LUND UNIVERSITY
School of Economics and Management

Dual Role Advisors in Acquisitions:

Examining the Effect on Shareholder Value

Master Thesis

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Master's Programme in Corporate & Financial Management
Lund University School of Economics & Management

Lund, May 2015

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ABSTRACT

This study examines the effect of dual role advisors in acquisitions on shareholder value creation for both the acquirer and target. Dual role advisors are advisors that provide both advisory services to either the acquirer or target and are involved in underwriting or syndicating securities issued to finance the deal. Previous studies find that being a dual role advisor can create a conflict of interest in which the investment bank's advice to either the acquirer or target is impacted by the bank's desire to obtain financing fees from financing the transaction. Our study contributes to the existing literature by studying the effect of both acquirer and target advisors in dual roles on shareholder value creation and by analyzing how the amount of proceeds of the deal-related security issue(s) impacts this relationship. Using a sample of 263 acquisitions involving U.S. non-financial firms in the period between January 1, 2000 and December 31, 2014, this study provides only partial support for the fear that dual role advisors provide biased advice in order to secure themselves of obtaining lucrative financing fees. More specifically, it is shown that deals with an acquirer advisor in a dual role are completed at significantly higher premiums. However, this study does not find that this association increases in magnitude with an increase in the total amount of proceeds of the deal-related security issue(s) and it also does not find a significant association between dual role advice for the acquirer and acquirer announcement returns. Furthermore, after controlling for the proven endogenous nature of target advisors in dual roles, this study does not find evidence for an influence of target advisors in dual roles on either deal premiums or acquirer announcement returns, even in deals with sizeable security issues. As such, this research concludes by stating that the conflict of interest only exists for acquirer advisors in dual roles while with target advisors in dual roles no conflict of interest exists.

Keywords: dual role advisors, acquisition advice, conflict of interest, shareholder value.

ACKNOWLEDGEMENTS

With the finishing of this master thesis, our one year as master students at the Lund University School of Economics and Management (LUSEM) is at an end. Over the course of this year, we have expanded our knowledge within the field of corporate and financial management. Additionally, we have developed ourselves personally outside of the classroom in numerous ways. We would therefore state that our education at LUSEM has gone beyond classroom education only. Now, after several years of being a student, we both feel like we are ready to apply what we have learned to the 'real world', outside of any university campus.

Even though the purpose of writing the master thesis is to independently carry out a complete empirical research project of relevance to the field of corporate and/or financial management, the work in front of you is not the product of us two only. Ever since the early stages of the research project nearly three months ago, we have greatly benefited from the feedback and tips of our supervisor Naciye Sekerci as well as peer reviewers Dorothea Agricola and André Greiner. Furthermore, we would like to express our gratitude to Daan de Vries from the Rotterdam School of Management and Reinout Kool from the Amsterdam Business School for providing access to databases used in the data collection process.

Moreover, special thanks go to our families. Without their love and support it would not have been possible to study here, let alone complete this master thesis. Last, but by no means least, we would like to thank our friends and all others that have made our year in Sweden such a wonderful experience.

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2SLS	Two-Stage Least Squares
CAR	Cumulative Abnormal Returns
CRSP	Center for Research in Security Prices
KKR	Kohlberg Kravis Roberts & Co
M&A	Mergers and Acquisitions
NPV	Net Present Value
OLS	Ordinary Least Squares
ROA	Return on Assets
SDC	Securities Data Company
S&P	Standard & Poor's

1. INTRODUCTION

An important part of corporate investment activity relates to acquisitions. When performing these acquisitions, many firms solicit the support of investment banks as advisors during the acquisition process. Likewise, firms being the target in an acquisition enlist investment banks to advise them during the course of the transaction. Additionally to this advising role, however, investment banks can also help finance the transaction, often as underwriters of public securities issued by the acquiring firm. In a scenario where one investment bank provides both advisory services and is involved in the deal financing, the investments bank's advice to either the acquirer or target might be impacted by the bank's desire to obtain financing fees from financing the transaction.

The risks associated with dual role advisors came forward in the acquisitions of Del Monte Foods by private equity firm Kohlberg Kravis Roberts & Co (KKR) that was brought to a Delaware court in 2011 (Court of Chancery of the State of Delaware, 2011). In this acquisition, investment bank Barclays Capital acted as the advisor of the target, Del Monte. At the same time, however, Barclays was also soliciting the role as financer to KKR, the acquirer. This dual role was reason for Del Monte's shareholders to litigate against the board since they felt that Barclays was favoring KKR in the bidding contest. According to the judge, Barclays secretly and selfishly manipulated the bidding process in order to collect lucrative financing fees. In fact, Barclays earned $24 million in advising fees from Del Monte and at least $21 million of financing fees from KKR. In the end, the judge ruled that the bidding process was to be re-opened for 20 days in order to provide time for a new bidder to emerge.

As seen in the Del Monte case, interests of advisors and advisees can be considerably different. Hence, many investment banks have introduced the practice of Chinese walls (i.e. internal information barriers) to avoid information sharing between advisory and financing teams. Apparently, investment banks realize that their role as advisor and financer should be separated. However, crossing such a barrier does not necessarily mean that laws are breached. In fact, Chinese walls are frequently crossed or misused (e.g. Bodnaruk, Massa & Simonov, 2009; Ivashina & Sun, 2007; Massa & Rehman, 2008). Accordingly, this study will shed light on the relationship between dual role advisors and shareholder value creation and analyze how the amount of proceeds of the related security issue(s) impacts this relationship.

Hereby, our research is related to several other studies that focus on the potential value creation or destruction by dual role advisors. In these studies, the conflict of interest hypothesis is brought forward to explain why investment banks' clients should be cautious to employ an

advisor with a dual role (Allen, Jagtiani, Peristiani & Saunders, 2004; Ertugrul & Krishnan, 2014). Following this hypothesis, it is expected that advisors in dual roles may advise acquirers (targets) to pay (accept) higher (lower) premiums since the advisor can increase its income by means of financing-related fees when the transaction is completed. In this line, several scholars find that buy-side advisors that also finance the acquisition are associated with lower acquirer announcement returns, shorter completion times and higher target announcement returns, acquisitions premiums and divesture rates (Ertugrul & Krishnan, 2014). Similarly, other studies show that deals including sell-side advisors that also act as financiers of the transaction are performed at a lower target premium (Siming, 2009).

As such, existing research has already shown that dual role advisers can have a significant impact on acquisition premiums and are able to destroy value for the acquiring/target firm's shareholders. However, to our knowledge, no research to date has covered both acquirer and target advisors in dual roles. In addition, previous studies have not taken into account how the amount of proceeds of securities issued to finance a deal might impact this relationship. As the conflict of interest hypothesis theorizes that the investment bank's advice is tainted by potential financing fees and it is the amount of proceeds of the issue that is one of the main determinants of these fees, it is expected that the total proceeds of the related security issue(s) has a positive moderating effect on the relationship between dual role advising and value creation or destruction for the acquirer's and target's shareholders.

Building on a sample of 263 acquisitions involving U.S. non-financial firms in the period between January 1, 2000 and December 31, 2014, this study provides only partial support for the fear that dual role advisors provide biased advice in order to secure themselves of obtaining lucrative financing fees. More specifically, it is shown that acquirer advisors in dual roles have a significant and positive effect on deal premiums, increasing them with $65 to $73 million for the median market value target. However, dual role advice for the acquirer proves to have no significant effect on acquirer announcement returns. After controlling for the proven endogenous nature of target advisors in dual roles, this study also does not find evidence for an influence of target advisors in dual roles on either deal premiums or acquirer announcement returns. Lastly, inconsistent with what was hypothesized, this study also does not find a significant moderating effect of issue proceeds on the relationship between acquirer/target advisors in dual roles and acquirer or target shareholder value creation.

By studying dual role advice for both the acquirer and target and focusing specifically on the moderating role of the amount of proceeds of the associated security issue, this research adds to the understanding of the potential value created/destroyed by dual role advisors.

Furthermore, this study falls in a broader body of literature on the role of financial advisors in corporate takeover transactions (e.g. Bao & Edmans, 2011; Golubov, Petmezas & Travlos, 2012; Kale, Kini & Ryan, 2003). Besides filling the gaps exposed in the literature, this study also provides some valuable recommendations for policy makers, shareholders and managers seeking advisory services during bidding processes.

The structure of this thesis is the following: Chapter 2 contains the literature review and covers key articles on value creation in mergers and acquisitions (M&A), the role of financial advisors and dual role advisors specifically. On the basis of this literature, Chapter 3 describes a conceptual model that is used to guide quantitative data analysis. Subsequently, Chapter 4 discusses the research strategy and method as well as techniques used for collecting data and operationalizing research concepts. This is followed by the findings of the study, a discussion of these and a description of their implications for managers, shareholders and policy makers in Chapter 5. Finally, Chapter 6 reports the conclusion and covers methodological limitations of this study as well as recommendations for future research.

2. LITERATURE REVIEW

In this chapter the existing literature on value creation in M&A, the role of financial advisors and dual role advisors will be analyzed. Doing so, the focus of this research will be defined more precisely. It will be the foundation for the conceptual framework, which will be drafted in the subsequent chapter.

2.1 Value Creation in M&A

There has been given ample attention in literature to the question whether or not acquisitions add value. Often, the methodology used to answer this question is that of event studies with stock price reactions to merger or takeover announcements as the variable of interest (Bauer & Matzler, 2014; Soongswang, 2014). Almost unanimously, these studies find that acquisitions create value for the acquirer's and target's shareholders combined (Bhagat, Dong, Hirshleifer & Noah, 2005; Martynova & Renneboog, 2008). There appears to be, however, a difference between acquirers and targets with regard to the division of this created value. More specifically, most value appears to accrue to targets at the expense of acquirers (Graham, Lemmon & Wolf, 2002).

Results for targets' cumulative abnormal returns (CAR) are consistent, regardless of the time period used in the research. Eckbo and Langohr (1989), for instance, find significant

positive target CAR for the period 1960 – 1970 on the announcement day and the following day. These findings are confirmed in other studies, focusing on different time periods (e.g. 1986 – 1991 in Danbolt, 2004 and 1990 – 1998 in Raj and Forsyth, 2003). Gains for targets are found to stem from a multitude of sources, of which strengthened competitive position is most frequently mentioned (Berger & Humphrey, 1992; Weinberg, 2007). Moreover, takeover defenses, antitakeover jurisdiction and judicial decisions have all historically worked to enhance the bargaining position of targets at the expense of that of acquirers (Weston, Chung & Siu, 1998). One last argument for gains for targets revolves around the notion of synergy creation (Berkovitch & Narayanan, 1993). Synergies come in different forms, of which operating (Healy, Palepu & Ruback, 1992) and financial (Ghosh & Jain, 2000) are most often documented.

What is clear is that targets must provide a compelling rationale to shareholders in order to get approval for a deal. Acquirers, however, do not have the same restrictions from their shareholders and therefore may pursue acquisitions that offer no gain to their shareholders (Allen et al., 2004). As a result, findings for acquirer shareholder returns are less conclusive than that for target shareholder returns. Some researchers find negative CAR (Fuller, Netter & Stegemoller, 2002; Graham et al., 2002) while others point towards positive CAR for acquirers (Eckbo, 1983; Moeller, Schlingemann & Stulz, 2004). To add to the inconclusiveness, many studies find shareholder returns for acquirers to be statistically indistinguishable from zero (Akbulut & Matsusaka, 2010; Holmen & Knopf, 2004). This viewpoint, that acquirer shareholder returns are statistically insignificant from zero, has evolved as the dominant observation regarding acquirer CAR (Martynova & Renneboog, 2008). Entrenchment of managers is mentioned as a key explanation for this conclusion. Managers regularly reap personal benefits at the expense of shareholder value (Grinstein & Hribar, 2004; Jensen, 2005). Another argument frequently brought forward is the hubris hypothesis that postulates that overly optimistic and confident managers overbid for targets and by doing so decrease value for acquirers (Malmendier & Tate, 2005; 2008).

Furthermore, a plethora of academic research has focused on how several firm and deal characteristics impact acquirer and target shareholder returns. With regard to firm characteristics, Moeller et al. (2004) provide evidence for a significant size effect. Small companies have higher announcement returns than large companies, which can be partly explained by the fact that large firms more often acquire public firms which is associated with lower acquirer abnormal returns compared to acquiring private firms (Fuller et al., 2002). Furthermore, Lang, Stulz and Walkling (1991) find that acquiring firms with high profits and

free cash flows have lower announcement returns as managers with free cash flow will invest it in negative net present value (NPV) projects. In similar fashion, several researchers find that the acquisition premium is impacted by the acquirer's and target's market-to-book ratio (Rhodes-Kropf & Viswanathan, 2004; Rhodes-Kropf, Robinson & Viswanathan, 2005) and industry sector (Laamanen, 2007).

Regarding deal characteristics, one robust result in M&A literature is that acquirer announcement returns are lower in stock acquisitions than in cash acquisitions (e.g. Fuller et al., 2002; Travlos, 1987), since paying with stock sends a signal to the market that the company is overvalued. In addition, Cotter and Zenner (1994) document that, even after controlling for several other deal characteristics, the acquisition premium is higher for hostile takeovers compared to friendly mergers. Lastly, Morck, Shleifer and Vishny (1990) report that acquisitions driven by diversification and growth motives result in lower acquirer shareholder returns. More recent research, however, suggests that diversification may be associated with higher acquirer returns (Campa & Kedia, 2002; Villalonga, 2004).

Against this background, several scholars have tried to shed light on the value created/destroyed by financial advisors in the acquisition process. As analyzing this literature provides some important insights for analyzing the value created/destroyed by dual role advisors specifically, the subsequent section provides an overview of the current literature on the role of financial advisors in the acquisition process.

2.2 Role of Financial Advisors

In order to determine whether or not financial advisors add value in acquisitions, it is worthwhile to first better understand what tasks are exactly performed by financial advisors. McLaughlin (1990) identifies three different acquisition advisor roles. The first, prior search, is related to locating potential bidders or targets. The second, effort, entails advisor's work to complete offers, looking for higher bids, protecting clients against hostile offers, and negotiating to get the best deal. The third and last category, offer evaluation, revolves around advising on a multitude of things, among which: the bidding strategy, the offer price, whether or not to accept an offer and the possibility for competing bids.

Now it is known what tasks are performed by financial advisors, one can assess whether or not advisors add value to their clients. When comparing acquisitions performed in-house by acquirers (i.e. without advisors) with those done with the assistance of financial advisors, Bao and Edmans (2011) discover that investment bank advisors matter for deal outcomes with a significant effect on the advisee's announcement returns. On the contrary, Servaes and Zenner

(1996) find that the acquisition announcement returns for the acquirer are higher when firms do not make use of financial advisors. However, when controlling for several deal characteristics, this effect disappears. This gives reason to believe that firms hire advisors if transactions are more complex (confirmed by Chahine & Ismail, 2009; Da Silva Rosa, Lee, Skott & Walter, 2004), have less acquisition experience, have lower insider ownership and when targets operate in different industries. Moreover, advisors are more likely to be hired when a deal is hostile and includes non-cash payment (Da Silva Rosa et al., 2004). Given the experience and knowledge required for completing these deals, it is in these types of transactions that advisors will create most value for their clients.

