Public Target Selection and Family Firms

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Abstract: We examine the relation between ownership structure and M&A target selection when family firms pursue public firm acquisitions. We find that family firm acquirers select targets that have lower Tobin's Q relative to non-family acquirers. Our results suggest that family firms choose to acquire less glamorous targets against which they can better negotiate. The market reacts more positively to these family firm acquisitions at announcement and out to one year. It is family firm target selection skill along with negotiation skill that leads to the favorable market reception.

Keywords: Family firm; founder; mergers and acquisitions; target selection; ownership

1. Introduction

Mergers and acquisitions (M&A) are examples of highly visible corporate investments, particularly when one public company acquires another public company. As such, they also potentially have a large effect on shareholder wealth, and, therefore, provide a unique opportunity to examine the impact of differing ownership on various types of shareholders. In this paper, we examine the determinants of M&A activity and impact of it on family owners, blockholders and minority owners. Prior literature indicates that M&A transactions exacerbate agency conflicts between managers and shareholders by allowing insiders to extract private benefits of control (Berle and Means, 1932; Jensen and Meckling, 1976). Family firm versus non-family firm shareholder performance resulting from M&A activity remains a largely open question in the literature. Ben-Amar and Andre (2006) show that Canadian family-firm acquirers exhibit higher announcement returns than non-family firm acquirers. Basu, Dimitrova, and Paeglis (2009) examine newly public firms in the U.S. and find that family firms outperform non-family firms when undertaking M&A transactions at high levels of family ownership but performance deteriorates as family stakes decrease. While examining S&P 500 firms, Bauguess and Stegemoller (2008) find that family firms destroy value when they acquire and the magnitude of the wealth loss is largest when the CEO is the founder. If family firms and non-family firms target different types of companies for acquisition, the performance impact of their M&A activities would be expected to differ.

We investigate the relation between acquirer equity-ownership structure and target firm selection when the acquirer has a significant family ownership presence. We also examine whether this target selection is beneficial to minority investors of family firm acquirers by measuring short- and long-term market reaction after the merger announcements. To the best of our knowledge, our study is the first to examine target selection by family firm acquirers.

This paper makes several important contributions to the literature. First, the analysis provides compelling evidence that family firms pick different types of targets: those that have lower Tobin's Q. Our investigation to identify a potential mechanism shows that family firms target lower growth and less in demand targets against which they can negotiate better. This finding extends the current family firm acquisition literature.

Second, we find that mergers performed by family firms do not appear to be harmful for shareholders, minority or otherwise, in terms of stock price performance at announcement. We provide evidence that short-run abnormal returns to family firm acquisition announcements are higher (less negative) than are those for shareholders of acquiring non-family firms. We conclude the family-firm acquisition performance analysis by showing that family firms have better one-year long-term buy-and-hold abnormal returns after acquisition than do non-family firms. We also find that targets of family firms realize lower announcement returns relative to targets of non-family acquirers. Taken in combination, our results demonstrate that family firms target less glamorous firms with low growth potential as measured by *Q*. Family firms can negotiate better deal terms against these less in demand targets. Target selection and negotiation skills of family firms are perceived more positively by the market compared to non-family firm acquisitions as evidenced by better abnormal returns of family firm acquirers.

Our study differs from previous work along several dimensions. First, we use a comprehensive ownership and acquisition data set that is sampled over a longer period of time than previous studies. It should be noted that our results differ from Bauguess and Stegemoller (2008), partially due to the inclusion of financial services and utility firms in their sample. We exclude financial services and utilities as it is common for most studies in the family firm literature (Anderson and Reeb, 2003; Villalonga and Amit, 2006). We investigate Russell 3000 firm acquisitions and their public targets spanning from 2001 through 2015. Most importantly, our primary research focus is the underlying

mechanisms that make family firm target selection different. To address this question, we examine acquirer and target selection effects using only public targets so that we can study a comprehensive set of bidder and target characteristics in detail. We show that target selection along with better negotiation skills are the mechanisms through which family firms add value relative to the value-destroying mergers of non-family firms. This is the first study to investigate family firm acquisitions from these perspectives. Our main results are also robust to the use of a matched sample of family and non-family acquirers which alleviates the self-selection or sampling concerns.

2. Related Literature

Anderson, Duru and Reeb (2012) finds that over 38% of the 2,000 largest firms (based on market capitalization) in the U.S. have a founding family presence, and Li and Srinivasan (2011) find that almost 25% of large U.S. companies have founders actively engaged with the company either as the CEO or as a board member. Because of the strong linkage between firm health and family welfare, family owners and leaders arguably provide superior monitoring of the M&A process to ensure strong firm performance and long-term survival. A superior level of monitoring can lead family firms to select different types of targets than firms with lower quality monitoring. Higher degrees of incentive alignment with the firm may help family owners to choose targets that provide greater benefits to their shareholders relative to non-family firms. Anderson and Reeb (2003) suggest that a family's undiversified equity position, historical presence, control of management and director seats provide strong incentives for family owners to monitor and influence firm decision-making. Relatedly, Stein (1988, 1989) argues that shareholders with relatively long investment horizons can mitigate the incentives for myopic investment decisions, and James (1999) proposes that families have longer investment horizons that lead to greater investment efficiency. Further, families rarely sell their controlling stakes to outsiders (Bauguess and Stegemoller, 2008; Holderness and Sheehan, 1988; Klasa, 2007), and thus have a long-term interest combined with the power to influence firm decision making and select M&A targets that maximize long-term shareholder wealth.

Family owners, however, may also choose targets that benefit the family at the expense of outside shareholders. Family owners may pursue acquisitions to accrue private benefits of control such as empire building (Rhoades, 1983; Roll, 1986), risk reduction (Amihud and Lev, 1981) and the pursuit of pet projects (Shleifer and Vishny, 1989). Anderson and Reeb (2003) suggest that large, undiversified shareholders such as families may derive greater benefit from the survival of the company than from enhancing shareholder value as compared to minority shareholders who desire to maximize the wealth of their diversified position. Family firms may do less acquisitions than ideal if they risk losing control after the acquisition (Caprio, Crocio, and Del Guidice, 2011; Shim and Okamuro, 2011). Family firms may have emotional ties to the firm that compete with purely economic ties (the socio-economic wealth hypothesis of Gomez,-Mejia, Cruz, Berrone, and De Castro, 2011; Gomez-Mejia, Patel and Zellweger, 2018); Bertrand and Schoar (2006) and Morck and Yeung (2003) argue that family owners often make decisions based on the interests of the family rather than interests of all firm shareholders, suggesting that M&A transactions provide ample opportunity for family owners to expropriate minority shareholder wealth.

These differences in family owners' incentives may lead family firms to choose different types of targets than non-family firms. Mergers and acquisitions potentially affect the future path of performance for the newly merged company. The extant literature provides mixed evidence of the effects of bidder ownership structure on both target and bidder announcement returns. Therefore, after investigating target selection by family firms, we continue our analysis by examining the short and long-term market reactions to family firm acquisition announcements.

3. Methodology and Data

3.1 Sample Construction

Our initial sample comprises the Russell 3000 firms (excluding financial and utility firms) from 2001 through 2015. For each firm-year observation, we identify and hand collect family ownership through corporate proxy statements. If a company is delisted, goes bankrupt, or is sold during this period, it is omitted from the sample after such event, but it is still included in the sample prior to one of these events (if any). For instance, if Company A goes bankrupt right after 2004, our sample includes Company A from 2001 through 2004.

We include for the sample those mergers and acquisitions of publicly traded firms with announcement dates from January 1, 2001 until December 31, 2015 that can be found in the ThomsonOne database (formerly SDC). We stop the sample collection in 2015 to ensure that we can estimate long-run returns. We exclude deals with values of less than $1 million and deal types that are spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations in keeping with the extant M&A literature. We also eliminate acquiring firms outside the set of the Russell 3000 Industrial firms along with private acquirers, bidders, and targets. To ensure the comparability of return data and information about targets and bidders for all acquirers and targets, we keep only the publicly traded U.S. acquirers and targets, and so exclude any privately held targets, international subsidiary acquisitions or acquisitions by foreign firms. This leaves us with 842 transactions. Finally, since we can only use completed acquisitions which have stock market returns available on CRSP[1] and cross-sectional data available on Compustat, our sample is further reduced to 607 remaining transactions of which 387 are by unique acquirers that include both family and non-family firms.

