Price pressure in corporate spinoffs

Robin Greenwood
Harvard Business School
October 9, 2006

Abstract

Institutional investors who acquire stock via equity distributions from stocks they already own tend to sell these holdings immediately, especially if the spinoff is much smaller, or in a different industry, than the parent. However, these sales are partially offset by purchases from investors that specialize in the characteristics of the spinoff. In a large sample of spinoffs between 1980 and 2004, we show that short-run returns following corporate spinoffs are related to predictable changes in ownership composition. The more similar are the parent and the spinoff, the lower is the change in ownership and the smaller is the price decline following distribution. The relative sizes of the pre- and post-spinoff firms play a significant role in explaining ownership changes and their corresponding effects on price. Fund flow driven purchases, however, are modest and exert no effect on price.

I. Introduction

This paper analyzes price pressure induced by institutional investor sales surrounding corporate spinoffs. On the ex-date of a spinoff, a firm distributes stock in one of its divisions to shareholders in the form of a nontaxable dividend. Following the ex-date, the spinoff is traded as a separate entity in public markets. Spinoffs have been associated with improvements in investment efficiency (Chemmanur and Yan, 2004; Ahn and Denis, 2004; Gertner, Powers, and Scharfstein, 2002; Dittmar and Shivdasani, 2003; and Burch and Nanda, 2003), and firm focus (Desai and Jain, 1999).

Given the choice, shareholders of the parent may not want to hold the shares of the spinoff, particularly if the characteristics of the new firm differ markedly from the characteristics of the pre-spinoff combined firm. The spinoff may be much smaller, or in a different industry in which the institution has no expertise. The rule-based response of many investors, particularly those with holdings concentrated in large stocks, may be to sell. These investors may also wish to sell the parent firm, whose characteristics differ by virtue of having divested a part of its business. In short, spinoffs instigate rule-based selling.

The trading described above is largely disconnected from the economic prospects of the firm. In an efficient capital market, arbitrageurs accommodate rule-based trading by buying from institutional sellers, mitigating any effects that the forced sales might otherwise have on price. In practice, these inflows of capital are likely to come from other institutions that are specialized in smaller capitalization stocks, whose preferences (or statutory obligations to investors) do not allow them to invest in the firm until after the spinoff. Inflows may be greater when the spinoff is in an industry with high institutional demand, in which case the event of the spinoff triggers demand from investors at the sidelines.

With the objective of understanding the effects of clientele-driven demand on security prices, this paper analyzes the consequences of institutional and mutual fund turnover on stock returns around the ex-date of a spinoff. We define a clientele effect as demand that is driven by a stock's salient characteristics, but is unrelated to its cash flow prospects. A series of recent papers argue that investors buy and sell stocks based on their characteristics. For example, in the classic studies on S&P 500 index changes,

Shleifer (1986) and Harris and Gurel (1986) show that demand for a stock that is driven by index membership predicts returns. Barberis and Shleifer (2000) predict that assets classified in the same arbitrary investment "style" should have excess trading volume and comovement of stock returns, simply because their commonality in characteristics causes commonality in trading. Consistent with their intuition, Nagel (2005) shows that rule-based investing accounts for a large fraction of total trading volume.

Corporate actions, and especially spinoffs, are a useful setting for analyzing investor clientele because investors are faced with exogenous changes in the characteristics of their holdings. Recent research shows that somewhat arbitrary preferences have a dramatic effect on aggregate institutional ownership. Bushee (1998) shows that preferences over size, credit ratings, dividend yield, index membership, among other attributes, are important for characterizing institutional holdings, and Gompers and Metrick (2001) show that price, size, age, and dividend yield relate strongly to aggregate institutional ownership. Ferreira and Matos (2006) show that institutional preferences also play a significant role in cross-border portfolio investment.

Assembling a large database of corporate spinoffs between 1980 and 2004, we show that the purchases and sales by mutual funds and other institutions around the spinoff ex-date are associated with significant changes in stock prices. Our main findings are as follows. First, net institutional sales are largely a function of the relative size of the parent and spinoff firm – the smaller is the spinoff relative to the parent, the more likely it is that the spinoff differs from other firms in the institutional portfolio, and that institutions as a whole will sell. To a lesser extent, differences in industry, changes in trading venue, and S&P 500 index membership of the parent are also associated with net institutional sales.

Second, the spinoffs in our sample experience abnormal returns of approximately -2 percent in the 10-day window around the ex-date. The lower the returns, the higher the trading volume of the spinoff, and the greater are net institutional (or mutual fund) sales of stock. Institutional trading around the spinoff ex-date can be predicted as a function of the relative market capitalization of the parent and child. Thus, both actual and predicted institutional trading, are related to stock returns. It is comforting

that our results produce sensible estimates of the price elasticity of demand, consistent with work analyzing the effect of index additions and deletions on stock prices (e.g., Shleifer 1986; Harris and Gurel 1986; Wurgler and Zhuravskaya 2002).