Related to the topic of value creation by financial advisors is advisor reputation. Logically, one would assume that more prestigious advisors create more value; how would they otherwise become prestigious? This is known as the superior deal hypothesis (Ismail, 2010). Nevertheless, evidence regarding the influence of financial advisors' reputation on value creation through acquisitions is mixed. Some researchers argue that top-tier advisors (typically identified by ranking investment banks on the value of deals they advised over a certain time period) earn higher abnormal returns for either acquirers or for both acquirer and target combined compared to lower tier advisors (Bowers & Miller, 1990; Golubov et al., 2012; Kale et al., 2003; Rau, 2000). On the other hand, others find that top-tier advisors are in fact not better in creating shareholder wealth for their clients compared to lower tier advisors (Hunter & Jagtiani, 2003; Ismail, 2010; Rau & Rodgers, 2002; Servaes & Zenner, 1996).

Continuing on the value of advisor reputation, Bao and Edmans (2011) notice it is striking that market shares in the corporate advisory industry appear to be independent of CAR of advisor's prior clients. However, when looking further than advisor's static market share, a different picture emerges. Sibilkov and McConnell (2014) find that changes in advisor's market share are positively correlated with performance of prior clients, leading to the conclusion that advisors gain market share when their past clients perform well. Given the fact that performance of prior clients is persistent (Bao & Edmans, 2011), we would expect that all clients rush to the advisor that created the greatest value for their prior clients, resulting in one single best advisor that dominates the market (Sibilkov & McConnell, 2014). This hypothesis is at odds with the current industry landscape, where multiple advisors hold a significant share of the market. Apparently, other factors than the advisor's value creating track record play a role in the process of financial advisor selection.

One such factor is prior relationships between parties of an acquisition and financial advisors. Especially acquirers tend to opt for financial advisory services from banks with which

they have prior lending relationships (Allen et al., 2004). Although acquirers pay a relationship premium to advisors to with which they have an ongoing relationship, firms believe to benefit from retaining advisors because of the high switching costs associated with hiring new advisors (Allen et al., 2004; Saunders & Srinivasan, 2001).

Despite the uncertainty of M&A advisor value creation, the majority of acquirers and targets makes use of advisors to advise them in takeover deals. In these deals, typically a large portion of the financial advisor's fee is dependent on completion of the deal, often around 80% (McLaughlin, 1990). As several scholars note (e.g. Kale et al., 2003; Rau, 2000), this high proportion of contingent fee creates a conflict of interest in which the financial advisor has an incentive to complete the deal even when this is value destroying for the client. This conflict of interest is even bigger when advisors have dual roles since they also obtain financing fees from financing the deal (Ertugrul & Krishnan, 2014).

2.3 Dual Role Advisors

Although a separation between investment banks providing advice and investment banks taking care of the financing for the transaction remains the dominant paradigm in acquisitions, dual role advisors have been found to be present in around 20% of all acquisitions (Ertugrul & Krishnan, 2014; Siming, 2009). Because of this, several researchers have focused on the value created/destroyed by employing dual role advisors. In this literature, the conflict of interest hypothesis is most frequently brought forward to explain why investment banks' clients should be cautious to employ a dual role advisor (Allen et al., 2004; Ertugrul & Krishnan, 2014).

Following the conflict of interest hypothesis, the prospect of fees from underwriting any securities issued to finance the deal on top of regular advisory fees makes it more profitable for an advisor to support the completion of the deal (Ertugrul & Krishnan, 2014; Siming, 2009). Hence, advisors might be even more biased in their advice and approve of deals that are even more value reducing for the advisee's shareholders. In line with this reasoning, Ertugrul and Krishnan (2014) find that acquisition premiums, target announcement returns and the likelihood of divestment are higher for deals with acquirer advisors in dual roles. In the same vein, Siming (2009) finds that acquisition premiums are lower while acquirer announcement returns and likelihood of lawsuits are higher with target advisors in dual roles.

While the conflict of interest hypothesis has been confirmed by several other researchers (Kesner, Shapiro & Sharma, 1994; Michaely & Womack, 1999), many investment banks have introduced the practice of Chinese walls to avoid information sharing between advisory and financing teams. However, crossing such a barrier does not necessarily mean that

laws are breached. In fact, Chinese walls are frequently crossed or misused and it may well be requested to do so by the advisee (Bodnaruk, Massa & Simonov, 2009; Haushalter & Lowry, 2010; Massa & Rehman, 2008, Siming, 2009). One of the most obvious forms of crossing Chinese walls related to acquisitions is when clients of acquisition advisors other than the bidder(s) and target of the transaction buy target shares prior to takeover announcements (Griffin, Shu & Topaloglu, 2012). Jegadeesh and Tang (2010) find that other clients of target advisors (but not other clients of acquirer advisors) do indeed often buy target's shares during the one month prior to the takeover, indicating that investment banks leak information to their other clients. Although this finding is disputed by Griffin et al. (2012), this study does point out that other clients with acquisition-related information from their investment bank could still buy target shares via other channels and are just careful not to trade via the investment bank. As such, the effectiveness of an investment bank's Chinese wall to overcome conflicts of interest is questionable.

Other than by means of Chinese walls, the conflict of interest between advisor and advisee might be mitigated by the potential costs of reputational damage faced by advisors (Chemmanur & Fulghieri, 1994). As can be inferred from the highly concentrated M&A advisory market, reputation of an advisor plays an important role in advisor selection. Be that as it may, empirical evidence does not point to substantial concern from acquisition advisors about their reputation (Chemmanur & Krishnan, 2012). Another way to overcome conflicts of interest is letting an independent advisor provide a fairness opinion (Chen, 2010). A fairness opinion is a report in which an opinion is formulated regarding the fairness of the financials of a deal (Bebchuk & Kahan, 1989). This can potentially prevent firms from behaving in an inappropriate or unlawful manner as seen in for example the Del Monte case. Although the reasoning behind a fairness opinion seems to be logical, little empirical support has been found promoting the use of fairness opinions (Kisgen, Qian & Song, 2009).

Turning to the potential advantages of dual role advisors, the expedited acquisition hypothesis suggests that dual role advisors are associated with shorter deal completion times (Chemmanur, Ertugrul & Krishnan, 2013; Ertugrul & Krishnan, 2014). Information used during the advisory stage might be reused in the financing stage, decreasing the time needed to complete the transaction. Additionally, the coordination between both stages may be easier when one party performs both services. In line with this argument, Ertugrul and Krishnan (2014) find that the deal completion time (i.e. the time between deal announcement and deal completion) is reduced by 81 days when the acquirer's advisor also acts as the underwriter of the associated security issue. Acquirers might prefer fast deal completion to prevent competing

bids and to make sure that future market conditions do not aversively affect the transaction price, which might explain why we still witness acquirers and/or targets employing dual role advisors.

Furthermore, the reduced transaction costs hypothesis states that investment banks may have a comparative advantage over others when they provide the advisory service and also take care of the financing (Allen et al., 2004). More specifically, advisors that also underwrite securities have lower costs of information production since some of this information is already produced in the advisory process (Ertugrul & Krishnan, 2014). As a result, the investment bank would be able to charge lower fees. While Siming (2009) finds this to be true and concludes that targets with advisors in dual roles indeed pay lower fees, Ertugrul and Krishnan (2014) do not find prove for this statement. Related to the reduced costs of information collection, Forte, Iannotta and Navone (2010) state that an advisor's ability to codify private information about an acquirer or target and subsequently use this information in the financing process can act as a certification of the deal. In other words, information held by the advisor can potentially help with obtaining a higher value for the target or obtaining better terms on the security issue for the acquiring firms. In line with his, Ivashina and Kovner (2011) find that stronger relationships between banks and private equity firms result in lower interest rate spreads on debt. Allen et al. (2004), however, study the role of both commercial and investment banks in providing acquisition advisory services and find that this certification effect seems to be only true for targets, whereas for acquirers the conflict of interest prevails.

All in all, several factors have been proposed that might counteract or counterbalance the conflict of interest arising from employing dual role advisors. As such, the current body of literature is still not fully in agreement on whether the conflict of interest argument indeed dominates under all circumstances. Hence, it is worthwhile to take a closer look at whether dual role advisors indeed create or destroy value for both the acquirer's and target's shareholders.

3. CONCEPTUAL FRAMEWORK

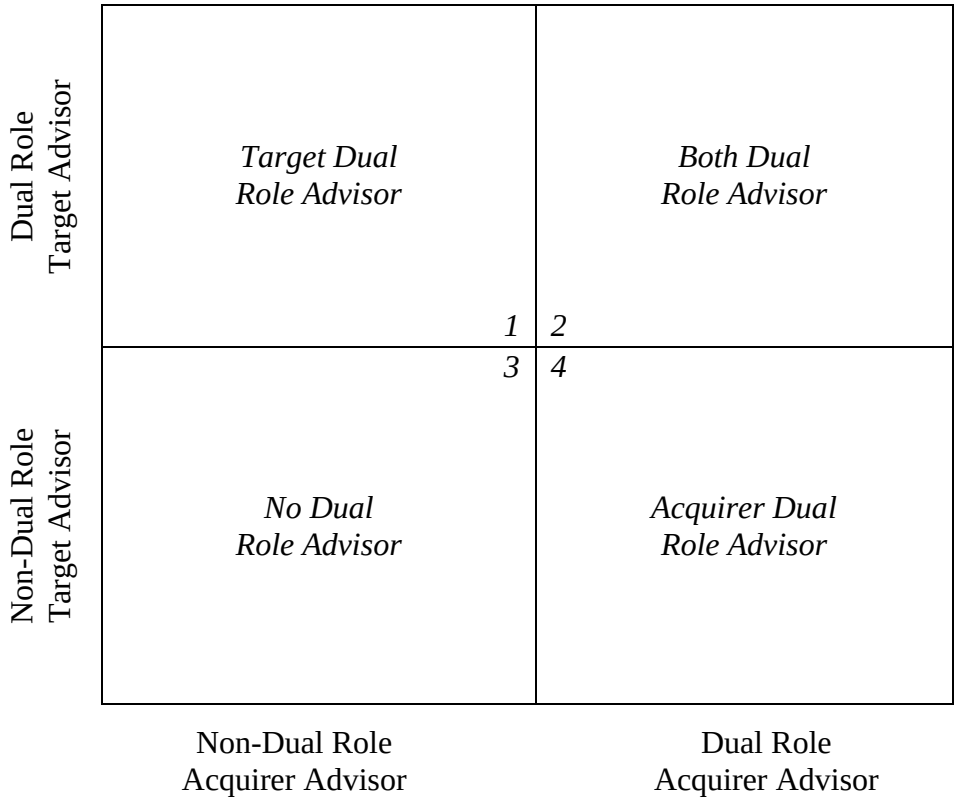
In the previous chapter relevant literature was reviewed. The most important studies on value creation in M&A, the role of financial advisors and dual role advisors were examined. In this chapter a conceptual framework for this research will be drafted. The hypotheses will be formulated based on previous research and an extension of the conflict of interest argument.

3.1 Dual Role Advisors and Shareholder Value

Regarding dual role advisors, no research has yet covered both acquirer and target advisors in dual roles at the same time. Siming (2009), for example, defines a dual role advisor as an advisor that advises the target and is simultaneously involved in the financing of the deal for the acquirer. In similar fashion, Ertugrul and Krishnan (2014) focus on investment banks that provide advice to the acquirer and at the same time act as the underwriter for the securities issues to finance the acquisition. Only Allen et al. (2004) consider banks that advise the acquirer or target while simultaneously acting as lender to the acquirer or target. However, they focus on commercial banks that have established lending or other customer relationships with either party and do not consider financing for the specific deal.

Taking the earlier research on dual role advisors into account, four different scenarios can be drafted on the basis of the (dual) role of advisors on both sides of the deal. Figure I shows these four scenarios: (1) the target employs a dual role advisor and the acquirer employs a non-dual role advisor; (2) both the target and acquirer employ a dual role advisor; (3) both the target and acquirer employ a non-dual role advisor; and (4) the acquirer employs a dual role advisor and the target employs a non-dual role advisor.

Figure I
Four Different Scenarios



Given the observation that the second scenario is very unique and does not occur frequently[1], it will be excluded from this research. For this research, a comparison between the other three scenarios will be conducted to conclude whether dual role advisors create or destroy value for both shareholder groups.

According to the literature on dual role advisors outlined earlier, deal outcomes can differ significantly depending on the scenario witnessed. More specifically, advising the acquirer while simultaneously being involved in the financing of the deal creates a conflict of interest in which the advisor has an incentive to convince the acquirer of making a higher offer than it would do otherwise. By doing so, the advisor increases the likelihood that the target accepts the offer and thereby also the probability that it can obtain lucrative financing fees. If this expectation holds, deals in which the acquirer is advised by a dual role advisor (scenario 4) would be characterized by higher deal premiums than deals without any dual role advisor (scenario 3). This all leads to the following hypothesis:

> Hypothesis 1a: *The value created for the acquirer's shareholders is lower and the value created for the target's shareholders is higher in deals where the acquirer is advised by a dual role advisor, than for deals in which there is no dual role advisor.*

Similarly, advising the target and at the same time being involved in the financing for the acquirer creates a conflict of interest in which the advisor has an incentive to convince the target to accept an offer that may not be maximizing value. As seen in the Del Monte case, the advisor might direct its advice towards a specific acquirer in order to obtain financing fees on top of regular advisory fees. As such, deals in which the target is advised by a dual role advisor (scenario 1) would be characterized by lower deal premiums than deals without any dual role advisor (scenario 3). This all leads to the following hypothesis:

> Hypothesis 1b: *The value created for the acquirer's shareholders is higher and the value created for the target's shareholders is lower in deals where the target is advised by a dual role advisor, than for deals in which there is no dual role advisor.*

[1] Agrawal, Cooper, Lian and Wang (2013) studied the determinants and consequences of merging firm's choice for common advisors in a sample of 6,272 acquisitions over the period 1981-2005 and found that only 98 deals (1.6%) had common advisors.

If both hypotheses hold, one can conclude that dual role advisors have a negative effect on the value created for the advisee. In other words, it would be proven that the advice given by financial advisors in dual roles is not optimal as it is biased by a desire to obtain additional financing fees. At the same time, however, it is believed that the relationship between dual role advisors and deal outcomes might become stronger depending on the amount of proceeds of the associated security issue.