3.2 Primary Variable Measurement

Family firm ownership classification is measured using a binary variable that equals one if the family holds a five percent or more equity stake in the firm and zero otherwise consistent with existing research into U.S. traded family firms (Villalonga and Amit, 2006). Family ownership includes all stock ownership as listed in proxy statements including trust accounts that belong to any family member that is related to the founder(s) of each firm. Proxy statements do not always identify extended family members (descendants) especially if their last names have changed over time. To determine each family member, we read histories of each firm and founder(s) family lineage on several websites such as ReferenceforBusiness.com, FundingUniverse.com and Wikipedia.com. Our primary dependent variable in the target selection logistic regression model is an indicator variable for each target taking on a value of one if the target was acquired by a family firm and zero otherwise.

For the event study results, our primary dependent variable is the cumulative abnormal return (CARs) at announcement estimated for a three-day period centered on the announcement date (the event window is from day -1 to day +1). Abnormal returns over the three-day event window are calculated using market model returns with the CRSP value-weighted index returns used as the reference index.[2] The market model parameters are calculated over the period starting 301 trading days before the announcement and ending on the 46th trading day before the acquisition announcement. We calculate CARs for both the acquirer (ACAR) and the target (TCAR) around the

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[1] Some of the targets are listed on international stock exchanges; some are listed on OTC and pink sheets, but are not listed in CRSP database and are, therefore, dropped from the sample.
[2] We also calculate abnormal returns using the CRSP equal weighted index as a robustness test and our results carry through.

announcement date. For the long-run returns, we use buy-and-hold abnormal returns (BHAR) measured against an expected return calculated using the Fama-French model as recommended in Barber and Lyon (1997).

3.3 Control Variable Measurement

The M&A literature documents numerous factors that affect acquirer announcement returns. Moeller, Schlingemann, and Stulz (2004) find that acquisitions made by smaller acquirers and acquisitions with a smaller deal size relative to the size of the acquirer result in better bidder announcement returns. Alexandridis et al. (2013) indicate that bidder returns are negatively related to the size of the target, which suggests that there is costly complexity associated with buying large targets. Travlos (1987) finds that acquisitions financed with cash also result in better bidder returns. Morck, Shleifer, and Vishny (1990) argues that acquisitions of high growth targets generate substantial benefits to managers but hurt shareholders. Similarly, Lang, Stulz, and Walkling (1989) and Servaes (1991) find that low Tobin's Q targets, proxying for low growth potential, positively influence bidder returns. Wang and Xie (2009) conversely find that target Tobin's Q (growth opportunity) does not have a significant impact on acquirer returns.

In our cross-sectional regressions, we control for these determinants of acquirer and deal performance. In addition, we include a set of firm and deal characteristics that are standard control variables in the M&A literature. Acquirer and target characteristics employed in this way include Tobin's Q, leverage, risk measures, target pre-announcement stock price run-up, and target performance measure (ROA). In terms of deal characteristics, we include the method of payment, and the relative deal size. Table 1 contains descriptions of the comprehensive set of variables used in the cross-sectional analysis for target selection effects and market reaction effects as variables of interest and controls.

4. Results

Table 2 provides summary statistics for 607 family and non-family acquirers and their associated public targets from January 2001 and December 2015. Family firm acquisitions represent 21.9% of all transactions (133 of 607). We observe that acquirers use all cash for 51.1% of the acquisitions, all stock for 14.2% of the deals, and fail to report terms or use a combination of both for the remaining 34.7% (mixed deals). Non-family firms use all stock as the method of payment more often than family firms do, though the difference is only significant at the p-value = 10% level. Mean relative deal size (transaction value/ bidder market value) is 28% in our sample, and the average deal value in our sample is $2.144 billion. Relative deal size does not seem to be different, (on average) between family owned and non-family-owned acquirers.

There are only 30 deals that feature more than one bidder. Of those, 8 include a family firm bidder. Proportionally, 26.67% of multiple bidder deals involve a family firm bidder while only 21.91% of all deals involve a family firm bidder. A slightly higher percentage of family firm acquirers encounter another bidder, but the difference in proportions is not statistically significant. The average number of bidders in a family-firm deal is 1.075 while the average number in a deal with no family firms involved is 1.051. While there are firms that make multiple acquisitions, as would be expected, no firm makes more than 13[3] acquisitions and 42.5% of firms make only one acquisition.

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[3] Oracle Corp has completed the maximum amount of acquisitions (13) within our sample. Our analysis is robust to regressions that exclude Oracle Corp observations.

Table 2 also lists the results of difference in mean tests between family and non-family acquirers for the continuously measured variables. Based on these tests, family firm bidders have lower average leverage (12.2% for family firms vs 17.3% for non-family) and are younger (40.872 years versus 54.177 years). They acquire targets with lower average Tobin's Q (1.687 vs 2.009, respectively) as measured by the market-to-book value for assets[4]. A lower market to book value of assets for family firm targets is consistent with less glamourous targets. This is potentially due to lower perceived growth opportunities for those targets and, accordingly, a potentially lower price.

Family firm bidders and non-family firm bidders do not differ statistically in terms of their average size, risk, Tobin's Q and cash/asset ratio in the sample. Targets exhibit an average premium of 60.2%, and a median premium of 50.1%. The level of premium does not seem to vary between family owned and non-family owned firms. Likewise, target runup does not appear to differ between family and non-family targets suggesting that market speculation about impending takeovers does not impact family takeovers differently than non-family takeovers. Targets of family firm bidders and non-family firm bidders do not differ in terms of their size, leverage, ROA or risk profile at the means.

In summary, the univariate results in Table 2 suggest that family firms target different types of firms than do non-family firms. Subsequent investigation into family firm status on targeting behavior should, therefore, address the impact of these differences.

4.1 Target Selection

Having established in a univariate setting that family firm bidders and non-family firm bidders differ in the types of targets they pursue and deals they make, we continue our investigation in a multivariate setting by examining the differences in the targets of completed family firm mergers. We posit that differences in family firm incentives lead them to engage in mergers with target firms that are different than the target firms in non-family firm mergers.

We begin with a Firth (1993) logistic model to investigate which of the target characteristics determine the propensity of these firms to be acquired by family firm bidders. The Firth (1993) model corrects logistic regression estimates for several biases and uses a penalized maximum likelihood function enabling us to include a full set of industry and year fixed effects even though some independent variables exhibit limited variation. We investigate whether family owners appear more likely to acquire targets (i) with low growth opportunities or that are undervalued (Lang et al., 1989; Servaes, 1991; Morck et al., 1990); (ii) that are smaller (Alexandridis et al., 2013); (iii) that have lower risk (Schneider and Spalt, 2017) and (iv) that have less leverage (Bruner, 1988). The dependent variable is a binary variable that takes a value of one if the target was acquired by a family firm bidder and zero otherwise. The logistic regression includes our previously detailed explanatory variables: family firm status variables, target Tobin's Q*,* target size, target leverage, target ROA and target risk. In addition, we employ the control variables that are common in the M&A literature as defined in Table 1.

Table 3 shows our analysis of target selection by family firms using the full observed M&A sample. These regression results indicate that target Tobin's Q is associated with a log odds ratio of 0.727, which can be interpreted as family bidders are 72.7% as likely to acquire a firm with a higher Tobin's Q (when target Tobin's Q increases by 1) than are non-family bidders. This finding indicates that as a target's Tobin's Q increases, the target firm's likelihood of being acquired by a family bidder decreases. Family bidders choose targets that have relatively lower Tobin's Q potentially due to the perception that they have low growth potential and are less glamorous. Family firms then negotiate

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[4] Target Tobin's Q value ranges from 0.550 through 6.815. In order to prevent a target with a large Tobin's Q potentially impacting our results we checked our main regressions by removing the top 5% of our observations based on Target's Tobin's Q. Our results hold in regressions that exclude the targets in the top 5% of Tobin's Q values.

better against these types of less sought after targets. In addition, our analysis shows that family firm acquirers have a lower likelihood of acquiring other firms when family firms have higher leverage (log-odds ratio of 0.065) and are older (log-odd ratio of 0.641). Family firm acquirers have a higher likelihood of acquiring when the relative deal size is larger (log-odds ratio of 1.455). Taken together, this evidence shows that family firms acquire targets that have lower growth potential and are larger.[5] They do so when they are younger and have lower levels of leverage.