Third, the link between characteristics, institutional sales, and prices applies, albeit to a lesser extent, in explaining the ex-date returns of the parent firm. Although changes in ownership are more challenging to predict, net institutional demand around the ex-date is also shown to be correlated with event returns.

Fourth, we examine whether some portion of the price pressure observed at the time of the spinoff can be explained by demand arising from inflow-driven purchases. Recent work (Lamont and Frazzini, 2006; Coval and Stafford, 2006) shows that mutual fund inflows and outflows may motivate purchases and sales by mutual funds. More generally, the spinoff decision could itself be motivated by the popularity of an industry with retail investors. We cumulate fund flows at the stock level, and ask whether net purchases are greater when the spinoff is in an industry in which other stocks received inflow driven purchases. We find a weak positive relation between net institutional purchases of the spinoff after the ex-date and retail inflows into the industry. But there is no evidence that these flow-driven sales are large enough to exert an effect on price. More importantly, industry-level inflows are not significantly different between the parent and spinoff firm, suggesting that the spinoff decision is not, on average, an attempt to capitalize on the popularity of a particular industry. However, our sample does not include tracking stock spinoffs (stocks in which the parent company retains a significant stake, and only floats a small percentage of the shares), for which a catering theory, such as the one described above, may play more of a role.

A few earlier papers study the stock market performance of corporate spinoffs. In a sample of 113 spinoffs between 1964 and 1990, Vijh (1994) detects positive returns on the ex-date. With similar motivations to the current paper, Abarbanell, Bushee, and Raedy (2003) find abnormal returns of 2.8% in a sample of 169 spinoffs, but no significant relationship between institutional sales and ex-date returns. Brown and Brooke (1993) find similar results in a sample of 74 spinoffs. One reason that we find quite

different results from many of these papers is that our larger sample does not condition on the availability of Compustat data. As Compustat data is typically only available for larger spinoffs, relying on it eliminates firms for which the clientele is likely to change the most. Net institutional sales are more pronounced when the spinoff firm is small in size compared with the parent, or when the spinoff firm is in a different industry, or trades on a different exchange.

Other than employing a larger sample, our paper can be distinguished from prior work in a few ways. First, our objective is to understand how much event returns can be explained based on predicted trading (rather than actual trading). This motivates a procedure in which we identify spinoff characteristics that predict turnover in the same direction as they predict event returns. Second, we recognize a distinction between institutional *turnover* and *net demand*. Specifically, while spinoffs induce selling by institutions that previously owned the combined parent company, they simultaneously induce buying by more specialized investors waiting at the sidelines, as proposed by Vijh (1994). To the extent that both sets of demand are rule-based, it is the sum of these effects that is relevant for calculating price pressure.[1] The distinction turns out to be important because the same characteristics that predict *sales* by existing owners also predict *purchases* by other investors. Once we net out purchases, only differences in size between the spinoff and the parent company predict demand and affect prices.

The role of size in institutional demand underscores a broader capital market phenomenon. Gompers and Metrick (2001) and Sosner and Kovtunenko (2003) argue that institutional preferences for large stocks may explain a large fraction of the size premium in expected stock returns. In our results, industry, market-to-book ratios, and changes in trading venue are related to institutional turnover, but only differences in size trace through to ex-date returns.

The paper proceeds as follows. Section II describes the sample. Section III shows that there is significant institutional turnover around the ex-date of the spinoff, and that turnover is related to differences in the characteristics of the parent and child firms. Section IV relates this trading to the stock

[1] An alternative interpretation is that buyers of spinoffs are acting as arbitrageurs, accommodating demand from the default sellers.

returns experienced by the spinoff around the ex-date, showing that predicted net purchases are correlated with event returns. The final section concludes.

II. Corporate spinoffs 1980-2005

We set out to construct a comprehensive database of all corporate spinoffs with an ex-date market value exceeding US $20 million between 1980 and 2005. We start with a list of all corporate spinoffs announced between 1980 and 2005 from Securities Data Company (SDC). SDC provides a short description of the deal, the announcement day, whether the spinoff was completed, and if so, the date on which the spinoff occurred. SDC occasionally provides some information on the exchange ratio and the stated motivation for the deal. We eliminate spinoffs that are not completed by December 2005, or for which the primary exchange of the parent is outside of the United States.

In addition to the observations collected from SDC, we search the CRSP database for dividends with a CRSP distribution code of 3763 or 3764 (denoting a tax-free equity distribution). CRSP identifies the child for 72 percent of these cases. For the remainder, we search news articles for mentions of the spinoff name. After merging the SDC and CRSP samples, we drop observations for which: (1) there are no press articles (2) the spinoff trades in the OTC market and pricing data is not available on CRSP or Datastream (3) both the parent and child are Real Estate Investment Trusts (4) we cannot identify more than five mutual fund or institutional owners of the parent before the event, or (5) an additional public offering is made close to the date of the spinoff. This final restriction rules out the possibility that investors were able to sell or short sell prior to the spinoff date. A series of recent papers (Lamont and Thaler 2003, Mitchell, Stafford and Pulvino, 2004) examine mispricing in settings in which a small fraction of the shares was trading prior to the spinoff. The final database contains 337 spinoffs, and is summarized in Table 1. There are approximately twice as many spinoffs during the 1990s than during the 1980s, although the sample contains at least one observation per calendar year.