3.2 Moderating Effect of Issue Proceeds

As described earlier, the conflict of interest hypothesis theorizes that dual role advisors may be biased in their advice to acquirers or targets because of their desire to obtain additional financing fees. An extension of this argument would be that the conflict of interest increases with the amount of financing fees as investment banks will benefit more from dual roles in deals associated with high financing fees than from dual roles in deals with low financing fees. Hence, one would expect the bias in the investment bank's advice to become bigger when the potential financing fees increase. Based on the assumptions that the potential financing fees are exogenously determined by the acquirer's choice of financing and that this can be reasonably predicted by the investment bank ex-ante, it is worthwhile to take a closer look at the potential moderating role of financing fees. Unfortunately, however, financing fees are often not disclosed by both the acquirer and target. As such, this study has to use another measure to serve as a proxy for the amount of financing fees.

In line with this, Ertugrul and Krishnan (2010) hypothesize that the relationship between dual role advisors and shareholder value creation may become stronger when the transaction size increases. More specifically, assuming that financing fees are directly related to transaction size, performing dual roles in larger deals would result in higher financing fees than performing dual roles in smaller deals. This, in turn, means that larger deals may create more severe conflicts of interests between the advisor and the advisee than smaller deals. One can argue, however, that financing fees are not necessarily determined by the deal size but more by the amount of external financing used. Very big deals that are financed primarily with corporate funds do not give the investment bank a sizeable incentive to advise a higher (when advising the acquirer) or lower (when advising the target) acquisition premium. After all, there is no significant amount of money to be made with financing the deal if there is no, or only limited, external financing involved. It is therefore more valuable to look at the absolute amount of proceeds from the associated security issue as this is a better indication for the investment

bank's financing fees (Altinkihc & Hansen, 2000). This all leads to the following two hypotheses:

> Hypothesis 2a: *The difference in value created for the acquirer's shareholders and value created for the target's shareholders between deals where the acquirer is advised by a dual role advisor and deals in which there is no dual role advisor becomes stronger when the proceeds of the associated security issue(s) increase.*
>
> Hypothesis 2b: *The difference in value created for the acquirer's shareholders and value created for the target's shareholders between deals where the target is advised by a dual role advisor and deals in which there is no dual role advisor becomes stronger when the proceeds of the associated security issue(s) increase.*

If both hypotheses hold, this would provide support for the conflict of interest argument. More specifically, if the relationship between dual role advisors and shareholder value creation is indeed driven by conflicts of interest, one would find that this relationship becomes stronger when the total proceeds of the associated security issue(s) increase.

4. RESEARCH DESIGN

In the previous chapters the existing literature was reviewed, a conceptual framework for this research was outlined and the hypotheses were stated. In order to test these proposed relationships, a dataset of deals has to be compiled and deal characteristics such as the financial advisors as well as the underwriter(s) of the associated security issue(s) need to be documented. In this chapter the research methods for generating and analyzing the quantitative data will be described.

4.1 Research Strategy and Method

In aiming to explore the relationship between dual role advisors and shareholder value creation in more depth, this research uses the pre-designed conceptual model and hypotheses to guide quantitative data analysis. This is in accordance with previous research on this topic (e.g. Allen et al., 2004; Ertugrul & Krishnan, 2014; Siming, 2009). According to Saunders, Lewis and Thornhill (2009), such a deductive approach is also appropriate as this study aims to explain causal relationships between different variables. In addition, Gill and Johnson (2002) argue

that such a highly structured methodology facilitates replication and therefore ensures reliability of the research results.

Moreover, in studying the effect of dual role advisors on acquirer's and target's shareholder value creation, this study follows the event study design outlined by MacKinlay (1997). According to MacKinlay, event studies are useful methods to investigate the impact of economic events such as acquisitions on firm value as, assuming that investors are rational, the effects will be directly reflected in security prices. In following this approach, this study uses well established procedures practiced in other event studies such as Eckbo and Langhohr (1989) and Raj and Forsyth (2003).

4.2 Data Collection

Since this study aims to explore the relationship between deal and financing characteristics that are not available in one single information source, information is extracted from multiple databases. In the first step, M&A deals completed over the 15-year period from January 1, 2000 up until December 31, 2014 are compiled from the ThomsonOne SDC M&A database. This is the main database used in research on the role of financial advisors in M&A given its large number of deals and the fact that it spans a long time period (e.g. Agrawal et al., 2013; Bao & Edmans, 2011; Chemmanur et al., 2013; Francis, Hasan & Sun 2006; Golubov et al., 2012; Ismail, 2010; Kale et al., 2003). In order to ensure information availability and data validity, deals are selected based on the following restrictions: the acquirer and target are both non-financial public firms located in the United States; the acquirer must have less than 50% ownership in the target prior to the deal and more than 50% ownership in the target after the deal; the target firm is not allowed to be in bankruptcy at the time of the announcement and the deal premium has to be known. These restrictions are in line with previous research on this topic (e.g. Allen et al., 2004; Ertugrul & Krishnan, 2014; Siming, 2009).

Furthermore, in order to actually study any dual relationship status, only deals with at least one known financial advisor to either the acquirer or target are included. A financial advisor is identified as such when it has performed at least one of the assignments related to being a financial advisor listed in the database. Accordingly, a financial advisor may be an investment bank that is only hired by the acquirer or target to deliver a fairness opinion or a general advisor that performs multiple complementary services such as managing the entire deal or advice on the overall approach to the deal. Eventually, imposing these restrictions results in a sample of 1,353 deals. For this sample, information on the deal (e.g. company names, announcement date, deal value and financial advisors) as well as (financial) information

about both the acquirer and target (e.g. industry, company size and operating performance) is extracted. For deals in which the SDC M&A database does not contain all (financial) information of both the acquirer and target, this information is manually added using the Compustat North America database.

In the second step, as the ThomsonOne SDC M&A database does not contain inclusive information on deal financing, we employ the ThomsonOne SDC Global New Issues database. More specifically, we search the database to determine whether the acquirer issued any securities (debt, equity or hybrid) to finance the acquisition. An issue is classified as related to the acquisition if it is explicitly stated in the prospectus that the proceeds will be used to finance the specific deal. We identify 662 such issues in the database. For these issues, we extract information such as the amount of proceeds and name(s) of the underwriter(s).

In the third step, in order to identify dual role advisors, we match the deal and firm characteristics from the ThomsonOne SDC M&A database with the issue characteristics from the ThomsonOne SDC Global New Issues database. In doing so, we aggregate the issue data at the deal level and exclude those deals that have been financed with the acquirer's internal corporate funds or existing credit lines (i.e. deals for which no security issue is found), leaving us with a final sample of 263 deals. Within this sample, we identify 173 (66%) deals that have an acquirer advisor in a dual role and 23 (9%) deals with a target advisor in a dual role.

Finally, in order to analyze the effect of dual role advisors on the value created for the acquirers, we extract historic share prices from the Center for Research in Security Prices (CRSP) database. For several acquirers, multiple options are available in the database and to ascertain that the right data is selected (i.e. the right company) the available alternatives are checked for both ticker and CUSIP code. For calculating abnormal returns, we use the returns on the Standard & Poor's (S&P) 500 index, which are also extracted from the CRSP database.

4.3 Variables and Measurement

In order to make statistical inferences about the relationships between different variables, several important concepts need to be operationalized in order to be measured quantitatively (Saunders et al., 2009). Please refer to Appendix A for a complete list of all variables used in this research and their definitions.

4.3.1 Independent Variables

With respect to the main independent variable in this research, dual relationship status, we use two dummies to identify acquirer or target advisors in dual roles. More specifically, the dummy

variable acquirer dual role takes on the value 1 if (one of) the acquirer's financial advisor(s) is the same as (one of) the underwriter(s) of the related security issue(s) and 0 otherwise. Similarly, the dummy variable target dual role takes on the value 1 if (one of) the target's financial advisor(s) corresponds to (one of) the underwriter(s) of the associated security issue(s) and 0 otherwise. To prevent perfect multicollinearity we include no dummy variable that takes on the value 1 for a deal in which none of the financial advisor(s) matches (one of) the underwriter(s). Furthermore, in order to analyze the moderating effect of the amount of proceeds of the deal related security issue, we use the total proceeds (in million USD) of the associated security issue, including possible overallotment. In case of multiple security issues related to one deal, we sum the proceeds of the individual issues to arrive at one total amount of proceeds per deal.

4.3.2 Dependent Variables

Regarding the dependent variables, acquirer's and target's shareholder value creation, most research on M&A to date looks at the cumulative abnormal return (CAR) of either the acquirer's or target's stock around the announcement date (Bauer & Matzler, 2014). In this research, the CAR of the acquirer is used to measure shareholder value creation for the acquirer. We compute expected returns for both a 3-day and 7-day period around the announcement date and calculate the CAR as the sum of differences between the actual stock return and the expected return. Specifically, market model parameters are estimated using an estimation window starting 180 and ending 15 trading days prior to the announcement of the deal. We believe such an estimation window is appropriate as this best balances the tradeoff between improved accuracy and the possibility of significant parameter shifts over time (MacKinlay, 1997). By using two variables with different time spans we take into account the fact that the share price closer to the announcement date reflects more recent information and hence may incorporate rumors about the acquisition. Including a few days after the deal announcement, in turn, accounts for the possibility that the market needs more than one day to react.

Similar to previous studies on this topic (e.g. Allen et al., 2004; Siming, 2009), this research uses the deal premium to measure shareholder value creation for the target. Empirically, the deal premium is measured as three different variables. Deal premium is the offer price minus and divided by the stock prices of one day, one week and one month prior to the announcement of the deal. Similarly as for acquirer shareholder value creation, using three different premiums and variables eliminates any bias resulting from the fact that the share price closer to the announcement date already reflects rumors about the acquisition.

To control for the influence of outliers in our sample, we winsorize all continuous variables. By winsorizing, a common practice in financial data analysis (e.g. Chen, 2010; Golubov et al., 2012; Kale et al., 2003), the low and high outliers in our sample are replaced by the values corresponding to the 5^{th} and 95^{th} percentile respectively. This in turn eliminates the distorting effect of extreme values and brings the data closer to a normal distribution. In doing so, we for example transform most deal premiums below 0% and far above 100% to more realistic values.

4.3.3 Control Variables

In order to isolate the effect of the dual advisory relationship on shareholder value creation as well as the moderating effects of issue proceeds, we control for a range of firm and deal characteristics. Given the existing research on firm characteristics and shareholder returns we control for both acquirer and target size (log of book value of total assets in million USD), operating performance proxied by return on assets (operating income divided by the book value of total assets) and market-to-book ratio (market capitalization divided by book value of equity). All accounting variables are calculated based on the most current financial information prior to the announcement of the deal. In addition, we create three dummies for the acquirer's industry. Four different general industry groups are defined: manufacturing, services, trade, and natural resources. To prevent perfect multicollinearity no dummy variable is included that takes on the value 1 if the acquirer operates in the natural resources industry.

With regard to deal characteristics, we control for the percentage paid in cash, number of competing bidders and relative size of the transaction (calculated as transaction value divided by market capitalization of the acquirer). In addition, we create dummies for whether the acquisition is hostile or not and whether the deal is diversifying or not, whereby a deal is classified as being diversifying if the industry of the target is different from that of the acquirer based on the Fama-French 49-industry classification (Fama & French, 1997). Furthermore, given the impact of advisor quality on deal outcomes, we include two dummies for whether or not the acquirer and/or target employed a top-tier advisor. Similarly as Golubov et al. (2012), we revisit our sample of 1,353 deals and classify the top-10 investment banks by the value of deals they advised on over the period 2000-2015 as top-tier and all other advisors as non-top-tier (see Appendix B). According to Fang (2005), this binary classification accounts for the two-tiered structure of Wall Street and is preferred as it does not rely on the assumption that the measure can capture advisor reputation with accuracy. Lastly, Siming (2009) also includes one variable for the total number of advisors hired by the acquirer and target combined as hiring more advisors could offset the mispricing generated by the dual role advisor. As we believe

that the controlling effect only exists between advisors of the same company, we include two variables for the number of advisors hired by the acquirer and target. Lastly, we include dummies for the deal announcement year to control for differences in deal outcomes over time (Alexandridis, Mavrovitis & Travlos, 2011). All in all, the control variables included in this research are in line with previous studies within this field of research (e.g. Agrawal et al., 2013; Allen et al., 2004; Chemmanur et al., 2013; Ertugrul & Krishnan, 2014; Siming, 2009).

5. ANALYSIS AND DISCUSSION

In the previous chapter the research methodology was described. In this chapter, the results obtained from the data analysis conducted using the statistical package EViews are discussed. To begin with, descriptive statistics for our sample will be discussed and an analysis of means will be presented. Against this background, several regression models will be outlined in order to formally test the stated hypotheses.

5.1 Descriptive Statistics

Overall, more than two-third of the deals in our sample fulfill any of the dual role requirements. More specifically, 66% of the acquirers that issue securities or take on a loan use (one of) their own acquisition advisor(s) as one of the underwriters or syndicators, slightly above the 56.4% of deals with acquirer advisors in dual roles found by Ertugrul and Krishnan (2014). Similarly, 9% of the deals use (one of) the advisor(s) of the target to arrange financing, which is in line with Siming (2009) who finds that 9.5% of deals in his sample use a target advisor in a dual role. Table I reports the yearly distribution of deals with acquirer and target advisors in dual roles both in absolute numbers and as a percentage. Whereas the number of deals completed with an acquirer advisor in a dual role was on its highest level in 2007, the relative contribution peaks in 2011. Oppositely, the number of deals completed with a target advisor in a dual role has been relatively low over the entire sample period. While several years have witnessed no deals completed with a target advisor in a dual role, the relative contribution peaks in 2002 with 33%. However, this percentage should be interpreted with caution as only 6 deals in our sample were announced in this year. The low frequency of target advisors in dual roles could indicate several things: (1) that acquirers are reluctant to involve the target advisor in the deal financing process; or (2) that advisors themselves do not want to be dually involved; or (3) that targets restrict the advisors' ability to be involved in the deal financing.

Table I

Presence of Dual Role Advisors over Time

This table presents the yearly frequency of deals completed with an acquirer advisor in a dual role or target advisor in a dual role in absolute numbers and as a percentage of the yearly deals in our sample. Please note that the number of deals completed with a target advisor in dual role and the number of deals completed with an acquirer advisor in a dual role may add up to a number higher than the total deals in a specific year as for several deals both an acquirer and target advisor in a dual role were identified.