Having established that family firms choose targets that have lower Tobin's Q, we turn our investigation to whether the merger announcements are greeted as value creating. In the following analysis, we study short-run and long-run impacts on share price from family firm acquisition announcements for shareholders relative to non-family shareholders. We propose that shareholder wealth increases if family firms pick targets against which they can negotiate better, if they choose targets that may have lower growth potential, or if they can keep the deal quiet and, thereby, have fewer competing bids.[6] Alternatively, shareholder wealth would be expected to decrease if family firm bidders pick targets that have more negotiating power, if they choose targets that may have higher Tobin's Q due to perceived high growth potential or if there are many competing bids potentially increasing the price paid.

4.2 Acquirer M&A Announcement Returns (ACAR and BHAR)

We have demonstrated that family firms prefer to acquire firms with lower Tobin's Q when targets are relatively larger, and when acquirers have less leverage and are younger. If family firms are selecting targets that have been ignored by the wider marketplace of acquirers and are better able to capitalize on the acquisition, shareholder wealth may be enhanced by the acquisition. The announcement period abnormal returns represent expected superior stock price performance while the long-run returns, estimated against an appropriate asset pricing model, represent the realization of such returns. We turn now to an analysis of shareholder wealth effects following the M&A announcements in our sample.

We have established that family firms select targets with lower Tobin's Q and interpret that as selecting targets that are less glamorous due to lower growth potential. Morck, Shleifer, and Vishny (1990) show that returns to bidder shareholders are lower when firms buy a growing target. Similarly, Servaes (1991) also finds that bidder shareholders benefit when they buy targets with low Tobin's Q. If lower growth potential firms can be acquired for a better price than high growth firms, those targets create more value for their shareholders. Accordingly, we would expect to see better announcement returns (ACAR) for family firm acquirers than non-family firms since we have shown that they are targeting low Q firms. We also estimate long-run buy-and-hold abnormal returns to acquisition above those predicted by a Fama-French model.

To measure the market reaction to the acquisition announcement, we use cumulative abnormal returns around the announcement date measured from one (1) trading day prior to the announcement date to one (1) trading day after. In our cross-sectional regressions, this is the primary dependent variable. Central to the family-firm body of research are arguments that family firms are better able to monitor management, have longer investment horizons, and are more committed to firm success than non-family firms (Anderson and Reeb, 2003; James, 1999). Positive announcement period reactions

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[5] We have completed a host of robustness tests for Table 3. Our results are robust to using Linear Probability Model instead of Firth Logit and continue to show that family firms are more likely to buy targets that have lower Q and are smaller in size. Our results also hold without industry fixed effects, year fixed effects and control variables. We also run collinearity diagnostics for our control variables and find that none of the control variables create a collinearity issue.

[6] Due to space constraints, we detail the results of our investigation into alternative channels here in the Appendix and the tables for the Appendix are available upon request.

to family firm acquisitions may then arise because shareholders anticipate that family-firms will be better able to realize the potential of the combined firms. If this anticipation is correct, the realization of such gains should appear in firm long-run returns.

The univariate evidence in Table 2, as well as the evidence in Table 3, suggests that there are some systematic differences between family firm targets and non-family firm targets, and that there are also differences between family firm acquirers and non-family firm acquirers. These differences are readily apparent in different levels of market-to-book and leverage, among others. Accordingly, to assess the long-run performance of family firm equity returns in family-firm acquisitions, we use a buy-and-hold abnormal return metric that employs the Fama-French (1993) model as the reference portfolio to capture risk differences associated with size, book-to-market and returns to the overall market. We estimate these abnormal returns for one-year, two-year, and three-year horizons.

4.2.1 Univariate Abnormal Returns Analysis

Acquirer average cumulative abnormal return (Table 4: ACAR -1, +1) around the announcement date is slightly positive for family firm bidders (0.1%) though statistically insignificant at conventionally accepted levels, while it is a negative 1.2% and statistically significant for non-family firm bidders. The difference in average CAR is 1.4% with a t-statistic of 2.213. This lies in stark contrast to the general finding that acquirers experience negative cumulative average abnormal returns at announcement (Roll, 1986; Moeller et al. 2004 and 2005). This is the first indication we find that family firm acquisitions are received differently by the market than are non-family firm acquisitions. The average CARs for targets of family firms (Table 4: TCAR -1, +1) are both positive and smaller on average than for those of non-family firms (25.5% vs 28.8%) but the difference in means test is not statistically significant. Consistent with the short-run results, buy and hold abnormal returns (Table 4: BHAR 1-year) in excess of those expected using a Fama-French model to forecast returns for one year after the acquisition announcement are less negative for family firm acquirers than non-family firm acquirers at -7.7% vs -14.6%, respectively, a 6.9% difference which is quite large economically. The difference in means, however, is not statistically meaningful at conventionally accepted levels. Our aggregate market reaction measure, Deal Cumulative Abnormal Returns (DCAR= market value weighted average of acquirer and target cumulative abnormal announcement returns) around the announcement date (DCAR -1, +1), is statistically different from zero overall and for deals involving family firms and non-family firm acquirers but the difference in means is not statistically significant.

The short-term and long-term abnormal return evidence in Table 4 suggests that: (a) the market realizes the potential for synergies (positive DCARs); (b) that target firms capture much of the synergistic benefits regardless of the ownership structure vis-à-vis family holdings (positive and significant target CARs); but that (c) family-owned firms avoid overpaying on average (no significant acquirer CARs for family firms); and (d) that they manage to realize the benefits better over the succeeding year (less negative perhaps even insignificant BHARs) as compared to non-family firms.

4.2.2 Cross-sectional M&A Announcement Returns (ACAR and BHAR)

Family firms select different targets and the market reacts differently to family firm M&A announcements than it does to non-family firm M&A announcements in a univariate framework. Merger and acquisition activity is a complex corporate phenomenon with many different factors potentially affecting the market reaction to announcements of a successful targeting. We, therefore, examine the univariate announcement return effects in cross-sectional estimations designed to control for the deal, acquirer and target characteristics to determine if the univariate effects we document are related to family firm ownership after controlling for other characteristics of the deal.   The

independent variables are as defined in Table 1. To control for firm-specific and timing effects beyond our controls, we cluster on firm-level identifier and use industry and year fixed effects.

Our study, like most in the M&A arena, suffers from an endogeneity problem as merger decisions do not randomly arise amongst the population of firms. Our analysis investigates ownership structure, investment decisions and firm performance, which are all firm attributes that prior literature indicates are simultaneously determined. We acknowledge that the study does not eliminate concerns arising from the endogeneity caused by simultaneity. Since the decision to become an acquirer is not exogenous, then our sample of acquiring firms may not be random and the results of our analysis could be biased[7]. We use a matched sample analysis to alleviate some of the self-selection and sampling concerns as explained in section 4.4.

The multivariate OLS regression results contained in Table 5 columns 1 – 2 indicate that acquiring firms with family ownership exhibit higher CARs than other types of firms (1.4% higher ACAR), and that this effect increases with the level of family ownership (coefficient estimate of 0.051 in column 1). Based on average acquirer market value of equity, this corresponds to approximately $384 million higher value for the family firm acquirers. We interpret this as evidence that family firms have a better (less negative) market reaction to an M&A announcement even after controlling for acquirer, target and deal characteristics. The presence of other blockholders does not seem to be related to the stock market announcement reaction. Consistent with prior research findings, deals that are financed by all cash result in higher ACARs, while the acquirer cash/asset ratio is associated with lower ACARs. Target Tobin's Q is negatively related to acquirer CARs, which confirms the negative relationship identified previously between buying lower growth targets and negative bidder returns.[8] Table 5 is consistent with our conjecture that family-owned firms acquire targets that provide greater benefits to shareholders than do the targets of non-family firms.