Size, Industry, and Index membership

We collect a variety of characteristics about the spinoff and pre-ex-date parent firm. Market capitalization of the parent is measured on the last available day before the ex-date; for the spinoff firm, it is measured on the first day for which a closing price is available. We also match both firms to the appropriate New York Stock Exchange size decile. The table shows that more than half of the spinoffs are in the third size decile or below, with a median market capitalization of $220 million, while parent firms tend to be much larger.

We follow Fama and French (1997) industry definitions and code a dummy variable for whether the parent and spinoff are in different industries. This occurs in just over half the sample. Next, we identify whether the parent company was listed in the S&P index before the ex-date. We also read news articles for each spinoff and code a dummy variable that measures measure whether the spinoff reflects an active decision by management of the parent firm, or is a by-product of other decisions. This variable is given a value equal to one if the spinoff (a) was motivated by financial distress or restructuring, or (b) was a consequence of a merger or takeover of the parent, or (c) was requested by regulators. Somewhat surprisingly, it turns out that this variable does not have much influence on ex-date trading, or on stock prices.

Market-to-book ratios are calculated at the industry level and matched to the parent and spinoff. There are several motivations for industry matching. First, Compustat data is not available for many of the spinoff firms. Second, industry matched data is less noisy for the child because book assets may be poorly measured in the immediate years after the spinoff.

The table does not distinguish between the pre- and post-spinoff parent firm. It would be straightforward to do so, however, Abarbanell, Bushee, and Raedy (2003) show that post-ex-date parent firms are similar in characteristics to the pre-ex-date combined firm. In Table 1, this can be inferred from the relative size of the parent and child firms: when the pre-ex-date combined firm is large relative to the spinoff, the post-ex-date parent is naturally similar to the pre-ex-date combined firm.

III. Institutional trading of corporate spinoffs

This section examines institutional turnover around the ex-date. We start with some simple statistics that describe ownership of the parent and spinoff firm around the ex-date. We then turn to cross-sectional determinants of institutional trading.

Institutional Ownership of the spinoff

Institutions with assets over $100 million are required to file quarterly 13F statements of their equity holdings with the SEC. These data are compiled by Thomson Financial. Institutions are classified into five groups (Banks, insurance companies, investment companies, investment advisors, and all others). However, the breakdowns are often imprecise. For example, Fred Alger, Allstate Pension, and AMICA Insurance are all classified as "other" (Fred Alger is an investment manager that runs mutual funds, AllState Pension is a pension fund, and AMICA insurance is an insurance company), and BNY Asset Management is incorrectly classified as a bank. Therefore, rather than rely on the Thomson classifications, we analyze institutions as a group and then perform a separate analysis on mutual funds, for which we have additional data.

Event time is described in Figure 1. We track ownership starting one quarter before, and ending five quarters after, the ex-date. In most cases, the ex-date falls between quarter ends and this exercise is straightforward. In a few cases, the spinoff occurs on the last day, or close to the last day of the quarter. When this happens, we find significant misreporting of holdings and therefore skip a quarter before measuring post-event holdings. It seems reasonable that this misreporting is the result of (1) confusion regarding the distribution date and (2) confusion regarding filing requirements for new securities.[2]

We start by analyzing the holdings of institutions that held the parent prior to the spinoff ("Default spinoff holders"). The number of owners is denoted by *N*. Table 2 shows that the mean parent is held by 209 institutions just prior to the ex-date. Thus 209 institutions, on average, receive default allocations of spinoff shares. By the end of the first quarter-end following the ex-date, nearly half of these

[2] Only securities that are listed on the quarterly "Official List of Section 13F Securities" must be reported. We do not have access to historical 13F lists.

institutions sell their entire holdings of the spinoff, leaving only 106 institutions. This pattern continues at a slower pace in the following quarters, with 64 of the original 209 owners left after 5 quarters.

In addition to this count-based measure, we aggregate holdings and report total institutional ownership.

$$H_{it} = \sum_{j} h_{ijt} / Shares_{it} \quad (1)$$

H_{it} denotes the fraction of firm i that is owned by institution j at the end of quarter t, h_{ijt} denotes the number of shares of the firm that are held by institution j, and $Shares_{it}$ is the end-of-quarter shares outstanding held by the public.[3] The table shows that on average, 53 percent of the shares of the parent are held by institutions prior to the spinoff. This is comparable to the value-weighted average institutional ownership of 51.6% in December 1996 reported by Gompers and Metrick (2001).