Year	Target Dual Role	% of Total Deals	Acquirer Dual Role	% of Total Deals	Total Deals
2000	2	10%	8	38%	21
2001	0	0%	7	39%	18
2002	2	33%	2	33%	6
2003	0	0%	5	63%	8
2004	0	0%	7	78%	9
2005	2	9%	10	43%	23
2006	1	3%	20	63%	32
2007	1	3%	26	72%	36
2008	3	17%	7	39%	18
2009	0	0%	8	73%	11
2010	3	23%	9	69%	13
2011	3	17%	18	100%	18
2012	2	11%	17	94%	18
2013	3	21%	12	86%	14
2014	1	6%	17	94%	18
Total	**23**	**9%**	**173**	**66%**	**263**

Other summary statistics for the entire sample are presented in Table II. When looking at shareholder value creation, acquirer announcement return has a median value of 0.94% when measured over a 7-day event window, which is slightly higher than the 3-day announcement return which stands at 0.50%. Several other studies (Higson & Elliott, 1998; van Schaik & Steenbeek, 2004) find similar results, but it should be noted that announcement returns found range from -7% all the way up to 4%[2]. Deal premium is highest when calculated based on the share price 4 weeks prior to the announcement date with a median value of 32.3%. Furthermore, one can infer that target share prices tend to rise in the 4 weeks prior to the announcement date as the median premium is decreasing with 1 week before the announcement date (29.9%) and 1 day before the announcement date (28.0%). This indicates that share prices closer to the an-

[2] See Martynova and Renneboog (2008) for an overview of 65 studies that have reported abnormal returns around takeover announcements for acquirers and/or targets.

Table II

Summary Statistics

This table presents the summary statistics of our sample of 263 acquisitions from January 1, 2000 to December 31, 2014 in which the acquirer used external financing to finance the deal. It does not contain summary statistics for instrumental variables and year dummies. All variables are described in Appendix A. All variables are measured using 263 observations (N = 263).

Variable Name	**Mean**	**Median**	**Std. Dev.**
Independent variables			
Acquirer Dual Role	0.658	1.000	0.475
Target Dual Role	0.087	0.000	0.283
Issue Proceeds	3.362	3.380	0.642
Dependent variables			
Acquirer 7-Day CAR	0.417	0.942	8.165
Acquirer 3-Day CAR	0.493	0.503	7.572
Deal Premium 4 Weeks	34.758	32.330	20.884
Deal Premium 1 Week	31.553	29.860	20.062
Deal Premium 1 Day	29.804	28.040	19.715
Control variables			
Acquirer Log of Assets	3.550	3.495	0.618
Target Log of Assets	3.061	3.069	0.600
Acquirer ROA	11.351	10.515	6.095
Target ROA	9.509	8.878	6.336
Acquirer M/B Ratio	3.375	2.568	2.342
Target M/B Ratio	2.590	2.028	1.712
Industry: Manufacturing	0.487	0.000	0.501
Industry: Services	0.323	0.000	0.469
Industry: Trade	0.084	0.000	0.277
Percentage Paid in Cash	73.398	73.400	26.535
No. of Competing Bidders	0.080	0.000	0.323
Relative Size	69.263	51.175	60.262
Hostile	0.019	0.000	0.137
Diversifying	0.284	0.000	0.451
Acquirer Top-Tier Advisor	0.791	1.000	0.407
Target Top-Tier Advisor	0.741	1.000	0.439
Acquirer No. of Advisors	1.513	1.000	0.899
Target No. of Advisors	1.449	1.000	0.680

nouncement date already reflect rumors about the acquisition. Premiums correspond to values found in other studies (Datta, Iskandar-Datta & Raman, 2001; Ertugrul & Krishnan, 2014) and the downward movement of premiums when calculated based on share prices closer to the announcement date is commonly found (Laamanen, 2007; Siming, 2009).

Acquirers are on average bigger than targets of which prove is in the median of acquirer log of assets compared to target log of assets (3.5 versus 3.1 million USD, respectively). Additionally, acquirers have better operating performance than targets with a median return on assets (ROA) of 10.5% versus 8.9%. Acquirers are also valued higher contrasted to targets, as their median market-to-book ratio is 2.6 compared to 2.0 of targets. Most acquirers are operating in the manufacturing industry (48.7%), followed by services (32.3%), natural resources (10.6%) and trade (8.4%) and often acquire targets in the same industry given the fact that only 28.4% of deals are diversifying. Payment of deals is primarily done with cash (median of 73.4%) and in most deals no competing bidders are present. Size of deals stands at a median of 51.2% of acquirer's market value and most acquisitions are neutral or friendly, given the fact that only 2.0% of deals are hostile. Both acquirers and targets often solicit the services of top-tier advisors (in 79.1% of deals for acquirers and in 74.1% of deals for targets), indicating that top-tier advisors indeed have a sizable share of the market. Total average numbers of advisors is similar at 1.5 for acquirers and 1.4 for targets.

The correlation matrix of all independent variables is presented in Appendix C. Some strong and significant relationships deserve special attention. There is an economically and statistically significant correlation between acquirer size and target size (0.708), which is as expected given that firms tend to acquire other firms of similar size. Furthermore, there appears to be a strong correlation (0.421) between the size of the target and the total proceeds of the associated security issue(s), which is logical given that acquiring larger targets requires a larger amount of financing. Overall, most correlations between the independent variables raise little concern for multicollinearity issues in the forthcoming regression specifications. Nevertheless, we have performed our regressions by excluding either acquirer size or target size as the high correlation between these two variables can potentially lead to biased coefficient estimates (Brooks, 2008). The results do not show any meaningful differences in the significance of our main independent variables when we include only one of these variables.

Before turning to the regression analysis, we examine potential mean differences between deals performed with and without dual role advisors. Differences in the averages of shareholder value creation measures might provide a first indication of a significant effect of dual role advisory. As such, Table III presents averages of acquirer announcement returns and

Table III
Analysis of Means

This table presents the averages of shareholder value creation measures for of our sample of 263 acquisitions per category. In addition, we performed mean difference tests using both the pooled and Satterthwaite-Welch method to control for the possibility that the two samples have unequal variances. Whenever statistically significant, we report the Satterthwaite-Welch significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	Acquirer Dual Role		**Target Dual Role**	
	No	**Yes**	**No**	**Yes**
Acquirer 7-Day CAR	0.18%	0.54%	0.28%	1.81%
Acquirer 3-Day CAR	-0.50%	1.01%	0.45%	0.92%
Deal Premium 4 Weeks	31.32%	36.55%*	35.28%	29.34%
Deal Premium 1 Week	27.74%	33.54%**	31.84%	28.58%
Deal Premium 1 Day	24.89%	32.36%***	30.13%	26.45%
Observations	**90**	**173**	**240**	**23**

deal premiums per category. Surprisingly, acquirer announcement returns do not seem to reflect the presence of a dual role advisor effect: average acquirer announcement returns do not differ significantly between the groups. In fact, deals with acquirer advisors in dual roles are associated with higher acquirer announcement returns. This is against the hypothesis that advisors in dual roles will have an incentive to advise the acquirer on offering a higher premium than it would do otherwise. Acquirer announcement returns with target advisors in dual roles do show the hypothesized pattern, but the results are again not significant. In accordance with the conflict of interest hypothesis, however, the results show that the deal premium is significantly higher in deals where (one of) the acquirer advisor(s) is also involved in the financing compared to deals in which the acquirer advisor only advises on the deal. Deals with an acquirer advisor in a dual role are on average completed at a 5.23 to 7.47 percentage point higher premium depending on which share price chosen. Similarly, despite that deal premiums are on average 5.94 to 2.26 percentage points lower for deals with a target advisor in a dual role compared to deals where the target advisor only advised on the deal, deals with a target advisor in a dual role are not completed at significantly lower premiums.

Though not always statistically significant and not unambiguously pointing in one direction, the analysis of means provides the first indication of that dual role advising indeed creates a conflict of interest. However, we are not able to draw strong conclusions based on the observed mean differences as other deal characteristics could potentially also affect deal outcomes. Therefore, we carry out more extensive regression analyses in the next section.

5.2 Effect of Acquirer Advisors in Dual Roles on Shareholder Value

In order to test the effect of dual role advising on acquirer and target shareholder value creation, this study employs ordinary least squares (OLS) regression. We use White's (1980) heteroskedasticity-robust standard errors in all our regression analyses since variances of our dependent and independent variables are unlikely to be equal. Additionally, several authors note the possible endogenous nature of (dual role) advisor selection (e.g. Allen et al., 2004; Ertugrul & Krishnan, 2014; Golubov et al., 2012). More specifically, there may be unobserved firm and/or deal characteristics that drive both deal outcomes and the acquirer's choice to use its own or the target's advisor as an underwriter. For example, it might be helpful or even necessary for the acquirer to use one of the advisors for the financing when the deal is difficult to finance (Siming, 2009). As a result, endogeneity bias could occur, leading to unreliable OLS estimates. To test whether the choice for a dual role advisor is determined exogenously and hence whether we can employ standard OLS regression or need more sophisticated estimation techniques to correct for the endogeneity bias, this study follows the two-stage procedure outlined by Hausman (1978). This is a test examining the statistical difference between OLS and two-stage least squares (2SLS) estimates to determine whether the variable of interest is indeed endogenous.

To perform this test, we need an additional exogenous variable that has an influence on the potentially endogenous variable but not directly on the dependent variable (Li & Prabhala, 2007). In accordance with Ertugrul and Krishnan (2014), we use a dummy variable indicating whether or not the acquirer advisor is a top-tier underwriter to serve as such an instrumental variable for dual role advice for the acquirer. This dummy takes on the value 1 if (one of) the acquirer advisor(s) is among the top-10 debt or equity underwriters and 0 otherwise. The reasoning behind using this instrument is that having a top-tier underwriter (i.e. an investment bank holding a significant share of the market for corporate security underwriting) as acquisition advisor should increase the likelihood that the acquirer uses the acquisition advisor as its underwriter. At the same time, using a top-tier underwriter as an acquisition advisor should not influence shareholder value creation[3]. To construct this variable, we employ the ThomsonOne SDC Global New Issues database and download data on the security issues of all U.S. non-financial public firms in the period between January 1, 2000 and December 31, 2014. For all these issues, we extract information such as the amount of proceeds and name(s) of the

[3] Note that it concerns here top-tier underwriters and not top-tier advisors. Although some overlap exists between top-tier underwriters and top-tier advisors, we believe that using a top-tier underwriter as an acquisition advisor should not lead to more value created for the advisee's shareholders.

book runner(s). Similarly as for identifying top-tier advisors, we classify the top-10 investment banks by the value of issues they underwrote as top-tier underwriters and all other investment banks as non-top-tier (see Appendix D). Using this list of top-10 underwriters, we subsequently identify for every deal whether the acquirer employed a top-tier underwriter as an acquisition advisor. We then use this variable to instrument acquirer advisors in dual roles in the first stage of the Hausman specification test.

The results of the first stage are presented in column (1) of Table IV and indicate that the acquirer advisor is top-tier underwriter variable (i.e. our instrument) is a significant determinant (at the 5% level) of the choice between an acquirer advisor in a dual role and an acquirer advisor that only advises on the deal. The coefficient indicates that when the acquirer advisor is a top-tier underwriter the probability of an acquirer advisor in a dual role increases with 26.9%. As such, the instrument fulfills the relevance condition in that it is correlated with the endogenous independent variable. In addition, the presence of an acquirer advisor in a dual role is also positively related to the number of advisors for the acquirer, which indicates that having many advisors increases the chance that one of the advisors matches the underwriter of the security issue. Surprisingly, the likelihood of using an acquirer advisor in a dual role also increases when the target (and not when the acquirer) solicits the services of a top-tier advisor. The adjusted R^2 indicates that the model explains 29.1% of the choice between an acquirer advisor in a dual role and non-dual role advisor.

Subsequently, in order to test whether dual role advice for the acquirer is determined endogenously in the model, we obtain the fitted values of the first-stage (reduced form) equation and include them as additional regressors in the second-stage (structural) equation. The results of this analysis for acquirer and target shareholder value creation are presented in column (2) to (6) of Table IV. The coefficients are not significant for any of the measures of shareholder value creation. As such, we are not able to reject the null hypothesis that dual role advice for the acquirer is exogenously determined in the model. Therefore, we use standard OLS regression to study the effect of acquirer advisors in dual roles on acquirer and target shareholder value creation.

5.2.1 Acquirer Advisors in Dual Roles and Deal Premiums

Table V presents the results of the OLS regressions of dual role advice for the acquirer on deal premiums. The results indicate that the use of an acquirer advisor in a dual role indeed results in higher deal premiums. This is in line with hypothesis 1a stating that dual role advice for the acquirer increases the value for the target's shareholders as this creates a conflict of interest in

Table IV

Hausman Specification Test – Acquirer Advisors in Dual Roles

This table presents the results of the Hausman two-stage procedure for analyzing whether dual role advice for the acquirer is endogenously determined in the model. Column (1) contains the results of the first stage where the dependent variable is an acquirer advisor in a dual role. Column (2) to (6) contain the results of the second stage where the dependent variables are the different shareholder value creation measures and where the fitted values of the first stage are included to test for endogeneity. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	1st Stage	**2nd Stage**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	Acquirer Dual Role	***Premium 1 Day***	***Premium 1 Week***	***Premium 4 Weeks***	***3-Day CAR***	***7-Day CAR***
Acquirer Dual Role		6.626**	6.396**	6.055*	0.306	-0.384
		(2.945)	(2.981)	(3.207)	(1.176)	(1.229)
Acquirer Log of Assets	-0.058	8.662**	7.787*	8.601**	-0.484	-0.252
	(0.080)	(3.981)	(4.142)	(4.051)	(1.378)	(1.591)
Target Log of Assets	-0.033	-9.125**	-7.641*	-12.792***	-0.623	-1.176
	(0.094)	(4.441)	(4.595)	(4.529)	(1.608)	(1.761)
Acquirer ROA	-0.004	0.290	0.155	0.375	0.073	0.032
	(0.005)	(0.258)	(0.270)	(0.267)	(0.106)	(0.113)
Target ROA	0.007	-0.071	0.083	-0.167	-0.049	0.008
	(0.005)	(0.257)	(0.268)	(0.271)	(0.088)	(0.111)
Acquirer M/B Ratio	0.004	-0.169	-0.198	0.019	-0.110	-0.003
	(0.012)	(0.538)	(0.582)	(0.623)	(0.238)	(0.272)
Target M/B Ratio	-0.009	-1.751**	-1.971**	-2.073**	-0.321	-0.576
	(0.018)	(0.850)	(0.893)	(0.915)	(0.309)	(0.335)
Percentage Paid in Cash	0.000	-0.014	-0.019	-0.005	0.027	0.027
	(0.001)	(0.062)	(0.061)	(0.062)	(0.019)	(0.020)
No. of Competing Bidders	0.052	11.493***	12.199***	8.704*	-0.297	0.121
	(0.068)	(4.067)	(4.303)	(4.525)	(1.255)	(1.404)
Relative Size	0.000	0.021	0.002	-0.017	-0.005	-0.013
	(0.001)	(0.028)	(0.029)	(0.031)	(0.012)	(0.014)
Hostile	0.025	38.967***	32.846***	21.643**	5.091**	3.494
	(0.200)	(6.938)	(8.012)	(8.765)	(2.193)	(2.544)
Diversifying	-0.023	-5.266**	-4.373*	-7.433***	-0.358	-1.638
	(0.060)	(2.493)	(2.613)	(2.729)	(1.153)	(1.220)
Acquirer Top-Tier Advisor	0.085	2.559	3.864	5.530	-0.551	1.991
	(0.112)	(6.938)	(7.267)	(7.796)	(1.944)	(2.864)
Target Top-Tier Advisor	0.108*	-4.638	-2.727	1.212	-1.816	-0.486
	(0.061)	(3.347)	(3.495)	(3.890)	(1.278)	(1.534)
Acquirer No. of Advisors	0.120***	3.035	2.263	2.491	-1.937**	-1.263
	(0.026)	(2.886)	(3.016)	(3.145)	(0.980)	(1.172)
Target No. of Advisors	-0.048	-1.547	-1.971	-0.169	1.070	0.948
	(0.042)	(2.119)	(2.267)	(2.386)	(0.751)	(0.818)
Acquirer Advisor is Top-Tier Underwriter	0.269**					
	(0.109)					
Fitted Values First-Stage Equation		-6.551	-10.085	-10.239	8.533	1.484
		(19.190)	(20.226)	(21.825)	(5.797)	(8.099)
Observations	263	263	263	263	263	263
Adjusted R^2	0.291	0.163	0.145	0.115	0.147	0.125

which the advisor has an incentive to advise the bidder on making a higher offer. By providing biased advice to the acquirer, the advisor increases the likelihood that the deal is completed and increases the probability that it can obtain lucrative financing fees. Economically, the magnitude of the coefficient suggests that the use of an acquirer advisor in a dual role is associated with acquisition premiums that are 5.8 to 6.5 percentage points higher, depending on which prior share price chosen. Based on the median market value of the target firm's equity, this corresponds to an increase in value for the target firm's shareholders of between $65 million and $73 million.