Table 5 columns 3 - 4 presents the cross-sectional OLS regression results for the one-year return horizon (BHARs). Consistent with the short-term abnormal return univariate conclusions, family-firm acquisitions generate abnormal returns that are less negative (Table 4) over the succeeding one-year horizon as compared to non-family acquisitions even after controlling for different transaction, target, and acquirer characteristics. Family firm acquisitions are 11.6% better than non-family firm acquisitions and this effect is increasing in family firm ownership (coefficient estimate of 0.437). The long-term abnormal return analysis results also suggest that family-owned firms acquire targets that provide greater benefits to shareholders than the targets of non-family firms up to one year after the announcement. As a result, shareholder wealth is higher for family firms vis-à-vis non-family firms one year after the announcement as well as in the short-run. The two and three-year abnormal return horizon results show no difference between family-firm acquisitions and non-family firm acquisitions (available upon request).

4.2.3 Target M&A Announcement Returns (TCAR)

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[7] M&As are deliberate decisions by firms to self-select into their preferred choices (Li and Prabhala, 2007). As a robustness (in untabulated analysis) we use a Heckman (1979) two-stage procedure that conditions acquirer returns on the likelihood that a firm acquires and find that our ACAR and BHAR regression results hold with the Heckman selection adjustment. The first stage of the two stage Heckman selection model uses a selection equation. We include the level of capital expenditures as an instrument in the first stage since the level of capital expenditures is highly correlated with acquisition likelihood, while it does not explain bidder returns (Bauguess and Stegemoller, 2008). Other variables included in the first stage logistic selection equation are acquirer cash/asset ratio, acquirer leverage, natural log of acquirer total assets, acquirer's Tobin's Q and acquirer risk. In the second stage, the inverse mills ratio from the first stage is included to correct for self-selection and can be viewed as including an omitted variable (Li and Prabhala, 2007).

[8] We also calculate abnormal returns using the CRSP equal weighted index as robustness tests and our univariate and cross-sectional results hold. These tables are available upon request.

If family-owned firms are better monitors of the deal process and/or better negotiators, if they do not overpay as much as non-family owned firms, or their mergers are expected to be more successful, we would expect to see lower announcement CARs for the targets of the family firms (TCARs). Similar to the short-run acquirer abnormal return analysis, we use CARs around the announcement date measured from 1 trading day prior to the announcement date to 1 trading day after, for target firms, as our primary dependent variable. TCAR is a proxy for how the market views the transaction from the perspective of target shareholders. The variables of interest and control variables are as defined in Table 1. We cluster on firm-level identifier and include year and industry fixed effects to control for differing impacts across time and industry.

Multivariate regression results in Table 6 indicate that targets of family owned firms, in general, exhibit lower CARs than other types of firms (4.3% lower). In Table 5, we documented that increased family ownership was associated with less negative abnormal returns to family acquisitions and here we document that target abnormal returns decrease in family ownership (coefficient estimate of -0.183). When combined with the univariate results in Table 4, we interpret these results as supporting evidence that family owned bidders perform acquisitions which are perceived by the market to be less value destroying than do other firms. As a result, these family bidders have better announcement returns while their targets have lower (still positive) announcement returns.

As expected, all cash deals are associated with higher TCARs. TCAR decreases with target size. Other control variables do not have statistically different impacts on TCARs. It is worth noting that target Tobin's Q does not affect the abnormal return to the acquisition announcement suggesting that any effects associated with higher or lower Q for targets is captured by acquirers.

The event study literature on mergers and acquisitions is both broad and deep. We have conducted a significant number of robustness tests and tests for alternative explanations. A summary of the findings of those tests is available in the Appendix and omitted here for the sake of parsimony. The accompanying tables are available upon request and have likewise been omitted. In summary, our results carry through when using a variety of alternative specifications (they are robust) and alternative channels do not provide additional explanatory evidence on our documented findings.

4.3 Target Selection and Negotiation Skills

The higher cumulative abnormal returns achieved by family firm acquisition behavior represent the market reaction to the outcome of family firm target selection and ensuing successful merger and acquisition negotiations. It is hard to disentangle whether the potential for positive share price announcement is due to better family firm negotiating skills as they choose their targets versus other potential reasons. We believe our results support the notion that family firm acquirers are able to negotiate better deal terms while they identify targets that have lower Tobin's Q. Targets of family firm acquirers are likely to be less in demand due their lower growth potential which gives family firm acquirers advantage while they negotiate the deal terms. We find suggestive evidence supporting this better negotiation channel while family firms select their low Q targets in several of our empirical tests. First, we find that targets of family firms have lower CARs (TCARs) than targets of non-family firm acquirers (Table 6), while family firm acquirers earn higher CARs (Table 5). In addition, family firms capture a larger relative share of acquisition gains (Ahern (2012)) as further explained in the Appendix A.2. Taken together, this empirical evidence suggests that family firms select lower Q (less glamorous) targets which gives family firm acquirers advantage as they negotiate better deal terms and have more favorable market reaction.

Our results could also be driven by the previous experience of serial acquirers rather than family-ownership structure if family firms are more likely to be serial acquirers or if individual family firm leaders are more likely to be serial acquirers (founders come to mind immediately as a possibility).

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The impact of serial acquisition experience would be seen in better negotiating ability leading to lower premiums and higher abnormal returns for the individual acquirers. Therefore, as a robustness test, we investigate whether our results hold when controlling for serial acquirers (Asquith et al., 1983; Fuller et al, 2002). To examine this possibility, we add a new variable, *pre3YR*, to our estimation in Table 5. This variable is defined as the total number of acquisitions an acquirer has made in the three years prior to the current acquisition announcement (Cai and Sevilir, 2012). Even after adjusting for serial acquirer experience, family firms still generate higher CARs than non-family firms. The coefficient estimate on *pre3YR* is not statistically significant for the ACAR or BHAR estimations and other coefficient estimates of interest remain similar in size, sign and statistical significance. These results are available upon request.

4.4 Matched Sample Analysis

Family firms that do M&A transactions could be inherently different than the non-family firms that do M&A transactions, in essence, a self-selection or sampling issue. To alleviate concerns about self-selection or sampling issues, we match family firm acquirers to non-family firm acquirers using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009). The acquirer firm matching criteria are: size, Tobin's Q, leverage and age since founding. Table 7 provides summary statistics for this matched sample that consists of 244 observations, comprising 122 observations for family firm and 122 non-family firm M&A transactions. The CEM process did not find a non-family firm match within our sample for 11 firms which means we have some erosion of power in the resulting matched sample tests. The difference in means tests, shown in Table 7, indicate a homogeneous match. The t-tests indicate no difference in firm size, cash/asset ratio, leverage, risk, firm age, and Tobin's Q for the matched sample as should be the case for a well-matched sample of family and non-family acquirers.

Table 8 replicates our target selection specification (Table 3) using only the matched sample. As before, we find that higher target Tobin's Q is associated with a lower likelihood of acquisition by a family firm (log odds ratio of 0.713). This finding is similar to the full sample results with a slightly larger coefficient estimate. Some of the other control variables, notably, acquirer age and leverage are no longer significant. Since those are part of the acquirer matching criteria, this was to be expected. In addition, our matched sample analysis shows that family firm acquirers have a lower likelihood of acquiring other firms when family firms have higher cash/asset ratio (log-odds ratio of 0.089).

Table 9 provides the abnormal returns summary statistics for the overall matched sample and then the breakdown by family and non-family classification. Matched sample summary statistics and difference in means tests shown in Table 9 are similar to the full sample results shown in Table 4. The point estimate for the difference in means for family firm acquirer CARs vis-à-vis non-family firm acquirer CARs increases from 1.4 % to 3.1%. The difference in means for buy-and-hold abnormal returns increases to 9.4% and remains statistically insignificant. In the matched sample difference in DCARs becomes statistically significant while it was statistically insignificant for the full sample. In summary, we continue to find that ACARs and DCARs are lower for non-family acquirers when compared to family acquirers (t statistics of 3.472 and 1.843, respectively) in a matched sample. This univariate evidence is to a degree stronger, suggesting a higher short-term market reaction to family firm acquisitions.