Conditioning on being an owner before the ex-date, these institutions shed 13 percent of the spinoff, about a quarter of their holdings. Out of 209 owners, about half sell their holdings entirely. The sharper results on N, compared with H, suggest that owners with small positions in the parent firm are more likely to sell their shares in the spinoff, consistent with rule-based trading. As a general comment, we favor the count-based measure as a gauge of default selling because it is less susceptible to misreporting in the number of shares. In their study of mutual fund liquidations, Coval and Stafford (2006) also prefer count-based measures of mutual fund demand.[4]

We now turn to institutional buyers. The table shows that on average, there are 23 new buyers, which purchase 11 percent of the firm in aggregate. Thus, the new owners are significantly more concentrated in their positions than the owners of the parent. Institutions that specialize in small stocks tend to hold approximately the same number of stocks as their large capitalization counterparts, with the mechanical implication that they hold larger percentage positions. Unreported results show that the new

[3] In a few cases in which less than 100 percent of the firm was divested (ie, the parent firm retained some ownership of the child), we replace total shares in (1) by the number of shares distributed by the parent, split adjusted.
[4] Institutional holdings may be biased in other ways. For one, institutions are not required to report holdings with market values less than $200,000. We find that this restriction does not appear to be binding, however, as there are over five million holdings records in the Thomson database of market value less than $200,000. This represents approximately one sixth of the records in the database.

owners also tend to hold smaller firms in the rest of their portfolio. In some respects, these new buyers can be thought of as arbitrageurs, standing at the sidelines willing to absorb the sales of other institutions.

The next lines of Table 2 combine the net sales from existing owners with the purchases by new owners to form total institutional ownership. The total number of owners is reduced from 209 to 129, while institutional ownership falls by 1.6 percent, to 51.2 percent.

Figure 2 presents these results graphically. Panel A plots *N*, the number of owners, and Panel B plots total ownership as a fraction of shares outstanding. These figures highlight our earlier observation that while net institutional ownership declines slightly around the ex-date, the overwhelming effect of the spinoff is to induce turnover among institutions.

Institutional ownership of the parent firm

The bottom half of Panel A in Table 2 summarizes ownership of the parent firm in event time. Again, we start by looking at institutions that owned the combined parent firm prior to the ex-date. The table shows that 163 of the 209 owners maintain their holdings in the quarter following the ex-date. Measured as a fraction of shares outstanding, these institutions own 52.8 percent of the parent before the ex-date, and 48.9 percent after, a modest drop. Again, the stronger results on *N* (compared with *H*) suggest that institutions that had relatively small positions in the parent are more likely to be default sellers. But by either measure, institutional demand is not significantly affected by the spinoff.

Turning to the new owners of the parent firm, 22 institutions buy a total of 3.1 percent of the parent firm following the ex-date.[5] Combining the inferences from the default owners with the post-ex-date institutional buyers paints an unsurprising picture. The post-ex-date parent firm closely resembles the pre-ex-date combined firm, as most spinoffs are small compared to the parent. Thus, institutions that were matched with the parent characteristics are likely to continue to own after the ex-date.

[5] To be precise, 22 institutions buy at some point between -1Q and +1Q. As the parent firm trades continuously before the ex-date, we cannot distinguish between sales that were made before the ex-date, and sales that were made after the ex-date but before the end of the quarter following the ex-date. This issue does not affect the child firm as it does not trade prior to the ex-date.

Mutual fund trading

While mutual funds represent only a fraction of assets under management by institutions, they are of particular interest because of their strict fiduciary responsibilities to investors.[6] Moreover, unlike banks, insurance companies, or university endowments, they tend to classify themselves within particular investment styles that are rigid with respect to firm characteristics. For example, in its prospectus, the Fidelity Blue Chip Growth Fund states that it normally invests in "common stocks of well-known and established companies" and additionally requires that "at least 80% of assets [are invested in] blue chip companies (companies whose stock is included in the S&P 500 index or the Dow Jones Industries average), and companies with market capitalizations of at least $1 billion if not included in either index."

Thomson/Spectrum provides data on the holdings of mutual funds. Although mutual funds follow regular reporting schedules, the frequency varies, with many reporting only semi-annually. And, unlike 13F institutions, report dates do not always line up with quarter ends. Despite these difficulties, the mutual fund data have a couple of advantages relative to the 13F data. First, despite occasional reporting errors, small holdings are uncensored.[7] Second, even small mutual funds show up in the database, as all funds must file semi-annual reports with the SEC. In contrast, institutions with assets less than $100 million are not required to file holdings reports with the SEC.

We arrange the mutual fund data into event time, filling in missing quarters with lagged holdings. For spinoffs in which more than one quarter passes between the ex-date and the next report date, we check fund holdings on the day of the report and fill in zero for the missing quarter. Thus, if a fund sells all of its holdings after two quarters, but holdings one quarter after the ex-date are missing, we assume that the position was eliminated some short time after the ex-date.