Moreover, this result is in line with the results found in previous studies on the effect of dual role advice for acquirers on shareholder value creation (e.g. Allen et al., 2004; Ertugrul & Krishnan, 2014). However, Ertugrul and Krishnan (2014) find that acquisition premiums increase by 21 percentage points when the advisor is also the underwriter of the securities issued to finance the deal. The difference in this result can potentially be explained by the fact that for their sample of deals 46.2% issued equity to finance the deal. In our sample, only 5.7% of deals are financed with an equity issue. We believe that the conflict of interest arising from dual role advising is more severe in case equity or equity-like instruments are issued as these are generally associated with higher underwriting fees than debt or debt-like instruments (Altinkihc & Hansen, 2000; Gande, Puri & Saunders, 1999; Kim, Palia & Saunders, 2003), which might explain the bigger increase found by Ertugrul and Krishnan (2014).

As for the control variables, the results show that deal premiums are generally lower when the size of the target increases, ceteris paribus. In contrast, we find a significant positive relationship between acquirer size and deal premiums. Moeller et al. (2004) provide an explanation for this result by stating that managers of large firms overpay for targets as hubris is more of a problem for large firms. Furthermore, we find that deals that have a high number of competing bidders and hostile bids are associated with higher premiums. Similarly, we find that acquiring targets with high market-to-book ratio's and diversifying deals are associated with lower acquisition premiums. Additionally, acquirer ROA is found to have a significant positive effect on deal premium when calculated based on the share price 4 weeks prior to the announcement date, indicating that acquirers with better operating performance tend to pay higher deal premiums. All these results are consistent with the findings in previous research (Cotter & Zenner, 1994; Ertugrul & Krishnan, 2014; Morck et al., 1990; Rhodes-Kropf & Viswanathan, 2004; Rhodes-Kropf et al., 2005). Surprisingly, however, we also find that the deal premium is lower when the target solicits the services of a top-tier advisor. This contradicts the finding in previous research that top-tier advisors create more value for their clients com-

Table V

Effect of Acquirer Advisors in Dual Roles on Deal Premiums

This table presents the results of the ordinary least squares (OLS) regressions of acquirer advisors in dual roles on deal premiums measured as the offer price per share over the target closing price 1 day, 1 week and 4 weeks prior to the announcement date. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**	**(3)**
	OLS	**OLS**	**OLS**
	Premium 1 Day	***Premium 1 Week***	***Premium 4 Weeks***
Acquirer Dual Role	6.456**	6.135**	5.790*
	(2.973)	(3.022)	(3.257)
Acquirer Log of Assets	8.961**	8.248**	9.069**
	(3.866)	(3.996)	(3.956)
Target Log of Assets	-8.943**	-7.359	-12.506***
	(4.366)	(4.520)	(4.420)
Acquirer ROA	0.318	0.197	0.418*
	(0.241)	(0.250)	(0.249)
Target ROA	-0.116	0.014	-0.237
	(0.219)	(0.231)	(0.239)
Acquirer M/B Ratio	-0.219	-0.274	-0.059
	(0.519)	(0.556)	(0.592)
Target M/B Ratio	-1.688**	-1.875**	-1.974**
	(0.792)	(0.833)	(0.854)
Percentage Paid in Cash	-0.014	-0.018	-0.003
	(0.061)	(0.061)	(0.061)
No. of Competing Bidders	11.172***	11.706***	8.203*
	(3.901)	(4.120)	(4.332)
Relative Size	0.020	0.001	0.016
	(0.028)	(0.029)	(0.031)
Hostile	38.914***	32.764***	21.560**
	(6.683)	(7.904)	(8.686)
Diversifying	-5.083**	-4.091	-7.147***
	(2.482)	(2.602)	(2.700)
Acquirer Top-Tier Advisor	0.630	0.896	2.516
	(3.588)	(3.584)	(3.793)
Target Top-Tier Advisor	-5.369*	-3.851	0.071
	(3.052)	(3.085)	(3.448)
Acquirer No. of Advisors	2.267	1.081	1.291
	(1.641)	(1.665)	(1.690)
Target No. of Advisors	-1.232	-1.486	0.324
	(1.846)	(1.977)	(2.083)
Observations	263	263	263
Adjusted R^2	0.166	0.147	0.118

pared to lower tier advisors (Bowers & Miller, 1990; Golubov et al., 2012; Kale et al., 2003; Rau, 2000). Yet, this result only holds when the deal premium is measured as the offer price per share over the target closing price 1 day prior to the announcement date. Overall, our models explain 11.8% to 16.6% in the variation of acquisition premiums.

5.2.2 Acquirer Advisors in Dual Roles and Acquirer Announcement Returns

Table VI presents the results of the OLS regressions of dual role advice for the acquirer on acquirer announcement returns. The results show that the use of a dual role advisor for the acquirer does not result in statistically significant higher or lower acquirer announcement returns. This finding is not in line with the conflict of interest hypothesis and this study therefore do not find prove for hypothesis 1a stating that acquirer advisors in dual roles have a negative effect on shareholder value creation for the acquirer. In addition, this conclusion is inconsistent with earlier studies that found a significant negative effect of acquirer advisors in dual roles on acquirer announcement returns (Ertugrul & Krishnan, 2014). Acquirer shareholders in general appear not to be concerned with advisors in dual roles. This is surprising as we have seen that soliciting the services of such advisors results in higher target premiums and therefore put the acquirer at risk of overpaying.

It could be, however, that there is no significant effect because acquirer's shareholders see the advantages of having a dual role advisor (i.e. shorter deal completion time and lower costs of information production in the financing stage) as countering the disadvantage (i.e. the higher deal premium resulting from the conflict of interest). To find out whether or not acquirer's shareholders have reason to believe that these advantages outweigh the disadvantages, we first perform a regression with completion time as dependent variable[4]. Doing so, we do not find a significant effect of dual role advice for the acquirer on deal completion time. Moreover, lower costs of information production in the financing stage should have an effect on total advisory fees paid by acquirers. Unfortunately, we are not able to formally test the effect of dual role advice for the acquirer on total advisory fees paid given the limited number of acquirers disclosing the fees paid to their advisors. For the acquirers that do report fees paid to their advisor the median value is $12 million, which is substantially lower than the premium increase we found earlier of $65 million to $73 million when acquirers use dual role advisors. It is therefore highly unlikely that a reduction in fees will offset the higher

[4] Completion time is calculated as the difference in days between the acquisition announcement date and the date on which the acquisition becomes effective.

Table VI

Effect of Acquirer Advisors in Dual Roles on Acquirer Announcement Returns

This table presents the results of the ordinary least squares (OLS) regressions of acquirer advisors in dual roles on acquirer announcement returns using a 3-day and 7-day event window. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**
	OLS	**OLS**
	3-Day CAR	***7-Day CAR***
Acquirer Dual Role	0.527	-0.346
	(1.139)	(1.189)
Acquirer Log of Assets	-0.874	-0.320
	(1.364)	(1.527)
Target Log of Assets	-0.861	-1.217
	(1.623)	(1.751)
Acquirer ROA	0.038	0.026
	(0.103)	(0.107)
Target ROA	0.009	0.018
	(0.081)	(0.095)
Acquirer M/B Ratio	-0.045	0.008
	(0.231)	(0.264)
Target M/B Ratio	-0.403	-0.591*
	(0.306)	(0.326)
Percentage Paid in Cash	0.026	0.027
	(0.019)	(0.020)
No. of Competing Bidders	0.121	0.193
	(1.229)	(1.299)
Relative Size	-0.004	-0.013
	(0.012)	(0.014)
Hostile	5.160**	3.506
	(2.173)	(2.424)
Diversifying	-0.597	-1.680
	(1.137)	(1.205)
Acquirer Top-Tier Advisor	1.961	2.428
	(1.360)	(1.542)
Target Top-Tier Advisor	-0.864	-0.321
	(1.117)	(1.254)
Acquirer No. of Advisors	-0.937	-1.089
	(0.728)	(0.723)
Target No. of Advisors	0.660	0.876
	(0.716)	(0.763)
Observations	263	263
Adjusted R^2	0.145	0.128

deal premiums that are a result of acquirer advisors in dual roles.

Some control variables show to have a significant effect on acquirer announcement returns. We find that acquiring targets with higher market-to-book ratio results in 0.6 percentage point lower acquirer announcement returns, which indicates that acquirer shareholders respond negatively on higher valued targets. Other studies confirm this effect (e.g. Ertugrul & Krishnan, 2014) and it is generally accepted that target market-to-book ratios have an influence on acquirer announcement returns (Moeller, 2010). Also, hostile bids prove to have a significant and positive effect on the 3-day announcement return. Apparently, acquirer shareholders agree with management that the target will add a lot of value to their company and believe this added value outweighs the higher deal premium paid, which is the case for hostile deals as we have seen earlier. The explanatory power of our model is good with adjusted R^2 values standing at 14.5% (3-Day CAR) and 12.8% (7-Day CAR).

5.3 Effect of Target Advisors in Dual Roles on Shareholder Value

Similarly as for dual role advice for the acquirer, we also control for the potential endogenous nature of dual role advice for the target. In doing so, we use a dummy variable indicating whether or not the acquirer has an underwriter relationship with (one of) the target advisor(s) to instrument dual role advice for the target. This dummy takes on the value 1 if the acquirer has used (one of) the target advisor(s) for underwriting its securities or syndicate its loans during the five years prior to the announcement date. Given that acquirers tend to opt for services from banks with which they have prior relationships (Allen et al., 2004), the reasoning behind using this instrument is that having a past relationship with (one of) the target advisor(s) should increase the likelihood that the acquirer uses it again to underwrite its securities. However, having a relationship with (one of) the target advisor(s) should not affect shareholder value creation. To construct this variable, we again employ the ThomsonOne SDC Global New Issues database and download data on the security issues of all acquirers in our sample in the 5-year prior to the announcement date. On the basis of this, we identify for every deal whether or not the acquirer has used (one of) the target advisor(s) at least once for underwriting its security issues or syndicate its loans. We then use this variable to instrument target advisors in dual roles in the first stage of the Hausman specification test.

The results of the first stage are presented in column (1) of Table VII and indicate that the acquirer has underwriter relationship with target advisor variable is a significant predictor (at the 5% level) of the presence of a target advisor in a dual role. The coefficient indicates that when the acquirer has an underwriter relationship with (one of) the target advisor(s) the proba-

Table VII

Hausman Specification Test – Target Advisors in Dual Roles

This table presents the results of the Hausman two-stage procedure for analyzing whether dual role advice for the target is endogenously determined in the model. Column (1) contains the results of the first stage where the dependent variable is dual role advice for the target. Column (2) to (6) contain the results of the second stage where the dependent variables are the different shareholder value creation measures and where the fitted values of the first stage are included to test for endogeneity. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	1st Stage	**2nd Stage**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	Target Dual Role	***Premium 1 Day***	***Premium 1 Week***	***Premium 4 Weeks***	***3-Day CAR***	***7-Day CAR***
Target Dual Role		-4.186	-3.036	-7.674	0.202	1.069
		(4.614)	(4.737)	(5.035)	(1.793)	(1.957)
Acquirer Log of Assets	0.040	5.889	4.925	7.298*	-0.284	-0.146
	(0.054)	(3.938)	(4.044)	(4.298)	(1.530)	(1.671)
Target Log of Assets	-0.093	-3.657	-1.540	-9.710*	-2.089	-1.519
	(0.059)	(4.777)	(4.905)	(5.213)	(1.856)	(2.026)
Acquirer ROA	-0.005	0.599**	0.509*	0.560*	-0.033	0.010
	(0.003)	(0.264)	(0.271)	(0.288)	(0.103)	(0.112)
Target ROA	0.004	-0.322	-0.218	-0.332	0.069	0.030
	(0.003)	(0.238)	(0.244)	(0.259)	(0.092)	(0.101)
Acquirer M/B Ratio	-0.012	0.637	0.657	0.422	-0.220	-0.041
	(0.008)	(0.652)	(0.669)	(0.711)	(0.253)	(0.276)
Target M/B Ratio	-0.019	-0.616	-0.690	-1.416	-0.660*	-0.652
	(0.012)	(0.966)	(0.991)	(1.054)	(0.375)	(0.410)
Percentage Paid in Cash	-0.000	0.011	0.010	0.010	0.020	0.026
	(0.001)	(0.052)	(0.054)	(0.057)	(0.020)	(0.022)
No. of Competing Bidders	0.013	11.224***	11.715***	8.346**	0.208	0.192
	(0.053)	(3.726)	(3.826)	(4.067)	(1.448)	(1.581)
Relative Size	0.001	-0.015	-0.037	-0.003	0.004	-0.011
	(0.000)	(0.032)	(0.033)	(0.035)	(0.012)	(0.014)
Hostile	0.028	38.954***	32.800***	21.601**	5.167	3.504
	(0.126)	(8.770)	(9.006)	(9.571)	(3.408)	(3.720)
Diversifying	-0.022	-4.437*	-3.356*	-6.863**	-0.796	-1.717
	(0.038)	(2.668)	(2.740)	(2.912)	(1.037)	(1.132)
Acquirer Top-Tier Advisor	-0.051	5.685	6.150*	5.946	1.433	2.147
	(0.047)	(3.541)	(3.637)	(3.865)	(1.376)	(1.502)
Target Top-Tier Advisor	0.028	-7.220**	-5.987*	-0.669	-0.230	-0.213
	(0.042)	(3.135)	(3.219)	(3.421)	(1.218)	(1.330)
Acquirer No. of Advisors	0.027	1.366	-0.019	1.079	-0.502	-1.035
	(0.021)	(1.662)	(1.706)	(1.814)	(0.646)	(0.705)
Target No. of Advisors	0.128***	-10.171**	-11.234**	-4.629	2.544	1.385
	(0.027)	(4.235)	(4.348)	(4.621)	(1.645)	(1.796)
Acquirer has Underwriter Relationship with Target Advisor	0.102** (0.041)					
Fitted Values First-Stage Equation		68.183** (28.507)	73.165** (29.272)	42.323 (31.111)	-14.386 (11.077)	-4.716 (12.092)
Observations	263	263	263	263	263	263
Adjusted R^2	0.170	0.167	0.152	0.116	0.147	0.126

bility of a target advisor in a dual role increases with 10.2%. As such, this instrument also fulfills the relevance condition in that it is correlated with the endogenous independent variable. Furthermore, the probability of a target advisor in a dual role also increases when the number of target advisors increases. The adjusted R^2 indicates that the model explains 17.0% of the choice between a target advisor in a dual role and an advisor only advising on the deal.