Table 10 reproduces our cross-sectional event study results for the matched sample. The positive market reception for family firms acquisitions remains and is, generally, of higher economic magnitude especially for the short-term ACARs. The findings in the matched sample analysis mirror that of the non-matched sample and partially alleviate unobserved heterogeneity and endogeneity concerns due to inherent differences between family and non-family acquirers. Our family firm results are robust to acquirer differences in size, Tobin's Q, leverage and age.

5. Conclusion

Family firms acquire different types of targets than do non-family firms. This paper examines an array of target, acquirer and deal characteristics and shows that the key difference in targets determining the likelihood of being acquired by a family firm is having low growth potential. Specifically, family firms complete mergers of targets that have lower Tobin's Q and acquire less glamorous targets. Family firms can negotiate better deal terms against these less in demand targets and benefit their shareholders.

Our event-study analysis suggests that, overall, choosing these less glamorous targets does not degrade shareholder value for family firm bidders as evidenced by both short-run abnormal returns as well as abnormal returns up to one year after M&A announcement relative to the impact of acquisition on shareholders in non-family firms. When family firms engage in acquisitions, acquirer CARs are less negative on average than for non-family firms engaging in acquisitions. Similarly, family firm acquirers' one-year BHAR is also less negative than those of non-family firm acquirers. Our evidence shows that the overall combined market reaction for targets and bidders is the same for family and non-family acquisitions. Therefore, the less negative market reaction to family firm acquisitions must be due to family firm acquirers capturing a bigger share of that pie and that increased share comes from what would have been the targets' share. Family firms select targets such that their acquisitions do not harm shareholders in the same way that existing research shows acquisition behavior in a broad cross-section of firms often does.

Appendix

Other Potential Channels and Robustness Tests

Having established that family firms target firms with lower Tobin's Qs, we have also explored alternative channels by which family firm acquisitions may create greater shareholder value than non-family firm acquisitions. Given the large number of potential channels, we report herein only the conclusions of our tests. In addition, there are a host of alternative specifications for variables of interest and control variables leading to the necessity for estimations documenting the robustness of our results to those specifications. The alternative channel and robustness result tables, omitted for the sake of parsimony, are available upon request.

A.1. Other Potential Channels

Family firms may better manage the acquired assets after the merger, resulting in greater profitability than non-family acquirers and the market may anticipate that. Following Cai and Sevilir (2012) and Healy, Palepu, and Ruback (1992), we use firm change in industry adjusted ROA to examine the difference in operating performance between family and non-family merger outcomes. We calculate the industry-adjusted ROA of the acquirer and the target by subtracting the median industry ROA based on the two-digit SIC codes. Similar to Healy, Palepu, and Ruback (1992), we construct a portfolio of the acquirer and the target, and calculate the industry-adjusted ROA of the portfolio for a given fiscal year as the weighted average of acquirer's and target's industry-adjusted ROA for pre-merger years. We then use the three-year average of the industry-adjusted ROA as a measure of the pre-merger ROA of the acquirer and the target. For the post-merger ROA, we calculate the three-year average of the combined firms (the post-merger acquirer since the target ceases to exist) industry-adjusted ROA. Last, we calculate the change in operating performance, ΔROA, as the difference between post-merger ROA and pre-merger ROA.

The multivariate analysis using change in industry adjusted ROA and our standard control variables reveals that operating performance improvement after the merger does not drive the announcement period returns. We find no significant differences between family and non-family firms' operating performance pre- to post-merger, suggesting that better operating management post-merger does not explain the better abnormal returns captured by family firms.

As a second potential channel, we examine whether family firms keep the deal relatively quiet as compared to non-family firms. If family firms are better at keeping the deal quiet than non-family firms, then family firms should have fewer competing bids and, hence, potentially pay lower prices for targets. We use the number of bidders from the ThomsonOne SDC database to examine this question. We use a logistic model to see if the probability of having multiple bidders is higher or lower for family firms conditioned upon our control variables. We then generate a new multiple bidder dummy variable which is equal to 1 if there are 2 or more competing bidders, and zero otherwise. The coefficient estimate in our logistic model estimation for the family firm indicator is not statistically significant. This leads us to conclude that family firms do not seem to be better at keeping the deal quiet than non-family firms. Please note that there are only 30 firms that had multiple bidders in our sample, likely leading to low power for this test.

A.2 Robustness Tests

We have shown that family firm acquirer returns are positive, or less negative, than non-family firm acquirers, and that family firm targets have lower positive returns than non-family firm targets.

While these results combined with our logistic regression results are sufficient to show that family firm acquisitions are different from non-family firm acquisitions, for robustness we now explore whether the family firm acquirer gains come at the expense of target shareholders.

We begin the exploration of this issue by examining the combined market reaction to the deal announcement, which we denote with DCAR for Deal Cumulative Abnormal Return. We calculate a value weighted average of acquirer and target announcement returns to measure the overall quality of the merger perceived by the market (DCAR) and argue that this represents the size of the aggregate synergy gains resulting from the merger as in Wang and Xie (2009) and Bradley, Desai, and Kim (1988). Our unreported multivariate regression results confirm the prior abnormal return evidence that family owned acquirers, capture a larger relative share of the acquisition gains. When examining DCARs in the cross-section, we do not find any difference in the size of the aggregate benefit when the acquirer has family ownership, which suggests that the overall acquisition "pie" is on average the same when families or non-families are bidders.

We provide an additional test of the extent to which family firm acquirers capture a larger share of the acquisition pie by using a relative acquirer gain measure adapted for acquirers from one developed for targets by Ahern (2012) and Bauguess et al. (2009). The variable, $\Delta\$CAR$ (relative acquirer gain), is calculated as "acquirer abnormal \$ returns - target abnormal \$ returns divided by the sum of the acquirer's and target's market value of equity 6 trading days prior to the announcement date". We then regress this measure on a family firm indicator and the series of control variables previously used. The multivariate regression results confirm the prior abnormal return evidence that family owned acquirers, in general, capture a larger relative share of the acquisition gains.

Since our sample spans the 2009-2010 economic crises, we perform our analysis controlling for that period using a financial crises indicator variable as a control in our cross-sectional regressions and univariate tests. Our results carry through in its presence, as well.

An additional assumption of our analysis is that the specifications and proxies that we use adequately capture the appropriate attributes. We find that our results are also robust to various alternative specifications and proxies as a final set of exercises in robustness. For the sake of parsimony, we review the results below but have omitted the resulting tables though they, like the other appendix tables, are available upon request.

Family owners are not the only type of large influential shareholder. Other large blockholders may have similar incentives as family shareholders; suggesting a general blockholder effect rather than a family firm effect. To examine this argument, we include a binary variable indicating the existence of non-family blockholders. Our analysis shows that the inclusion of the other large blockholder variable does not change the relation between family presence, target selection and M&A shareholder value effects.

A concern may arise that our results are driven by industry traits. For instance, if family firms operate in low Tobin's Q industries more than non-family firms, then they may be more likely to choose targets within their own industries, which may also have low Tobin's Q. Following prior literature (Morck, Shleifer, and Vishny, 1990; Officer, 2003; Alexandridis et al., 2013), we use a same industry indicator in our analysis to examine this conjecture and find that its coefficient estimate is not statistically significant suggesting our results are not driven by less (more) initial diversification for family firms relative to non-family firms.

Finally, when measuring cumulative abnormal returns to calculate ACAR, BHAR, DCAR and TCAR, our reported results use the CRSP value weighted index as the reference portfolio. As a robustness, we also use CRSP equal weighted index and our results do not change.

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Table 1

Definitions of main variables used in the empirical analysis

Abnormal Returns

Acquirer Cumulative Abnormal Returns (ACAR (-1, +1)): Cumulative abnormal return of the bidding firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return.

Target Cumulative Abnormal Returns (TCAR (-1, +1)): Cumulative abnormal return of the target firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return.

Deal Cumulative Abnormal Returns (DCAR (-1, +1)): The deal return (DCAR) is the value-weighted average of the bidder's (ACAR) and the target's announcement CARs (TCAR). Market values that are used to value weight DCAR are measured 6 trading days prior to M&A announcement dates.

1 year Buy and Hold Abnormal Returns (BHAR (0, +12)): Buy and Hold Abnormal Return of the bidding firm's stock in the 12 month event window (0, +12) where 0 is the announcement month. BHARs are calculated by compounding successive monthly raw returns and then adjusting the raw returns with benchmark returns. Benchmark returns are calculated using Fama French (1993) time series model estimated over the period starting 66 months and ending 6 months prior to the announcement month.