[6] Between 1990 and 2005, mutual funds represent an average of 25 percent of the total assets managed by institutions, or 10 percent of the entire market. This figure has been rising between 1980 and 2005. Gompers and Metrick (2001) report that mutual funds managed 25.3 percent of the market, about 49 percent of total assets managed by institutions, as of December 1996.

[7] 13F institutions may not report their smaller holdings. Holdings that are both less than 10,000 shares and with market value less than $200,000 do not have to be reported. However, we have found that institutions typically report their small holdings anyway.

Panel B of Table 2 summarizes mutual fund trading around the ex-date of the spinoff. On average, 191 funds own a total of 13.4 percent of the parent at the end of the quarter before the ex-date.[8] In the quarter following the ex-date, only 90 of these 191 funds retain their shares in the spinoff. In aggregate, they sell 37 percent of their holdings within one quarter.

While there is heavy selling by pre-ex-date holders of the combined firm, the table shows that there is significant buying by mutual funds that did not hold the parent before. An average of 77 funds buy 5.9 percent of the shares outstanding, more than offsetting the 5 percent sales by default holders. On net, therefore, mutual funds are buyers of corporate spinoffs following the ex-date. This is somewhat surprising given our prior that mutual funds face strict investment guidelines, when compared with other large institutional investors.

The remainder of Panel B looks at mutual fund holdings of the parent firm. A similar pattern emerges. Out of 191 owners of the pre-ex-date combined firm, 121 maintain a position in the parent after the ex-date. Replacing some of the institutions that sell, 45 funds that did not own the parent before the ex-date become owners. Taken together, the total number of owners declines by about 20 percent, but ownership as a fraction of total shares remains almost flat, at 12.8 percent.

Trading determinants of the spinoff firm after the ex-date

While the aggregate results are interesting, our main interest is in the cross-sectional determinants of trading. We start with turnover (number of shares bought and sold, as a fraction of shares outstanding), a simple measure of trading activity from CRSP. Panel A of Table 3 shows results from estimates of

$$\begin{aligned} Turn_{Ex-date,Ex-date+5} &= a + bSize_{Parent} + cSize_{Child} \\ &+ d(M/B)_{Parent} + e(M/B)_{Child} + f1_{DiffIndustry} + g1_{DiffExchange} + h1_{Merger} + iSP500 + u_i \end{aligned} \quad (2)$$

The dependent variable is alternately 5- or 10-day turnover around the ex-date. The right-hand-side variables include the size deciles of the parent and child, their industry matched market-to-book ratios,

[8] In unreported tests, we find that fund ownership is significantly higher for large firms and for later sample years, reflecting the growth of mutual funds.

and dummy variables for whether the parent and child are in different industries, trade on different exchanges, whether the spinoff was non-voluntary, and whether the parent was in the S&P 500 index prior to the ex-date. All of these serve as characteristics that may enter into institutional preferences.

The table shows that the relative sizes of the parent and child firms are related to trading volume around the event. That is, when the spinoff is small, or the parent is large, trading volume is higher. Turnover also tends to be higher when either the parent or child firm is in an industry with a high market-to-book ratio, when the parent and child are in different industries, trade on different exchanges, or the parent is a member of the S&P 500 index. The same patterns generally describe 10-day turnover.

To get a sense of the importance of size in determining trading activity, Figure 3 plots trading volume around corporate spinoffs for both the parent and child. In Panel B, the sample is split into spinoffs for which the parent and child are of similar size (their NYSE size deciles do not differ by more than 2), or of different size (their NYSE size deciles differ by 3 or more). The figure reveals significant differences in trading volume, between spinoffs that are similar in size to the parent, and spinoffs that are significantly smaller than the parent.

Panel B of Table 3 turns to the composition of trading volume, measured using our institutional holdings data. As before, we start by analyzing the ownership of institutions that receive shares of the spinoff as a consequence of their ownership of the parent. Our first measure, ΔH, is the change in aggregate ownership of the firm by these institutions, expressed as a percentage of shares outstanding. The table shows that default owners are more likely to sell when the parent is large or the parent is small. Their propensity to sell is higher when the parent is in an industry with high market-to-book ratio relative to the child.

Our second measure of institutional sales, $\Delta N/N_{-1}$, is the percentage change in the number of institutions that hold a position in the spinoff, conditional on holding a position in the parent at the end of the previous quarter. The same patterns appear for this variable, with relative size of the parent and child bearing the strongest relationship to trading activity.

While existing owners tend to sell when the child is small relative to the parent firm, what about new owners? We calculate the percentage ownership at the end of the 1st quarter after the ex-date, conditional on not owning the parent the previous quarter. Interestingly, new owners display precisely opposite patterns to the existing owners of the parent. Where the parent is large relative to the child, institutions that did not own the parent tend to buy.