The results from the second stage are reported in column (2) to (6) of Table VII. Interestingly, the coefficients for the fitted values obtained from the first-stage (reduced form) equation are only significant for the deal premium when measured as the offer price divided by the target closing price 1 day or 1 week prior to the announcement of the deal. When we include the fitted values as additional regressors in the structural equation using the acquirer announcement return measures and 4 week deal premium as dependent variables we do not find evidence for endogeneity. As such, the results do provide some support for, but do not unambiguously point to, dual role advice for the target being endogenously determined in the relationship with shareholder value creation. Nevertheless, we extend the simple OLS regression with a 2SLS regression to correct for potential endogeneity bias. In this procedure, the first stage models the effect of target advisors in dual roles on shareholder value creation, while the second stage corrects for the endogeneity bias by including the exogenous instrument (Golubov et al., 2012). The central idea behind this approach is that using an additional exogenous variable enables to extract variation in the endogenous variable that it is unrelated to these problems and that this variation can be used to estimate the effect on the dependent variable (Stock, 2001).

5.3.1 Target Advisors in Dual Roles and Deal Premiums

Table VIII presents the results of the second stage 2SLS regressions of dual role advice for the target on deal premiums. To show how these results differ from when we do not control for endogeneity, OLS results are presented in Appendix E. Different from what we expected, the coefficients for dual role advice for the target are positive when we control for the potential endogenous choice for the target advisor to be in a dual role but are all insignificant. This is inconsistent with hypothesis 1b stating that dual role advice for the target creates a conflict of interest in which the advisor has an incentive to convince the target of accepting an offer that does not maximize shareholder value. In addition, this result runs counter to the results presented by Siming (2009). He found that, even after controlling for unobservable characteristics that may explain the use of a target advisor in a dual role, deals with a target advisor in a dual role are completed at 11.8 to 18.5 percentage points lower premiums.

Table VIII

Effect of Target Advisors in Dual Roles on Deal Premiums

This table presents the results of the second stage of the two-stage least squares (2SLS) regressions of target advisors in dual roles on deal premiums measured as the offer price per share over the target closing price 1 day, 1 week and 4 weeks prior to the announcement date. First-stage regressions are not presented for brevity. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**	**(3)**
	2SLS 2nd Stage	**2SLS 2nd Stage**	**2SLS 2nd Stage**
	Premium 1 Day	***Premium 1 Week***	***Premium 4 Weeks***
Target Dual Role	63.997	70.129	34.649
	(46.551)	(48.674)	(37.649)
Acquirer Log of Assets	5.889	4.925	7.298
	(5.585)	(5.881)	(4.933)
Target Log of Assets	-3.657	-1.540	-9.710*
	(7.717)	(7.642)	(6.219)
Acquirer ROA	0.599	0.509	0.560*
	(0.377)	(0.397)	(0.304)
Target ROA	-0.322	-0.218	-0.332
	(0.310)	(0.331)	(0.289)
Acquirer M/B Ratio	0.637	0.657	0.422
	(0.836)	(0.902)	(0.767)
Target M/B Ratio	-0.616	-0.690	-1.416
	(1.230)	(1.281)	(1.107)
Percentage Paid in Cash	0.011	0.010	0.010
	(0.069)	(0.069)	(0.063)
No. of Competing Bidders	11.224*	11.715	8.346
	(6.613)	(7.217)	(5.150)
Relative Size	-0.015	-0.037	-0.003
	(0.049)	(0.052)	(0.043)
Hostile	38.954***	32.800***	21.601**
	(7.245)	(9.030)	(9.160)
Diversifying	-4.437	-3.356	-6.863**
	(3.362)	(3.517)	(3.077)
Acquirer Top-Tier Advisor	5.685	6.150	5.946
	(5.319)	(5.550)	(4.574)
Target Top-Tier Advisor	-7.220*	-5.987	-0.669
	(4.093)	(4.183)	(3.902)
Acquirer No. of Advisors	1.366	-0.019	1.079
	(2.609)	(2.711)	(2.101)
Target No. of Advisors	-10.171	-11.234*	-4.629
	(6.444)	(6.666)	(5.436)
Observations	263	263	263

A potential explanation for this conflicting result can be found in the fact that only 23 deals with a target advisor in a dual role are included in our sample. Although the relative contribution of 9% of the total sample corresponds to the 9.5% found by Siming (2009), the absolute number of deals with a target advisor in a dual role included in his sample was with 97 deals considerably higher. Given the limited number of observations, it is difficult to make any meaningful inferences from the data (Saunders et al., 2009). However, increasing the amount of deals involving a target advisor in a dual role would require us to extend our sampling period, thereby increasing the amount of manual work and potentially introducing more time-varying effects in our data (Alexandridis et al., 2011).

As for the control variables, the results show that only hostile bids are associated with a significantly higher deal premium for all three measures. Several other deal and firm characteristics show to have a significant negative effect on only one of the three measures: target size, diversifying deals, the target employing a top-tier advisor and the number of advisors hired by the target. Of these, the negative coefficients for target top-tier advisor and target number of advisors are particularly surprising. Lastly, acquirer operating performance and number of competing bidders have a significant positive effect on the deal premium when measured over the target price 4 weeks and 1 day prior to the deal respectively.

5.3.2 Target Advisors in Dual Roles and Acquirer Announcement Returns

Table IX presents the results of the second stage 2SLS regressions of dual role advice for the target on acquirer announcement returns. To show how these results differ from when we do not control for endogeneity, OLS results are presented in Appendix F. The 2SLS results indicate that the use of a target advisor in a dual role does not result in statistically significant higher or lower announcement returns for the acquirer. This finding does not correspond with the conflict of interest hypothesis and we therefore do not find support for hypothesis 1b stating that dual role advice for the target has a positive effect on acquirer shareholder value creation. Furthermore, this conclusion is inconsistent with earlier studies that did find such an effect (Siming, 2009). However, this is less surprising compared to the statistically non-significant relationship between dual role advice for the acquirer and acquirer announcement returns. This is because we did not find an effect of dual role advice for the target on deal premiums to begin with. Nevertheless this result is unforeseen.

Once again, we can conclude that acquirer shareholders in general appear not to be concerned with advisors in dual roles. As with acquirer advisors in dual roles, we do not find support for the potential advantages of enlisting a target advisor in a dual role. Again, a 2SLS

Table IX

Effect of Target Advisors in Dual Roles on Acquirer Announcement Returns

This table presents the results of the second stage of the two-stage least squares (2SLS) regressions of target advisors in dual roles on acquirer announcement returns using a 3-day and 7-day event window. First-stage regressions are not presented for brevity. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(2)	**(4)**
	2SLS 2nd Stage	**2SLS 2nd Stage**
	3-Day CAR	***7-Day CAR***
Target Dual Role	-14.184	-3.648
	(12.388)	(11.797)
Acquirer Log of Assets	-0.284	-0.146
	(1.669)	(1.636)
Target Log of Assets	-2.089	-1.519
	(2.222)	(2.025)
Acquirer ROA	-0.033	0.010
	(0.128)	(0.123)
Target ROA	0.069	0.030
	(0.100)	(0.108)
Acquirer M/B Ratio	-0.220	-0.041
	(0.293)	(0.306)
Target M/B Ratio	-0.660*	-0.652*
	(0.388)	(0.386)
Percentage Paid in Cash	0.020	0.026
	(0.022)	(0.021)
No. of Competing Bidders	0.208	0.192
	(1.872)	(1.435)
Relative Size	0.004	-0.011
	(0.015)	(0.015)
Hostile	5.167**	3.504
	(2.413)	(2.525)
Diversifying	-0.796	-1.717
	(1.217)	(1.197)
Acquirer Top-Tier Advisor	1.433	2.147
	(1.444)	(1.545)
Target Top-Tier Advisor	-0.230	-0.213
	(1.313)	(1.319)
Acquirer No. of Advisors	-0.502	-1.035
	(0.880)	(0.793)
Target No. of Advisors	2.544	1.385
	(1.839)	(1.693)
Observations	263	263

regression with completion time as dependent variable yields statistically insignificant results. The number of observations with reported advisor fees prevents us once more from doing a formal test to find out if advisory fees are lower when dual role advisors are made use of. Yet, finding no support for lower deal premiums and shorter completion times for deals with target advisors in dual roles gives us reason to believe that acquirer shareholders can rightfully disregard the influence of target advisors in dual roles.

Additionally, some control variables show to have a significant effect on acquirer announcement returns. Target market-to-book ratio shows to have a significant negative effect on acquirer announcement returns, indicating that acquirer shareholders do not view higher valued targets favorably. Similarly, hostile bids are associated with higher 3-Day CAR (but not with higher 7-Day CAR).

5.4 Moderating Effect of Issue Proceeds

In order to further investigate the conflict of interest that lies at the foundation of differences in shareholder value creation, this study hypothesized that the effect of dual role advising on shareholder value creation should become stronger when proceeds of the associated security issue increase. More specifically, assuming that financing fees are directly related to the proceeds of an associated security issue, performing dual roles in deals associated with larger security issues would result in higher financing fees than performing dual roles in deals associated with smaller security issues. This, in turn, means that deals associated with larger security issues may create more severe conflicts of interests between the advisors and the advisees than deals associated with smaller security issues. In order to formally test this hypothesis, we conduct the analyses reported in Table V, VI, VIII and IX with an additional interaction variable that interacts either acquirer or target advisor in a dual role with the amount of proceeds of the associated security issue.

In doing so, this study follows the same procedure as followed by Ertugrul and Krishnan (2010) to test for the moderating effect of transaction value. However, in their interaction model specification they do not include transaction value as an additional independent variable. According to Brambor, Clark and Golder (2006), all constitutive terms should be included separately in the interaction model specification. Excluding transaction value as an individual regressor in the interaction model specification would suggest that there is no transaction value when there is no dual role advisor (i.e. when the dual role advisor dummy takes on the value

0), which is not the case in practice[5]. Similarly, every deal always has a certain amount of proceeds independent of what value the dual role advising dummy takes on. As such, both constitutive terms (i.e. either acquirer or target dual role advisor dummy and issue proceeds) are included in the regressions.

5.4.1 Moderating Effect of Issue Proceeds for Acquirer Advisors in Dual Roles

Table X presents the results of the OLS regressions to test for the moderating effect of issue proceeds in the relationship between acquirer advisors in a dual role and deal premiums as well as acquirer announcement returns. Since the acquirer's decision to enlist an advisor in a dual role proved to be exogenously determined, we are able to use OLS estimation techniques. The results show that the interaction variable is not a significant predictor of acquirer/target shareholder value creation. This indicates that deals with acquirer advisors in dual roles do not commensurate with smaller conflicts of interest in case of smaller security issues. This finding, in turn, is not in line with our extension of the conflict of interest hypothesis and we therefore do not find prove for hypothesis 2a stating that the effect of dual role advice for the acquirer becomes stronger when the proceeds of the associated security issue increase.

This conclusion is also inconsistent with the finding of Ertugrul and Krishnan (2010) that the association between dual role advice for the acquirer and acquirer announcement returns becomes more negative for transactions of larger size. There are two methodological reasons why we believe our results are different. Firstly, our interaction model is, according to Brambor et al. (2006), better specified and therefore yields more reliable results. Secondly, we consider our proxy for possible financing fees better than that of Ertugrul and Krishnan (2010) since issue proceeds of deal related security issues are a better indicator of potential financing fees than transaction value.

More generally, one explanation for our insignificant results could be that issue proceeds are not the sole determinant of financing fees. Besides the amount of proceeds, the number of underwriters used and the type of securities issued could for example also have an effect on the conflict of interest that investment banks face. When the number of underwriters increases, the marginal stake of each underwriter decreases. As a result, leaving the amount of proceeds constant, financing fees per investment bank will be lower in deals with more under-

[5] The misspecification of Ertugrul and Krishan (2010) should not be looked at as an isolated case. In fact, Brambor et al. (2006) examine 156 articles employing interaction models and find that only 10% of them correctly calculate and interpret the coefficients.

Table X

Moderating Effect of Issue Proceeds for Acquirer Advisors in Dual Roles

This table presents the results of the ordinary least squares (OLS) regressions of each explanatory variable including the interaction between the dual role advice for the acquirer dummy and issue proceeds on the deal premium and acquirer announcement returns. We include both constitutive terms in the model specification. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	(2)	(3)	(4)	(5)
	OLS	**OLS**	**OLS**	**OLS**	**OLS**
	Premium 1 Day	***Premium 1 Week***	***Premium 4 Weeks***	***3-Day CAR***	***7-Day CAR***
Acquirer Dual Role	6.971**	6.149*	6.457*	0.518	-0.733
	(3.481)	(3.524)	(3.751)	(1.299)	(1.412)
Issue Proceeds	0.000	0.000	0.001	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Interaction: Acquirer Dual Role	-0.000	-0.000	-0.000	-0.000	0.000
x Issue Proceeds	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Acquirer Log of Assets	8.359**	7.540*	8.275**	-0.886	-0.231
	(3.823)	(3.944)	(3.927)	(1.372)	(1.545)
Target Log of Assets	-10.727**	-9.596**	-14.860***	-0.902	-1.027
	(4.398)	(4.469)	(4.434)	(1.691)	(1.807)
Acquirer ROA	0.283	0.162	0.372	0.037	0.034
	(0.242)	(0.250)	(0.250)	(0.105)	(0.110)
Target ROA	-0.170	-0.063	-0.309	0.008	0.019
	(0.224)	(0.232)	(0.244)	(0.082)	(0.096)
Acquirer M/B Ratio	-0.219	-0.279	-0.059	-0.046	0.006
	(0.515)	(0.548)	(0.590)	(0.232)	(0.264)
Target M/B Ratio	-1.870**	-2.144**	-2.215**	-0.409	-0.593*
	(0.800)	(0.838)	(0.864)	(0.314)	(0.337)
Percentage Paid in Cash	-0.029	-0.036	-0.023	0.026	0.029
	(0.062)	(0.061)	(0.061)	(0.019)	(0.021)
Number of Competing Bidders	11.169***	11.522***	8.194**	0.115	0.100
	(3.866)	(4.015)	(4.135)	(1.243)	(1.318)
Relative Size	0.014	-0.007	0.008	-0.004	-0.013
	(0.028)	(0.029)	(0.031)	(0.012)	(0.014)
Hostile	38.224***	31.643***	20.645**	5.135**	3.445
	(6.713)	(7.979)	(8.221)	(2.212)	(2.529)
Diversifying	-4.780**	-3.610	-6.746**	-0.586	-1.658
	(2.479)	(2.586)	(2.677)	(1.148)	(1.215)
Acquirer Top-Tier Advisor	0.843	1.167	2.797	1.966	2.408
	(3.588)	(3.587)	(3.786)	(1.366)	(1.550)
Target Top-Tier Advisor	-5.396*	-3.783	0.037	-0.862	-0.264
	(3.064)	(3.098)	(3.481)	(1.128)	(1.269)
Acquirer Number of Advisors	2.477	1.324	1.567	-0.933	-1.122
	(1.722)	(1.770)	(1.798)	(0.736)	(0.723)
Target Number of Advisors	-1.597	-1.993	-0.159	0.650	0.889
	(1.871)	(1.971)	(2.048)	(0.722)	(0.769)
Observations	263	263	263	263	263
Adjusted R^2	0.174	0.167	0.134	0.138	0.122

writers, weakening the conflict of interest between advisor and advisee.