Family Firm Variables

Family Firm: Binary variable that equals one when the family holds a 5% or larger ownership stake and zero otherwise.

Family Ownership: Total cash flow right ownership by founders and their family members.

Deal Characteristics

All Cash Deals: Equals one for deals in which the sole consideration is cash, zero otherwise.

All Stock Deals: Equals one for deals in which consideration is pure stock, zero otherwise.

Deal Value: Value of the transaction from ThomsonOne SDC.

Mixed Deals: Equals one for deals in which consideration is neither all-cash nor all-stock, zero otherwise. If there was not detailed information on the payment method then it is assumed to be a mixed deal.

Relative Size: Value of the transaction from ThomsonOne SDC divided by the bidder's market value of equity 20 trading days prior to the announcement from CRSP.

Acquirer Characteristics:

Acquirer Blockholder Dummy: Equals one when either a hedge fund, private equity fund, mutual fund, pension fund, or insurance company holds a 5% or larger ownership stake in the firm and zero otherwise.

Acquirer Capital Expenditure: Level of annual capital expenditure form Compustat.

Acquirer Cash/Asset Ratio: Cash and cash equivalents measured at the previous FYE before the merger divided by total assets measured at the previous FYE before the merger.

Acquirer Firm Age: Natural log of firm age since firm's foundation.

Acquirer Leverage: Long Term Debt measured at the previous FYE before the merger / Total Assets measured at the previous FYE before the merger.

Acquirer MVE: Acquirer market value of equity six trading days prior to the acquisition announcement date.

Acquirer Risk: Standard deviation of monthly returns for 36 months (standard deviation is calculated for month -40 through month -5 relative to the month of the acquisition announcement) calculated for each acquirer.

Acquirer ROA: Operating income before depreciation divided by total assets at the previous FYE before the merger.

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Table 1 continued

Acquirer Size: Market value of assets of the acquirer measured at the previous FYE before the merger.

Acquirer Tobin's Q: Market value of assets over book value of assets (compustat item6- compustat item60 + compustat item25 * compustat item l99) / compustat item 6. All financials are measured at the previous FYE before the merger announcement.

Target Characteristics:

Target Leverage: Long Term Debt measured at the previous FYE before the merger / Total Assets measured at the previous FYE before the merger.

Target Premium: Calculated premium similar to Officer (2003). First calculated a premium measure (Premium 1) based on SDC deal value divided by target's market value of equity from CRSP, 43 trading days prior to the acquisition announcement minus one. Second premium measure (Premium 2) is based on SDC price data, which equals to the initial offer price divided by target's share price from CRSP, 43 trading days prior to the announcement minus one. Target Premium measure equals to 1 if Premium1 is between 0 and 2, if not, equals to Premium 2 if Premium 2 is between 0 and 2. Otherwise the combined premium is left as a missing observation.

Target Risk: Standard deviation of monthly returns for 36 months (standard deviation is calculated for month -40 through month -5 relative to the month of the acquisition announcement) calculated for each target firm.

Target ROA: Net income measured at the previous FYE before the merger divided by total assets measured at the previous FYE before the merger.

Target Size: Market value of assets of the target measured at the previous FYE before the merger.

Target Stock Price Runup: Market-adjusted buy-and-hold return of the bidding firm's stock over the period beginning 90 trading days and ending 5 trading days prior to the announcement date from CRSP.

Target Tobin's Q: Market value of assets over book value of assets (compustat item6-compustat item60 + compustat item25 * compustat item l99) / compustat item 6. All financials are measured at the previous FYE before the merger announcement.

Other Variables:

⌐IROA: Industry-adjusted ROA of the acquirer and the target is calculated by subtracting the median industry ROA based on the two-digit SIC codes. The industry-adjusted ROA of the portfolio for a given fiscal year is calculated as the weighted average of acquirer's and target's industry-adjusted ROA. Pre-merger ROA is the three-year average of the industry-adjusted ROA for the portfolio. Post-merger ROA is calculated as the three-year average of the combined firm's industry-adjusted ROA. ΔROA is the difference between post-merger ROA and pre-merger ROA. ROA is operating income in the current year divided by total assets from previous year. Weights are calculated using total assets measured at the previous FYE before the merger.

Multiple Bidder: Equals one if there are 2 or more competing bidders, 0 otherwise. Data is from ThomsonOne SDC.

Pre3YR: Total number of acquisitions an acquirer has made in the past 3 years before the acquisition announcement.

Table 2
Descriptive Statistics
This table provides summary statistics, difference of means tests with two-sample t-statistics for family and non-family acquisitions for the 607 acquisitions that occurred from January 2001 through December 2015. Variable definitions are provided in Table 1.

	N	Mean	Median	Std. Dev.	Min.	Max.	(1) Family (n=133)	(2) Non-family (n=474)	FF-NFF (t-stat)
Family Firm Variables									
Family firm %	133	0.219	0	0.414	0	1	-	-	-
Family ownership %	133	0.192	0.154	0.146	0.05	0.818	-	-	-
Deal Characteristics									
All cash deals	607	0.511	1	0.500	0	1	0.564	0.496	0.068
									(1.389)
All stock deals	607	0.142	0	0.349	0	1	0.098	0.154	-0.056*
									(1.645)
Number of bidders	607	1.056	1	0.257	1	3	1.075	1.051	0.025
									(0.973)
Relative size	607	0.280	0.122	0.401	0.001	2.342	0.299	0.274	0.025
									(0.623)
Deal value	607	2,144	529	5,780	3	67,286	1,533	2,315	-782
									(1.380)
Acquirer Characteristics									
Acq. Blockholder	607	0.898	1	0.303	0	1	0.902	0.897	0.005
									(0.189)
Acq. cash/asset	607	0.196	0.129	0.185	0	0.803	0.203	0.194	0.09
									(0.518)
Acq. MVE	607	27,399	5,245	53,897	50	575,867	26,689	27,598	-909
									(0.172)
Acq. Size	607	35,188	7,319	63,308	144	302,095	35,211	35,181	29
									(0.005)
Acq. Leverage	607	0.162	0.138	0.153	0	0.731	0.122	0.173	-0.051***
									(3.439)
Acq. Risk	607	0.125	0.102	0.0794	0.026	0.533	0.133	0.123	0.01
									(1.298)
Acq. Tobin's Q	607	2.244	1.879	1.311	0.623	8.412	2.266	2.238	0.028
									(0.214)
Acq. firm age (yrs)	607	51.262	36	37.834	2	200	40.872	54.177	-13.305***
									(3.620)
Target Characteristics									
Target MVE	607	1,532	368	4,363	2	51,102	1,059	1,665	-606
									(1.417)
Target size	607	2,089	498	4,993	8	38,592	1,570	2,234	-665
									(1.358)
Target leverage	607	0.144	0.037	0.195	0	0.946	0.140	0.145	-0.005
									(0.234)
Target ROA	607	-0.054	0.026	0.248	-1.550	0.306	-0.061	-0.052	-0.009
									(0.399)
Target Tobin's Q	607	1.939	1.608	1.141	0.550	6.815	1.687	2.009	-0.322***
									(2.893)

Table 2 continued

	N	Mean	Median	Std. Dev.	Min.	Max.	(1) Family (n=133)	(2) Non-family (n=474)	FF-NFF (t-stat)
Target risk	607	0.175	0.153	0.0959	0.041	0.759	0.181	0.173	0.008
									(0.820)
Target runup	607	0.158	0.08	0.690	-0.661	14.440	0.147	0.161	-0.014
									(0.205)
Target premium	607	0.602	0.501	0.404	0.007	1.987	0.637	0.592	0.045
									(1.118)

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Table 3
Family Firms and Their Targets

This table reports the regression results of a Firth (1993) model estimation which corrects logistic regression for certain biases and uses penalized maximum likelihood estimates. Firth model results in finite estimates even when there are perfect prediction variables and is also used in analyzing rare events. The dependent variable is an indicator variable taking on a value of one if the target is acquired by a family firm and zero otherwise. Column 1 reports Firth logit regression coefficients and column 2 reports odds ratios corresponding to column 1 coefficients. Variable definitions are provided in Table 1. T-stats are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Family Firm Acquisitions and Target Characteristics