The last two columns of Panel B combine the inferences from the first four columns, looking at *aggregate* institutional holdings. Aggregate institutional ownership depends on the relative sizes of the parent and child firms, although the effect is weaker than before. In column (5), the coefficient on the child size decile drops from 0.020 to 0.009, while the coefficient on parent size drops to zero. When net sales are measured as the number of institutions (column 6), however the results are somewhat stronger, with both parent and child size entering significantly. None of the other variables enter in a consistent way.

Panel C turns to mutual fund ownership. Again, we start with mutual funds that own the parent just prior to the spinoff. The results on aggregate holdings ΔH, and the number of owners $\Delta N/N_{-1}$ are similar to the results we obtain with the full set of institutional data. Mutual funds are more likely to sell the spinoff when the parent firm is large in comparison with the child, when the parent market to book is high, the child market-to-book is low, and when the parent and child are in different industries or listed on different exchanges.

Some general comments on these results are in order. First, the results on the count based variable $\Delta N/N_{-1}$, tend to be statistically stronger than the results on changes in ownership ΔH. We attribute this to (1) measurement error in the number of shares, and (2) an increased willingness to be a default seller if the initial position is small. Second, differences in industry and differences in exchange are positively related to institutional *turnover*, but negatively related to *net demand*. A similar pattern emerges using industry market-to-book ratios. While a specific institution may be restricted to holding stocks with a particular characteristic (e.g., high market-to-book growth stocks), other institutions, that are waiting at the sidelines, are specialized in different characteristics (e.g., low market-to-book value stocks). As the

table reveals, the degree of specialization appears to be close to optimal, in the sense that changes in characteristics that are associated with significant institutional turnover do not appear to cause large shifts in net demand.

Instititutional Trading and Characteristics: Institutional trading of the parent after the ex-date

Table 4 studies the cross-sectional determinants of trading volume of the parent around the ex-date of the spinoff. For this analysis, the sample is pared down slightly because we exclude parent firms that merge (or stop trading for other reasons) within a quarter of the ex-date. Baker, Coval, and Stein (2006) analyze changes in ownership around mergers and acquisitions. Consistent with our results here, they find that institutional ownership explains a large part of the trading activity, and stock returns, around the announcement of a merger.

Panel A shows that trading volume of the parent is larger when the parent firm is small, the parent and spinoff are in the same industry, the parent and the spinoff trade on the same exchange, and when the parent is in the S&P 500 stock index. Panel B shows that institutions that held the parent prior to the ex-date are more likely to retain their shares when the parent is large relative to the child. In part, this reflects the mechanical relation between the size of the pre-ex-date combined firm and the sizes of the post-ex-date spinoff and parent firms.

The table also shows that institutional investors are more likely to hold on to the parent firm when the parent is in the S&P 500 index. In the vast majority of cases, the event of a spinoff does not cause a change in index status for the parent.

To summarize, the results in Table 4 suggest that with the exception of firm size, there are few systematic patterns explaining institutional trading of the parent around the ex-date. To some extent, this should be obvious from the fact that the pre-ex-date combined firm is quite similar to the post-ex-date parent.

IV. Spinoff trading and ex-date stock returns

Table 5 summarizes returns around the ex-date of the spinoff. Panel A focuses on the spinoff firm, while Panel B focuses on the parent. We define the simple abnormal return for stock *i* on day *t*,

$$AR_{it} = R_{it} - R_{Mkt,t} \tag{3}$$

Where R_{it} denotes the return on stock *i* and R_{Mkt} is alternately the CRSP value or equal weighted portfolio return. Cumulative abnormal returns are the sum of abnormal returns over various intervals. The first columns of Panel A summarize these returns. Notably, average returns on the interval that starts on the ex-date and ends 10- or 20-days after the ex-date are negative. The panel shows that returns are -2.1 percent (CRSP VW adjusted), or -2.2 percent (CRSP EW adjusted) on the twenty day interval around the ex-date.

The table also displays some statistics on the longer-run performance of spinoffs. The negative abnormal returns experienced during the first 30-days are reversed in the subsequent 70-days. In the first 100-days, spinoffs experience positive abnormal returns between 2.6 and 3 percent, consistent with the long-run outperformance documented by Desai and Jain (1999). The table also shows that abnormal returns are similar if we adjust for size. In this case, abnormal returns are the difference between the raw return and the return on a value-weighted size-matched portfolio.

Panel B summarizes abnormal event returns for the parent firm. The average parent firm earns ex-date returns of 1.3 percent on the ex-date, but these are somewhat reversed in the following ten to twenty days. The table shows that prior to the ex-date, the parent outperforms both the CRSP value-weighted portfolio, as well as a value-weighted portfolio matched by size.