Furthermore, underwriting fees for debt are much lower than underwriting fees for equity. Corporate debt and loan underwriting spreads are found to be in the range of 1% to 2% while the underwriting spreads found for seasoned equity offerings are found to be between 5% and 6% (Altinkihc & Hansen, 2000; Chaplinsky & Erwin, 2009; Gande et al., 1999; Kim et al., 2003). Given its more lucrative character, one could theorize that the conflict of interest for dual role advisors will be stronger when equity instruments are issued compared to debt instruments. Testing this effect would require us to add another layer to the multiplicative interaction model. However, our sample does not enable us to analyze this effect as only 5.7% of the deals in our sample used a public equity issue to finance the deal as one of several financing methods. Moreover, only 7 deals (2.7%) were identified which are financed using solely public equity. Performing formal tests is therefore impossible as one would need more observations to arrive at meaningful and reliable results.

5.4.2 Moderating Effect of Issue Proceeds for Target Advisors in Dual Roles

Similarly as for testing the moderating impact of issue proceeds on the effects of dual role advice for the acquirer, we also test the moderating effect of issue proceeds for dual role advice for the target. In doing so, one has to consider the endogenous nature of dual role advice for the target in relation to some of the dependent variables. As the interaction variable between dual role advice for the target and issue proceeds is an additional endogenous variable, we have to add another instrument to our regression specification to correct for potential endogeneity bias. We use the interaction between the (instrumental) variable that indicates if the acquirer has an underwriter relationship with the target advisor and issue proceeds to instrument this new interaction variable. According to Becker (2007), this variable is a valid instrumental variable for the interaction variable as long as the instrumental variable that specifies whether or not an acquirer has a prior relationship with the target's advisor is a valid one for target advisors in a dual role.

Table XI presents the results of the second stage 2SLS regressions. To show how these results differ from when we do not control for endogeneity, OLS results are presented in Appendix G. Based on the argument that conflict of interest would increase when the amount of proceeds of the associated security issue increase, we would expect a significant negative (positive) coefficient estimate on the interaction variable with deal premiums (acquirer announcement returns) as dependent variable. The results show, however, that the interaction variable is not significant, neither for deal premiums nor acquirer announcement returns.

Table XI

Moderating Effect of Issue Proceeds for Target Advisors in Dual Roles

This table presents the results of the second stage of the two-stage least squares (2SLS) regressions of each explanatory variable including the interaction between the dual role advice for the target dummy and issue proceeds on the deal premium and acquirer announcement returns. We include both constitutive terms in the model specification. OLS and first-stage regressions are not presented for brevity. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
	2SLS 2nd Stage	**2SLS 2nd Stage**	**2SLS 2nd Stage**	**2SLS 2nd Stage**	**2SLS 2nd Stage**
	Premium 1 Day	***Premium 1 Week***	***Premium 4 Weeks***	***3-Day CAR***	***7-Day CAR***
Target Dual Role	101.392	94.890	54.873	-16.446	0.029
	(78.440)	(74.166)	(59.979)	(17.641)	(16.113)
Issue Proceeds	0.001**	0.001**	0.001**	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Interaction: Target Dual Role x Issue Proceeds	-0.005	-0.004	-0.003	0.000	-0.000
	(0.004)	(0.003)	(0.003)	(0.001)	(0.000)
Acquirer Log of Assets	6.953	5.814	8.085	-0.317	-0.073
	(6.728)	(6.354)	(5.562)	(1.722)	(1.598)
Target Log of Assets	-7.713	-6.140	-14.107**	-2.172	-1.585
	(8.750)	(8.352)	(6.952)	(2.331)	(1.969)
Acquirer ROA	0.856	0.683	0.704	-0.048	0.034
	(0.603)	(0.551)	(0.458)	(0.148)	(0.136)
Target ROA	-0.690	-0.530	-0.609	0.080	0.005
	(0.535)	(0.492)	(0.447)	(0.128)	(0.132)
Acquirer M/B Ratio	0.299	0.304	0.091	-0.222	-0.051
	(0.867)	(0.869)	(0.800)	(0.290)	(0.299)
Target M/B Ratio	-0.433	-0.755	-1.531	-0.703	-0.602
	(1.842)	(1.682)	(1.529)	(0.438)	(0.420)
Percentage Paid in Cash	0.016	0.005	0.003	0.019	0.027
	(0.093)	(0.083)	(0.075)	(0.024)	(0.021)
Number of Competing Bidders	5.307	6.765	3.958	0.389	-0.210
	(9.470)	(8.833)	(6.453)	(2.062)	(1.657)
Relative Size	0.001	-0.024	0.009	0.003	-0.010
	(0.068)	(0.062)	(0.057)	(0.015)	(0.015)
Hostile	24.320*	20.360	10.522	5.581*	2.544
	(13.574)	(13.470)	(9.627)	(3.133)	(3.618)
Diversifying	4.024	3.689	-0.627	-1.060	-1.137
	(7.048)	(6.482)	(5.864)	(1.713)	(1.701)
Acquirer Top-Tier Advisor	8.160	7.914	7.429	1.304	2.368
	(7.486)	(7.109)	(5.791)	(1.621)	(1.694)
Target Top-Tier Advisor	-7.422	-5.883	-0.505	-0.177	-0.274
	(5.032)	(4.708)	(4.329)	(1.371)	(1.351)
Acquirer Number of Advisors	2.189	0.851	1.898	-0.496	-1.011
	(3.454)	(3.234)	(2.715)	(0.900)	(0.810)
Target Number of Advisors	-18.442	-17.398	-9.893	2.927	0.691
	(12.482)	(11.524)	(9.840)	(2.855)	(2.579)
Observations	263	263	263	263	263

As such, this study does not find evidence supporting the existence of greater conflicts of interest in deals with a target advisor in a dual role that are also associated with larger security issues. Although this finding does not correspond with what is suggested in hypothesis 2b, this is less surprising compared to the statistically non-significant moderating effect of issue proceeds found for acquirer advisors in dual roles. This is because this study did not find an effect of dual role advice for the target on shareholder value creation to begin with.

5.5 Summary and Implications of Findings

Besides contributing to the literature on dual role advisors and financial advisor selection in general, the findings outlined above also have important implications for managers, policy makers and shareholders alike. Firstly, this study proves that acquirer advisors in dual roles face a conflict of interest as the prospect of fees from underwriting any securities issued to finance the deal on top of regular advisory fees makes it more profitable for the advisor to support the completion of the deal. Managers of acquiring firms should be aware that this conflict of interest will lead them to overpay for targets and should wonder if the advantages of employing a dual role advisor are worth paying a higher deal premium. At the same time, this study does not find a significant effect of acquirer advisors in dual roles on acquirer announcement returns. Given the fact that acquirer advisors in dual roles lead to higher deal premiums, this is surprising and indicates that shareholders of acquirers should be more attentive to acquisitions where their advisors provide both advisory services and are involved in the deal financing.

Secondly, this study does not find evidence supporting the notion that either deal premiums or acquirer announcement returns are impacted by target advisors in dual roles. This implies that managers of targeted firms do not have any monetary incentive to disapprove with its advisors being involved in the underwriting of deal related securities. At the same time, managers of acquiring firms do not have any monetary incentive to involve the target advisor in the underwriting of securities being issued to finance the deal.

Thirdly, this study finds no support for a significant moderating effect of issue proceeds on the relationship between acquirer/target advisors in dual roles and acquirer or target shareholder value creation. This means that as long as managers of acquiring firms are aware of the inherent conflict of interest when enlisting advisors in dual roles, they do not have to worry that this conflict of interest becomes stronger when proceeds of the deal-related security issue(s) increase. Similarly, managers of target firms should not worry that the conflict of interest does come to the forefront even when deals are associated with sizeable security issues.

Lastly, to prevent investment banks from balancing on the thin line between unlawful and inappropriate behavior, formal rules and regulations are required inhibiting the influence of acquirer advisors in dual roles in the bidding process.

6. CONCLUSION

In order to shed light on the value created/destroyed by acquisition advisors in dual roles, this research studies the effect of dual role advisors on shareholder value creation as well as the moderating impact of deal-related security issue proceeds on this relationship. Based on the literature, a conceptual framework is developed to categorize all deals depending on whether an acquirer or target advisor in a dual role is employed. Moreover, based on the conflict of interest hypothesis outlined in the existing literature on dual role advisors (Allen et al., 2004; Ertugrul & Krishnan, 2014; Siming, 2009), several hypotheses are put forward to explain the effect of dual role advising on shareholder value creation.

Building on a sample of 263 acquisitions involving U.S. non-financial firms in the period between January 1, 2000 and December 31, 2014, this study provides only partial support for the fear that dual role advisors provide biased advice in order to secure themselves of lucrative financing fees. More specifically, it is shown that deals with acquisition advisors in dual roles are completed at significant higher premiums, increasing transaction values with $65 million to $73 million for the median market value target. However, this study does not find that this association increases in magnitude with an increase in the total amount of proceeds of the deal-related security issue(s). It also does not find a significant association between dual role advice for the acquirer and acquirer announcement returns. Furthermore, after controlling for the proven endogenous nature of target advisors in dual roles, this study does not find evidence for an influence of target advisors in dual roles on either deal premiums or acquirer announcement returns. It also does not find a significant moderating role of issue proceeds in both relationships. As such, the conflict of interest seems only to be present in the case of acquirer advisors in dual roles. Yet, this conflict of interest does not become bigger with an increase in the proceeds of the deal-related security issue(s). This is surprising, as one would expect the conflict of interest to become bigger when the potential financing fees increase.

Although our study contributes to the literature and provides important implications for practitioners, a number of important limitations of this study need to be considered. Most importantly, the insignificant findings of target advisors in dual roles should be interpreted with

caution giving the relatively small number of deals with a target advisors in a dual role included in our sample. Moreover, with regard to the insignificant results this study finds for both acquirer and target advisors in dual roles on acquirer announcement returns, Siming (2009) notes that stock prices as much as one month prior to a deal might already reflect rumors about the deal, leading to insignificant results. Additionally, Servaes and Zenner (1996) point to an interesting limitation when it comes to controlling for deal characteristics. They argue that some of the deal characteristics will be determined by the advisor (e.g. method of payment) and therefore do not need to be controlled for. However, controlling for deal characteristics remains a dominant practice in the M&A literature.

Lastly, our study provides several directions for future research. First and foremost, future research should test the same hypotheses in different and larger samples, thereby including more deals involving target advisors in dual roles. Particularly the moderating role of issue proceeds in the relationship between dual role advisory and shareholder value is interesting and should be looked at more closely. Secondly, the moderating effect of the type of securities issued (i.e. equity, debt or synthesized loans) on the relationship between dual role advisory and shareholder value creation holds a lot of potential for future research. Finally, more research on the influence of dual role advisors on other dependent variables such as deal completion time, post-integration divesture rate or litigation by shareholders is necessary to determine the full impact of dual role advisors.

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Appendix A

Variable Definitions

Variable Name	Description
Independent variables	
Acquirer Dual Role	A dummy variable equal to 1 if the acquirer has employed a dual role advisor
Target Dual Role	A dummy variable equal to 1 if the target has employed a dual role advisor
Issue Proceeds	Total proceeds (including overallotment) of the security issue(s) associated with the specific deal (in million USD)
Dependent variables	
Acquirer 7-Day CAR	Cumulative returns of the acquirer over a three-day period around the announcement date (i.e. the cumulative returns from three days prior to three days after the announcement date) minus the predicted cumulative returns from a market model
Acquirer 3-Day CAR	Cumulative returns of the acquirer over a three-day period around the announcement date (i.e. the cumulative returns from one day prior to one day after the announcement date) minus the predicted cumulative returns from a market model
Deal Premium 4 Weeks	Percentage premium of the offer price per share over the target closing stock price 4 weeks prior to the announcement date
Deal Premium 1 Week	Percentage premium of the offer price per share over the target closing stock price 1 week prior to the announcement date
Deal Premium 1 Day	Percentage premium of the offer price per share over the target closing stock price 1 day prior to the announcement date
Control variables – Firm characteristics	
Acquirer Log of Assets	Acquirer log of total book value of assets (in million USD)
Target Log of Assets	Target log of total book value of assets (in million USD)
Acquirer ROA	Acquirer operating income last twelve months prior to the announcement date divided by book value of total assets
Target ROA	Target operating income last twelve months prior to the announcement date divided by book value of total assets

(Continued)

(Appendix A continued)

Acquirer M/B Ratio	Acquirer market value of total assets 4 weeks prior to the announcement date divided by the book value of total assets
Target M/B Ratio	Target market value of total assets 4 weeks prior to the announcement date divided by the book value of total assets
Industry: Manufacturing	A dummy variable equal to 1 if the acquirer is classified in the manufacturing industry
Industry: Services	A dummy variable equal to 1 if the acquirer is classified in the services industry
Industry: Trade	A dummy variable equal to 1 if the acquirer is classified in the trade industry
Control variables - Deal characteristics	
Percentage Paid in Cash	Percentage of the deal paid in cash (i.e. value paid in cash divided by total transaction value)
Number of Competing Bidders	Number of other entities bidding for the target (i.e. number of total bidders minus one)
Relative Size	Total deal value divided by the market value of the acquirer 4 weeks prior to the announcement date
Hostile	A dummy variable equal to 1 if the deal is hostile
Diversifying	A dummy variable equal to 1 if the acquirer's industry is different from the target's industry based on the Fama-French (1997) 49-industry classification
Acquirer Top-Tier Advisor	A dummy variable equal to 1 if the acquirer has employed at least one advisor ranking in the top-10 based on the value of deals they advised on over the sample period
Target Top-Tier Advisor	A dummy variable equal to 1 if the target has employed at least one advisor ranking in the top-10 based on the value of deals they advised on over the sample period
Acquirer Number of Advisors	Acquirer number of financial advisors
Target Number of Advisors	Target number of financial advisors
Instrumental variables	
Acquirer Number of Top-Tier Underwriter Relationships	Number of top-tier underwriters (other than the acquisition advisor) the acquirer has used for its security underwriting during the five years prior to the announcement date
Acquirer has Underwriter Relationship with Target Advisor	A dummy variable equal to 1 if the acquirer has used (one of) the target advisor(s) for its security underwriting during the five years prior to the announcement date

Appendix B

Top-10 Financial Advisors Ranked by Transaction Value

This table presents financial advisor ranking of the top-10 investment banks according to the value of deals on which they advised for our sample of 1,353 completed M&A transactions between U.S. non-financial public firms during the period January 1, 2000 to December 31, 2014 drawn from the ThomsonOne SDC M&A Database. Transaction value in US$ million and the number of deals advised by each advisor are presented. Credit for a deal is allocated fully to both the acquirer and target advisors and to each individual advisor in the case of multiple advisors for one company.