Dependent Variable: Family Firm Acquirer Indicator

	(1)	(2)
	Firth Logit	Odds Ratio
Target Tobin's Q	-0.318**	0.727**
	(2.55)	(2.55)
Target Size	-0.018	0.982
	(0.66)	(0.66)
Target Leverage	0.727	2.069
	(1.12)	(1.12)
Target ROA	-0.063	0.939
	(0.13)	(0.13)
Target Risk	-1.047	0.351
	(0.69)	(0.69)
Relative Deal Size	0.375*	1.455*
	(1.70)	(1.70)
Acquirer Cash/Asset	-1.070	0.343
	(1.36)	(1.36)
Acquirer Size	0.003	1.003
	(1.34)	(1.34)
Acquirer Leverage	-2.733***	0.065***
	(3.16)	(3.16)
Acquirer Risk	-1.659	0.190
	(0.74)	(0.74)
Acquirer Tobin's Q	0.070	1.072
	(0.73)	(0.73)
Blockholder Dummy	0.421	1.524
	(1.06)	(1.06)
Acquirer firm age	-0.445**	0.641**
	(2.61)	(2.61)
Ind/Yr Fixed Effects	Yes	Yes
N	607	607

Table 4
Abnormal Return Descriptive Statistics

This table provides summary statistics and difference of mean tests for short-run abnormal returns for the acquirers (ACAR), targets (TCAR) combined deal abnormal return for acquirer and target (DCAR) and 1 year long-run abnormal return for acquirers (BHAR). This table covers family and non-family acquisitions that occurred from January 2001 through December 2015. Variable definitions are provided in Table 1. T statistic values are shown in parenthesis below means, medians use one-sample t statistics and differences in mean uses two-sample t statistics. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Abnormal Returns for Family versus Non-Family Firms

	N	Mean	Median	Std. Dev.	Min.	Max.	Family (n=133)	Nonfamily (n=474)	FF – NFF (t-value)
Acq. CAR (-1,+1)	607	-0.009***	-0.005*	0.067	-0.236	0.264	0.001	-0.012***	0.014**
		(3.309)	(1.839)				(0.184)	(3.888)	(2.123)
Target CAR (-1,+1)	607	0.281***	0.238***	0.234	-0.302	1.392	0.255***	0.288***	-0.033
		(29.586)	(87.518)				(11.955)	(27.167)	(-1.443)
BHAR 1 year	596	-0.131***	-0.077***	0.448	-1.929	1.744	-0.077*	-0.146***	0.069
		(7.139)	(28.315)				(1.759)	(7.293)	(1.551)
DCAR (-1,+1)	607	0.019***	0.011***	0.064	-0.199	0.324	0.019***	0.018***	0.001
		(7.314)	(4.045)				(3.817)	(5.947)	(0.215)

Table 5
Acquirer CAR, BHAR and Organizational Structure

This table reports multivariate OLS results of regressing Acquirer CARs (ACAR -1, +1) and Acquirer 1 year BHAR (0, +12) on family presence, other blockholder presence and control variables. ACAR (-1, +1) is the cumulative abnormal return of the bidding firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. BHAR (0, +12) is the buy and hold abnormal return of the bidding firm's stock in the 12-month event window (0, +12) where 0 is the announcement month. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return. Variable definitions are provided in Table 1. T-stats are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ACAR	ACAR	BHAR	BHAR
	(1)	(2)	(3)	(4)
Family Ownership	0.051**		0.437**	
	(2.39)		(2.10)	
Family Firm Dummy		0.014**		0.116**
		(1.99)		(2.53)
Target Runup	0.003	0.003	-0.011	-0.010
	(0.91)	(0.95)	(0.69)	(0.63)
Blockholder Dummy	0.004	0.003	0.000	-0.008
	(0.58)	(0.46)	(0.01)	(0.16)
Acquirer Cash/Asset	-0.048**	-0.046*	-0.057	-0.048
	(2.00)	(1.94)	(0.41)	(0.34)
Acquirer Size	-0.000	-0.000	-0.000	-0.000
	(1.11)	(1.03)	(0.70)	(0.63)
Acquirer Leverage	0.031	0.033	0.255	0.269*
	(1.34)	(1.39)	(1.64)	(1.72)
Acquirer Risk	0.025	0.025	-2.501***	-2.511***
	(0.39)	(0.38)	(5.62)	(5.71)
Acquirer Tobin's Q	0.001	0.001	-0.097***	-0.098***
	(0.42)	(0.38)	(5.73)	(5.82)
Acquirer firm age	0.004	0.004	-0.004	-0.001
	(0.84)	(0.93)	(0.14)	(0.03)
All Cash	0.013*	0.013*	0.084*	0.083*
	(1.82)	(1.79)	(1.91)	(1.84)
All Stock	-0.019	-0.019	0.142**	0.143**
	(1.63)	(1.62)	(2.25)	(2.27)
Relative Deal Size	-0.015	-0.014	0.010	0.017
	(1.35)	(1.26)	(0.12)	(0.22)
Target Size	-0.002***	-0.002***	-0.000	-0.000
	(2.62)	(2.66)	(0.02)	(0.03)
Target Leverage	0.009	0.009	-0.120	-0.116
	(0.49)	(0.52)	(1.12)	(1.09)

Table 5 continued

Dependent Variable	ACAR	ACAR	BHAR	BHAR
	(1)	(2)	(3)	(4)
Target ROA	-0.017	-0.017	-0.208**	-0.203**
	(1.22)	(1.19)	(2.11)	(2.10)
Target Tobin's Q	-0.007**	-0.007**	-0.030*	-0.029*
	(2.57)	(2.53)	(1.70)	(1.67)
Target Risk	-0.015	-0.013	-0.521*	-0.513*
	(0.37)	(0.33)	(1.92)	(1.90)
Intercept	-0.012	-0.014	0.984***	0.969***
	(0.40)	(0.48)	(5.21)	(5.17)
Ind/Yr Fixed Effects	Yes	Yes	Yes	Yes
N	607	607	596	596

Table 6
Target CARs and Organizational Structure

This table reports multivariate OLS results of regressing Target CARs (TCAR -1, +1) on family presence, other blockholder presence and control variables. TCAR (-1, +1) is the cumulative abnormal return of the target firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return. Variable definitions are provided in Table 1. T-stats are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable: TCAR (-1, +1).

	(1)	(2)
Family Ownership	-0.183**	
	(2.49)	
Family Firm Dummy		-0.043*
		(1.72)
Target Runup	-0.033	-0.033
	(1.03)	(1.04)
Blockholder Dummy	0.043	0.046
	(1.06)	(1.13)
Acquirer Cash/Asset	0.083	0.080
	(1.08)	(1.04)
Acquirer Size	0.014	0.014
	(1.61)	(1.59)
Acquirer Leverage	-0.015	-0.018
	(0.21)	(0.25)
Acquirer Risk	0.193	0.196
	(0.86)	(0.87)
Acquirer Tobin's Q	-0.000	0.000
	(0.00)	(0.01)
Acquirer firm age	0.017	0.016
	(1.16)	(1.08)
All Cash	0.078***	0.078***
	(3.24)	(3.24)
All Stock	-0.029	-0.028
	(1.12)	(1.09)
Relative Deal Size	-0.039	-0.043
	(1.21)	(1.32)
Target Size	-0.027***	-0.027***
	(2.70)	(2.71)
Target Leverage	0.089	0.087
	(1.25)	(1.23)

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Table 6 continued

Dependent Variable: TCAR (-1, +1).

	(1)	(2)
Target ROA	-0.088	-0.090
	(1.46)	(1.48)
Target Tobin's Q	-0.019	-0.019
	(1.57)	(1.57)
Target Risk	0.084	0.081
	(0.58)	(0.56)
Intercept	0.052	0.059
	(0.41)	(0.47)
Ind/Yr Fixed Effects	Yes	Yes
N	607	607

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Table 7
Descriptive Statistics for Matched Sample

This table provides summary statistics, difference of means tests for the matched sample with two-sample t-statistics for family and non-family acquisitions for the 244 acquisitions that occurred from January 2001 through December 2015 using the matched sample of family and non-family firm M&A transactions. The matched sample used in this analysis matches family firm acquirers to non-family firm acquirers using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009) based on acquirer size, Tobin's Q, leverage and age since founding. Variable definitions are provided in Table 1.