For some of the spinoffs, a "when-issued" market is set up by the exchange a few weeks before the distribution date. When-issued securities allow investors to trade their promised claims on the spinoff before the ex-date, settling their positions after the distribution of shares on the ex-date. While data on the returns of these securities are not available from CRSP, we can collect end-of-day transaction level pricing from the NYSE Trades and Quotes database for spinoffs with ex-dates after 1993. In unreported results, we find that average returns during the when-issued period are slightly negative (-0.75 %), but not

significant at the 10 percent level. Interestingly, most of this return accrues on the day before the ex-date, suggesting that institutions that do participate in the when-issued market only do so at the last moment. Since these returns are small, and unavailable for most of our sample, we leave them out of the main analysis. Including when-issued returns lowers average event returns to approximately -3 percent.

Stock returns and trading

We next relate the trading activity documented in Section III to the stock returns summarized above. Before doing formal analysis, we begin with some simple figures that foreshadow the main results. In Figure 4, we plot cumulative abnormal returns of the parent and spinoff, sorted by changes in net institutional demand.

Panel A shows these results for the child firm. We sort our sample of spinoffs into spinoffs that experience net changes . Our first sorting variable is $\Delta N/N_{-1}$, the change in the number of owners of the spinoff, as a fraction of the original number of owners of the parent firm. The Panel shows cumulative returns for low and high values of this variable. When $\Delta N/N_{-1}$, the change is low, the spinoff experiences abnormal returns of minus 7 percent, compared with abnormal returns of approximately zero for spinoffs where institutional ownership remains high. Interestingly, the long-run performance appears unrelated to the initial drop in prices, consistent with a permanently downward sloping demand curve. Panel B repeats this exercise with the sorting variable ΔH. The figure shows the same pattern- ex-date returns are significantly negative for spinoffs where institutions are net sellers, and approximately flat otherwise.

Panel C and Panel D repeat this exercise for the parent. Abnormal returns are positive on the ex-date for both groups. Following the ex-date, however, firms with significant net sales decline in price, while firms with net purchases tend to have positive abnormal returns. These patterns appear similar, whether the sorting variable is aggregate changes in institutional demand or simply changes in the number of institutional owners. Nonetheless, the results are clearly less pronounced than for the spinoff firm.

Trading, characteristics, and stock returns

Table 6 presents the formal tests linking returns, trading and characteristics. We first analyze the relationship between event returns and *realized* changes in institutional ownership.

$$AR_i = a + b\Delta H_i + u_i \tag{4}$$

Or between event returns and the percentage change in the number of institutional owners:

$$AR_i = a + b(\Delta N / N)_i + u_i \tag{5}$$

Abnormal returns are defined as size-adjusted cumulative returns starting on the ex-date and ending 5-days later.

Panel A shows a statistically significant positive correlation between event returns of the spinoff and the size of the demand shock, consistent with a downwards sloping aggregate demand curve. The inverse of the slope coefficient in equation (4), equal to 4.69, yields a price elasticity of demand of -4.69. We can compare this to elasticity measures computed in studies on S&P 500 additions. Our estimate of -4.69 falls between the price elasticity of demand of -8.24 for the median arbitrage risk stock in Wurgler and Zhuravskaya (2002), and an elasticity of approximately -1 in Shleifer (1986) and Harris and Gurel (1986). We reach a similar conclusion when we compute the ratio of the average change in institutional demand of -1.6 percent (Table 2) to average 5-day event returns of -0.929 percent, yielding an elasticity of -1.7, also within the range suggested by prior work.

The next columns of Panel A look at the relationship between event returns and predicted institutional demand around the ex-date. This is done as follows. In the first step, we predict institutional demand ΔH and $\Delta N/N$ by taking the fitted values from columns (5) and (6) in Table 3. That is, net demand is a function of size differences between the parent and child, industry differences, market-to-book ratios, etc. In the second step, we regress abnormal returns on predicted changes in institutional ownership:

$$AR_i = a + b\widehat{\Delta H}_i + u_i \tag{6}$$

and

$$AR_i = a + b(\widehat{\Delta N / N})_i + u_i \tag{7}$$

These results are shown in columns (3) and (4) of Table 6. Event returns are positively related to predicted changes in aggregate holdings ΔH, and to predicted changes in the number of owners $\Delta N/N$, with the latter strongly statistically significant. Interestingly, the slope coefficients on predicted institutional demand are similar to the slope coefficients on actual demand in columns (1) and (2). This lends some comfort to our claim that characteristics predict returns *because* they are associated with changes in demand.

The final step is to decompose predicted trading into its determinants and look at the relationship between those determinants and stock returns.

$$AR_i = a + bSize_{Parent} + cSize_{Child} + d(M/B)_{Parent} + e(M/B)_{Child} + f1_{DiffIndustry} + g1_{DiffExchange} + h1_{Merger} + iSP500 + u_i \quad (8)$$

Column (5) shows these results. Not surprisingly, the relative size of the parent and child firms, which were the strongest determinants of institutional trading, are also the strongest determinants of event returns. Event returns are higher when the parent market-to-book ratio is high or the child market-to-book ratio is low, when parent and child are in the *same* industry, the *same* exchange, or when prior institutional ownership is low.