Rank	Financial Advisor	Transaction Value	Number of Deals
1	Goldman Sachs	1,494,303	270
2	Morgan Stanley	1,152,981	237
3	Bank of America Merrill Lynch[1]	1,095,614	263
4	JP Morgan	954,707	202
5	Barclays Capital[2]	862,744	170
6	Credit Suisse Group[3]	693,296	194
7	Citigroup	588,787	120
8	Lazard	365,217	85
9	Evercore Partners	345,894	42
10	UBS Investment Bank	316,458	120

[1] Including Merrill Lynch and Banc of America Securities which merged in 2008 to become Bank of America Merrill Lynch

[2] Including Lehman Brothers which was taken over by Barclays in 2008

[3] Including Credit Suisse First Boston under which the investment banking division operated until 2006

Appendix C

Correlation Matrix

The table presents pairwise correlations for the independent variables. Does not contain correlations for year dummies and instrumental variables. All variables are described in Appendix A. Whenever statistically significant we denote the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	Acquirer Dual Role	Target Dual Role	Issue Proceeds	Acquirer Log Assets	Target Log Assets	Acquirer ROA	Target ROA	Acquirer M/B Ratio	Target M/B Ratio	Percentage Paid in Cash
Target Dual Role	0.053									
Issue Proceeds	0.169***	0.060								
Acquirer Log of Assets	0.114*	0.033	0.367***							
Target Log of Assets	0.165***	0.067	0.421***	0.708***						
Acquirer ROA	-0.076	-0.137**	0.037	-0.081	-0.056					
Target ROA	0.036	0.042	0.145**	-0.007	-0.069	0.314***				
Acquirer M/B Ratio	0.000	-0.169***	0.000	-0.011	-0.067	0.309***	0.025			
Target M/B Ratio	0.050	-0.049	0.145**	0.130**	-0.108*	0.016	0.257***	0.232***		
Percentage Paid in Cash	0.018	-0.044	-0.026	-0.008	-0.267***	-0.077	-0.039	-0.004	-0.015	
No. of Competing Bidders	0.054	0.049	0.141**	0.101	0.133**	-0.035	0.043	-0.121*	0.006	-0.022
Relative Size	0.046	0.148**	0.152**	-0.192***	0.301***	-0.077	0.107*	-0.129**	-0.076	-0.320***
Hostile	-0.017	-0.043	0.050	0.071	0.098	0.001	-0.077	0.018	-0.092	-0.015
Diversifying	0.006	0.016	-0.003	0.068	0.058	-0.046	0.019	0.018	0.137**	0.044
Industry: Manufacturing	-0.019	-0.086	0.079	0.075	-0.105*	0.066	-0.035	0.013	0.079	0.257***
Industry: Services	0.001	0.045	-0.080	-0.085	0.028	-0.244***	-0.085	-0.063	-0.085	-0.168***
Industry: Trade	-0.014	0.101	-0.058	0.016	0.025	0.060	-0.046	0.102*	-0.038	0.074
Acquirer Top-Tier Advisor	0.358***	-0.006	0.146**	0.330***	0.343***	-0.031	0.038	-0.010	0.067	0.008
Target Top-Tier Advisor	0.141**	0.091	0.179***	0.310***	0.388***	-0.003	-0.019	0.019	0.085	-0.074
Acquirer No. of Advisors	0.341***	0.153**	0.159***	0.222***	0.347***	-0.104*	-0.004	-0.048	0.110*	-0.096
Target No. of Advisors	0.052	0.331***	0.247***	0.241***	0.339***	0.007	-0.009	0.005	0.069	-0.070

(Continued)

(Appendix C continued)

	No. of Competing Bidders	Relative Size	Hostile	Diversifying	Industry: Manufacturing	Industry: Services	Industry: Trade	Acquirer Top-Tier Advisor	Target Top-Tier Advisor	Acquirer No. of Advisors
Relative Size	0.151**									
Hostile	0.138**	0.044								
Diversifying	-0.024	0.072	0.037							
Industry: Manufacturing	0.066	-0.252***	-0.024	0.135**						
Industry: Services	-0.020	0.213***	0.023	-0.125**	-0.673***					
Industry: Trade	0.010	-0.044	-0.042	0.086	-0.294***	-0.209***				
Acquirer Top-Tier Advisor	0.069	0.070	0.003	0.072	-0.079	0.016	0.088			
Target Top-Tier Advisor	0.146**	0.167***	0.082	0.099	-0.033	0.000	0.022	0.252***		
Acquirer No. of Advisors	0.055	0.190***	0.013	0.085	-0.099	0.130**	-0.020	0.357***	0.193***	
Target No. of Advisors	0.114*	0.147**	-0.051	0.010	0.018	-0.062	0.063	0.078	0.199***	0.259***

Appendix D

Top-10 Underwriters Ranked by Issue Value

This table presents underwriter ranking of the top-10 investment banks according to the value of issues they underwrote (or syndicated in case of syndicated loans) for U.S. non-financial public firms during the period January 1, 2000 to December 31, 2014 drawn from the ThomsonOne SDC Global New Issues Database. Issue value in US$ million and the number of issues underwritten by each investment bank are presented. Credit for an issue is allocated fully to each individual company in the case of multiple underwriters for one issue.

Rank	Underwriter	Issue Value	Number of Issues
1	JP Morgan	11,390,783	11,968
2	Citi	8,283,566	7,228
3	Bank of America Merrill Lynch[1]	6,319,221	6,568
4	Barclays Capital[2]	4,861,210	4,313
5	Morgan Stanley	4,043,685	3,560
6	Goldman Sachs	3,970,405	3,406
7	Deutsche Bank	3,760,284	3,441
8	Wells Fargo	3,408,679	4,267
9	Credit Suisse Group[3]	3,171,814	3,279
10	RBS	2,596,550	1,718

[1] Including Merrill Lynch and Banc of America Securities which merged in 2008 to become Bank of America Merrill Lynch

[2] Including Lehman Brothers which was taken over by Barclays in 2008

[3] Including Credit Suisse First Boston under which the investment banking division operated until 2006

Appendix E

Effect of Target Advisors in Dual Roles on Deal Premiums – OLS

This table presents the results of the ordinary least squares (OLS) regressions of target advisors in dual roles on deal premiums measured as the offer price per share over the target closing price 1 day, 1 week and 4 weeks prior to the announcement date. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**	**(3)**
	OLS	**OLS**	**OLS**
	Premium 1 Day	***Premium 1 Week***	***Premium 4 Weeks***
Target Dual Role	-2.400	-1.120	-6.566
	(5.254)	(5.323)	(5.648)
Acquirer Log of Assets	8.763**	8.009**	9.082**
	(3.863)	(3.987)	(3.950)
Target Log of Assets	-9.333**	-7.631*	-13.234***
	(4.324)	(4.459)	(4.389)
Acquirer ROA	0.278	0.165	0.362
	(0.246)	(0.254)	(0.256)
Target ROA	-0.061	0.062	-0.171
	(0.222)	(0.231)	(0.239)
Acquirer M/B Ratio	-0.199	-0.240	-0.096
	(0.504)	(0.548)	(0.583)
Target M/B Ratio	-1.794**	-1.955**	-2.148**
	(0.792)	(0.827)	(0.842)
Percentage Paid in Cash	-0.014	-0.019	-0.007
	(0.063)	(0.062)	(0.063)
No. of Competing Bidders	11.507***	12.019***	8.522*
	(3.773)	(3.999)	(4.384)
Relative Size	0.022	0.002	0.020
	(0.029)	(0.029)	(0.032)
Hostile	38.968***	32.816***	21.610**
	(6.257)	(7.377)	(8.906)
Diversifying	-5.299**	-4.282	-7.398***
	(2.562)	(2.673)	(2.740)
Acquirer Top-Tier Advisor	2.465	2.695	3.947
	(3.580)	(3.559)	(3.776)
Target Top-Tier Advisor	-4.533	-3.103	0.999
	(3.093)	(3.094)	(3.415)
Acquirer No. of Advisors	3.107**	1.849	2.159
	(1.633)	(1.659)	(1.583)
Target No. of Advisors	-1.228	-1.638	0.922
	(1.930)	(2.102)	(2.170)
Observations	263	263	263
Adjusted R^2	0.149	0.132	0.112

Appendix F

Effect of Target Advisors in Dual Roles on Acquirer Announcement Returns – OLS

This table presents the results of the ordinary least squares (OLS) regressions of target advisors in dual roles on acquirer announcement returns using a 3-day and 7-day event window. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significance at 10%; ** denoting significance at 5%; *** denoting significance at 1%.

	(1)	**(2)**
	OLS	**OLS**
	3-Day CAR	***7-Day CAR***
Target Dual Role	-0.175	0.945
	(1.697)	(1.810)
Acquirer Log of Assets	-0.891	-0.345
	(1.373)	(1.534)
Target Log of Assets	-0.891	-1.127
	(1.626)	(1.762)
Acquirer ROA	0.034	0.032
	(0.102)	(0.107)
Target ROA	0.014	0.012
	(0.080)	(0.095)
Acquirer M/B Ratio	-0.044	0.017
	(0.232)	(0.264)
Target M/B Ratio	-0.412	-0.571*
	(0.306)	(0.327)
Percentage Paid in Cash	0.026	0.027
	(0.019)	(0.020)
No. of Competing Bidders	0.148	0.172
	(1.237)	(1.254)
Relative Size	-0.004	-0.013
	(0.012)	(0.014)
Hostile	5.164**	3.503
	(2.191)	(2.538)
Diversifying	-0.614	-1.657
	(1.141)	(1.202)
Acquirer Top-Tier Advisor	2.112	2.370
	(1.282)	(1.462)
Target Top-Tier Advisor	-0.797	-0.399
	(1.115)	(1.248)
Acquirer No. of Advisors	-0.869	-1.156
	(0.730)	(0.715)
Target No. of Advisors	0.657	0.766
	(0.756)	(0.804)
Observations	263	263
Adjusted R^2	0.145	0.129

Appendix G

Moderating Effect of Issue Proceeds for Target Advisors in Dual Roles – OLS

This table presents the results of the ordinary least squares (OLS) regressions of the interaction between the dual role advice for the target dummy variable and issue proceeds on deal premiums and acquirer announcement returns. We include both constitutive terms in the model specification. All models include year dummies, industry dummies and a constant. All variables are described in Appendix A. White's robust standard errors are presented in parentheses. Whenever statistically significant based on heteroskedasticity-adjusted standard errors, we report the significance level with * denoting significant at 10%; ** denoting significant at 5%; *** denoting significant at 1%.

	(1)	(2)	(3)	(4)	(5)
	OLS	OLS	OLS	OLS	OLS
	Premium 1 Day	*Premium 1 Week*	*Premium 4 Weeks*	*3-Day CAR*	*7-Day CAR*
Target Dual Role	-4.382	-3.347	-10.360*	0.966	1.771
	(5.835)	(5.732)	(6.028)	(1.964)	(2.123)
Issue Proceeds	0.000*	0.000**	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Interaction: Target Dual Role x Issue Proceeds	0.000	0.000	0.000**	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Acquirer Log of Assets	8.308**	7.399*	8.473**	-0.886	-0.317
	(3.806)	(3.911)	(3.915)	(1.357)	(1.532)
Target Log of Assets	-10.840**	-9.690**	-15.151***	-0.973	-1.096
	(4.359)	(4.422)	(4.434)	(1.668)	(1.790)
Acquirer ROA	0.250	0.130	0.317	0.041	0.038
	(0.244)	(0.249)	(0.251)	(0.102)	(0.108)
Target ROA	-0.111	-0.010	-0.227	0.004	0.008
	(0.226)	(0.232)	(0.244)	(0.082)	(0.097)
Acquirer M/B Ratio	-0.207	-0.252	-0.103	-0.047	0.015
	(0.505)	(0.545)	(0.585)	(0.234)	(0.265)
Target M/B Ratio	-2.035**	-2.276***	-2.475***	-0.405	-0.553*
	(0.791)	(0.823)	(0.840)	(0.313)	(0.333)
Percentage Paid in Cash	-0.029	-0.037	-0.025	0.026	0.028
	(0.064)	(0.062)	(0.063)	(0.019)	(0.021)
Number of Competing Bidders	11.416***	11.845***	8.540*	0.012	0.091
	(3.751)	(3.890)	(4.337)	(1.239)	(1.269)
Relative Size	0.015	-0.006	0.012	-0.004	-0.013
	(0.029)	(0.029)	(0.032)	(0.012)	(0.014)
Hostile	38.464***	32.008***	21.284**	4.828**	3.319
	(6.427)	(7.519)	(9.041)	(2.295)	(2.662)
Diversifying	-5.161*	-4.021	-7.416***	-0.417	-1.541
	(2.642)	(2.720)	(2.780)	(1.165)	(1.233)
Acquirer Top-Tier Advisor	2.394	2.626	3.781	2.182*	2.418
	(3.595)	(3.575)	(3.773)	(1.295)	(1.473)
Target Top-Tier Advisor	-4.425	-2.964	1.159	-0.813	-0.415
	(3.097)	(3.111)	(3.428)	(1.123)	(1.257)
Acquirer Number of Advisors	3.193*	1.969	2.263	-0.858	-1.153
	(1.707)	(1.758)	(1.663)	(0.740)	(0.723)
Target Number of Advisors	-1.228	-1.727	1.156	0.428	0.621
	(1.955)	(2.100)	(2.116)	(0.788)	(0.843)
Observations	263	263	263	263	263
Adjusted R^2	0.161	0.167	0.136	0.142	0.124