B shows the offer premium regressions. The dependent variable is the offer premium defined as (the ratio of the bid price per share to the target's closing stock price 1 day prior to announcement – 1) × 100. Controls are from equation (1). N is the number of observations. *F* is the F-statistic for the model specification and *p*(*F*) is the corresponding *p*-value. R^2 is the R-squared.

Panel A: Descriptive statistics	N	Mean	S.E.	*t*
Full sample:				
Accounting firm advisor	64	**25.46%**	2.36%	**10.78**
Investment bank advisor	2655	**29.56%**	0.49%	**60.39**
% diff.		**−13.88%**	2.41%	**−1.70**

Panel B: Regression results	(1)		(2)	
	Baseline		Industry expertise on accounting	
	Estimate	*p*	*Estimate*	*p*
Intercept	**0.313**	**0.000**	**0.311**	**0.000**
AF advisor	**−0.034**	**0.053**	**−0.050**	**0.031**
AF advisor with industry expertise in accounting			**0.116**	**0.077**
AF advisor with industry expertise in accounting × *Target in low AQ industry*			**−0.112**	**0.094**
Target in low AQ industry	**0.392**	**0.000**	**0.393**	**0.000**
Deal controls	Yes		Yes	
Acquirer firm controls	Yes		Yes	
Acquirer country controls	Yes		Yes	
Year effects	Yes		Yes	
Industry effects	Yes		Yes	
N	2719		2719	
p(*F*)	0.000		0.000	
R^2	17.99%		18.06%	

Table 5 Merger synergies, target price reactions and post-merger performance

Column *Merger synergie*s in Panel A reports results for equation (1) where the dependent variable is total merger synergies calculated as the CAR of a value-weighted portfolio of the bidder and the target with the weights based on their respective market capitalizations before merger announcements. Column *Bidder synergy share* reports results for the bidder share of total synergies. Column *Target CAR* shows results for the public bidders' price reaction to merger announcement. Panel B reports results for equation (1) where the dependent variable is bidder's long-run post-merger abnormal return.

Panel A: Synergies and target CARs	(1) Merger synergies		(2) Bidder synergy share		(3) Target CAR	
	Estimate	*p*	*Estimate*	*p*	*Estimate*	*p*
Intercept	0.080	0.201	**0.034**	**0.057**	0.087	0.881
AF advisor	0.015	0.190	**0.003**	**0.037**	**−0.027**	**0.000**
Deal controls	Yes		Yes		Yes	
Acquirer firm controls	Yes		Yes		Yes	
Acquirer country controls	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	
Industry effects	Yes		Yes		Yes	
N	1027		1027		1056	
p(F)	0.000		0.000		0.000	
R^2	21.91%		38.99%		34.19%	

Panel B: Bidder's post-merger long-run performance	(1) 6 months		(2) 1 year		(3) 3 years		(4) 5 years	
	Estimate	*p*	*Estimate*	*p*	*Estimate*	*p*	*Estimate*	*p*
Intercept	**0.002**	**0.001**	0.000	0.789	0.000	0.513	0.000	0.943
AF advisor	**0.000**	**0.099**	0.000	0.469	0.000	0.442	0.000	0.417
Deal controls	Yes		Yes		Yes		Yes	
Acquirer firm controls	Yes		Yes		Yes		Yes	
Acquirer country controls	Yes		Yes		Yes		Yes	
Year effects	Yes		Yes		Yes		Yes	
Industry effects	Yes		Yes		Yes		Yes	
N	8462		8462		8462		8462	
p(*F*)	0.000		0.000		0.000		0.000	
R^2	3.44%		3.34%		3.34%		3.33%	