Matched Sample

	N	All	(1) Family (n=122)	(2) Non-family (n=122)	(1)-(2) (t-stat)
Acquirer block holder dummy	244	0.926	0.934	0.918	0.016
					(0.488)
Acquirer cash/asset ratio	244	0.215	0.194	0.236	-0.042
					(1.591)
Acquirer market value of equity	244	15,041	17,540	12,542	4,999
					(1.174)
Acquirer total assets	244	8,756	9,608	7,905	1,703
					(0.729)
Acquirer leverage	244	0.126	0.122	0.129	-0.007
					(0.380)
Acquirer risk	244	0.143	0.137	0.150	-0.013
					(1.183)
Acquirer Tobin's Q	244	2.179	2.199	2.159	0.039
					(0.229)
Acquirer firm age	244	42.324	41.377	43.271	-1.893
					(0.441)

Table 8
Family Firms and Their Targets with Matched Sample

This table reports the regression results of a Firth (1993) model estimation which corrects logistic regression for certain biases and uses penalized maximum likelihood estimates for the matched sample. Firth model results in finite estimates even when there are perfect prediction variables and is also used in analyzing rare events. The matched sample used in this analysis matches family firm acquirers to non-family firm acquirers using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009) based on acquirer size, Tobin's Q, leverage and age since founding. The dependent variable is an indicator variable taking on a value of one if the target is acquired by a family firm and zero otherwise. Column 1 reports Firth logit regression coefficients and column 2 reports odds ratios corresponding to column 1 coefficients. Variable definitions are provided in Table 1. T-stats are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Family Firm Acquisitions and Target Characteristics

Dependent Variable: Family Firm Acquirer Indicator	*(1)*	*(2)*
	Firth Logit	*Odds Ratio*
Target Tobin's Q	-0.339**	0.713**
	(2.13)	(2.13)
Target Size	-0.059	0.942
	(0.85)	(0.85)
Target Leverage	0.448	1.565
	(0.45)	(0.45)
Target ROA	-0.399	0.671
	(0.66)	(0.66)
Target Risk	-1.911	0.148
	(0.96)	(0.96)
Relative Deal Size	0.186	1.204
	(0.70)	(0.70)
Acquirer Cash/Asset	-2.419**	0.089**
	(2.31)	(2.31)
Acquirer Size	0.007	1.007
	(1.30)	(1.30)
Acquirer Leverage	-1.369	0.254
	(1.09)	(1.09)
Acquirer Risk	-2.277	0.102
	(0.79)	(0.79)
Acquirer Tobin's Q	0.135	1.144
	(0.94)	(0.94)
Blockholder Dummy	0.490	1.633
	(0.86)	(0.86)
Acquire firm age	-0.395	0.673
	(1.57)	(1.57)
Ind/Yr Fixed Effects	Yes	Yes
N	244	244

Table 9

Abnormal Returns for Family versus Non-Family Firms for Matched Sample

This table provides summary statistics and difference of mean tests for short-run abnormal returns for the acquirers (ACAR), targets (TCAR), combined deal abnormal return for acquirer and target (DCAR) and 1 year long-run abnormal return for acquirers (BHAR) for the matched sample. The matched sample used in this analysis matches family firm acquirers to non-family firm acquirers using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009) based on acquirer size; Tobin's Q, leverage and age since founding. Table covers family and non-family acquisitions that occurred from January 2001 through December 2015. Variable definitions are provided in Table 1. T statistic values are shown in parenthesis below means, medians use one-sample t statistics and differences in means use two-sample t statistics. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Abnormal Returns for Family versus Non-Family Firms for Matched Sample

	N	Mean	Median	Std. Dev.	Min.	Max.	Family (n=122)	Nonfamily (n=122)	FF-NFF (t-stat)
Acq. CAR (-1,+1)	244	-0.013***	-0.006	0.071	-0.227	0.264	0.003	-0.028***	0.031***
		(2.860)	(1.320)				(0.510)	(4.237)	(3.472)
Target CAR (-1,+1)	244	0.271***	0.223***	0.240	-0.302	1.128	0.259***	0.283***	-0.024
		(17.638)	(14.514)				(11.397)	(13.650)	(0.791)
BHAR 1 year	238	-0.114***	-0.079**	0.487	-1.662	1.744	-0.068	-0.162***	0.094
		(3.611)	(2.503)				(1.464)	(3.826)	(1.491)
DCAR (-1,+1)	244	0.014***	0.011***	0.066	-0.199	0.237	0.022***	0.006	0.016*
		(3.313)	(2.603)				(4.190)	(0.920)	(1.843)

Table 10
Acquirer CAR, BHAR Regressions for the Matched Sample with Full Controls

This table reports multivariate OLS of regressing Acquirer CARs (ACAR -1, +1) and Acquirer 1 year BHAR (0, +12) on similarity measures for the matched sample. CAR (-1, +1) is the cumulative abnormal return of the bidding firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. BHAR (0, +12) is the buy and hold abnormal return of the bidding firm's stock in the 12-month event window (0, +12) where 0 is the announcement month. The matched sample used in this analysis matches family firm acquirers to non-family firm acquirers using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009) based on acquirer size, Tobin's Q, leverage and age since founding. Variable definitions are provided in Table 1. T statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ACAR	ACAR	BHAR	BHAR
	(1)	(2)	(3)	(4)
Family Ownership	0.070**		0.393*	
	(2.02)		(1.81)	
Family Firm Dummy		0.029***		0.101
		(2.95)		(1.62)
Target Runup	0.013	0.014	0.014	0.023
	(1.16)	(1.30)	(0.18)	(0.30)
Blockholder Dummy	0.016	0.013	0.167	0.148
	(0.89)	(0.70)	(1.41)	(1.25)
Acquirer Cash/Asset	-0.053	-0.044	-0.044	-0.028
	(1.62)	(1.36)	(0.21)	(0.13)
Acquirer Size	0.000	0.000	0.000	0.000
	(0.35)	(0.26)	(0.09)	(0.11)
Acquirer Leverage	0.078*	0.082**	0.671***	0.679***
	(1.97)	(2.09)	(2.65)	(2.68)
Acquirer Risk	0.118	0.123	-2.684***	-2.661***
	(1.27)	(1.34)	(4.45)	(4.40)
Acquirer Tobin's Q	0.005	0.005	-0.119***	-0.118***
	(1.10)	(1.07)	(4.18)	(4.14)
Acquirer firm age	-0.003	-0.001	-0.083	-0.074
	(0.41)	(0.10)	(1.58)	(1.39)
All Cash	0.016	0.016	0.122	0.121
	(1.32)	(1.32)	(1.53)	(1.52)
All Stock	-0.019	-0.017	0.176*	0.178*
	(1.25)	(1.12)	(1.74)	(1.76)
Relative Deal Size	-0.002	-0.001	-0.014	-0.001
	(0.18)	(0.04)	(0.17)	(0.01)
Target Size	-0.004	-0.004	-0.010	-0.010
	(1.57)	(1.55)	(0.64)	(0.65)
Target Leverage	-0.015	-0.012	-0.357	-0.332
	(0.45)	(0.36)	(1.61)	(1.49)

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Table 10 continued

Dependent Variable	ACAR	ACAR	BHAR	BHAR
	(1)	(2)	(3)	(4)
Target Roa	0.005	0.006	-0.232*	-0.233*
	(0.26)	(0.30)	(1.85)	(1.86)
Target Tobin's Q	-0.011**	-0.010**	0.023	0.024
	(2.26)	(2.07)	(0.75)	(0.78)
Target Risk	-0.014	-0.004	-0.312	-0.286
	(0.22)	(0.06)	(0.76)	(0.70)
Intercept	0.026	0.013	0.749**	0.708**
	(0.50)	(0.24)	(2.13)	(2.00)
Ind/Yr Fixed Effects	Yes	Yes	Yes	Yes
N	244	244	238	238