Panel B presents the same analysis for the parent firm. We first look at the relationship between stock returns and institutional trading. Columns (1) and (2) show a strong relationship between these trading measures and parent ex-date returns. Although the statistical significance is slightly weaker, it is interesting that the estimates in Panel B generally imply less elastic demand curves (-1/0.607 ≈ -1.65) than in Panel A.

The remainder of Panel B looks at the relationship between predicted institutional demand and parent firm ex-date returns. Columns (3) and (4) show no significant relation between either measure of predicted institutional sales and ex-date returns. On the other hand, column (5) shows that the same characteristics that predict spinoff ex-date returns are generally associated with parent ex-date stock returns. That is, ex-date returns are higher when the parent is large relative to the child, when the parent market-to-book is high, and when prior institutional ownership is high. The other variables do not enter in

a meaningful way. These mixed findings could be the result of two explanations (1) low explanatory power in the first-stage regressions, and/or (2) some variables that predict institutional trading predict returns in the opposite direction.[9] But the main result to emerge from Panel B is that those same characteristics that significantly determined trading and returns for the child firm have substantially less explanatory power when applied to the parent. This is not surprising given that most parent firms are virtually the same size and remain in the same industry following the spinoff.

V. Fund flows and spinoff ex-date returns

Frazzini and Lamont (2006) show that stocks purchased by mutual funds that recently received disproportionate inflows subsequently underperform. They argue that fund inflows measure investor sentiment for individual stocks.

In this section, we ask whether stock-level inflows, which use as a proxy for stocks' popularity with retail investors, can predict net demand around the ex-date of the spinoff. While characteristics such as size, industry, and exchange may be related to turnover among institutions, they may be unable to capture time-series variation in institutional demand for particular attributes. Suppose, for example, that mutual funds specialized in a particular industry recently received large dollar inflows. It follows that on the ex-date of the spinoff in that industry, there is an expanded clientele for shares of stock, in dollar terms. Thus, the hypothesis is that prior industry-level inflows may help predict purchases beyond characteristics because they serve as proxies for the amount of capital associated with a given characteristic. A second question is whether spinoffs are motivated by these expected inflows in the first place. Firms can monetize the popularity of a particular industry by isolating a subsidiary as a separately traded entity.

[9] The evidence favors explanation (1), though there appears to be evidence supporting both possibilities. The first stage R-squared is only 3 percent in column (2) and 8 percent in column (3), compared with 11 percent and 55 percent in the corresponding regressions shown in Panel A. To find evidence for the second hypothesis, we estimate a multivariate regression of ex-date returns on *actual* and *predicted* institutional purchases. This regression yields positive coefficients on actual purchases, and negative coefficients on predicted purchases, consistent with explanation (2). However, the slope coefficient on predicted purchases is insignificant.

Constructing industry flow measures

We follow a methodology similar to Frazzini and Lamont (2006) and calculate abnormal stock-level inflows, which we then aggregate to the industry-level. The details are as follows.

For mutual fund *i* in quarter *t*, the dollar flow is as the difference between total net assets and the return adjusted total net assets from the previous period

$$\$Flow_{it} = TNA_{it} - (1 + R_{it})TNA_{it-1} \tag{8}$$

Where *$Flow* denotes the dollar flow, *TNA* denotes total net assets, and *R* is fund *i*'s total return in quarter *t*. The abnormal inflow into the fund is the dollar flow minus the counterfactual inflow that would have resulted if aggregate inflows into all mutual funds had been distributed according to the lagged total net assets of the funds.

$$Ab\$Flow_{it} = \$Flow_{it} - \frac{TNA_{it-1}}{\sum_{k} TNA_{kt-1}} \sum_{k} \$Flow_{kt} \tag{9}$$

Ab$Flow denotes the abnormal flow. The stock flow in period *t* is given by the sum of the product of mutual fund weightings with abnormal flows.

$$StockFlow_{jt} = \sum_{i} Ab\$Flow_{it} \cdot w_{ijt} \tag{10}$$

where the subscript *j* denotes the stock and w_{ijt} denotes the weight of stock *j* in mutual fund portfolio *i* in quarter *t*. For our baseline flow measure, we follow Frazzini and Lamont and aggregate quarterly flows to the 1-year and 3-year horizons.

In the final step, we aggregate stock flows at the industry-level, scaling by total industry market capitalization.

$$Industry\_Flow_{Industry,t} = \frac{\sum_{j \in Industry} Stockflow_{jt}}{\sum_{j \in Industry} MV_{jt}} \tag{11}$$

Industry definitions follow Fama and French (1997). In principle, one can aggregate flow measures around various characteristics (e.g., small versus large, low beta, high beta, etc.) but our sense is that the aggregation can only be as precise as the mandates of the mutual fund the flows are directed at. Therefore, we settle on industry. To get a sense of whether our procedure produces sensible estimates of industry popularity, we verify that "Telecommunications" and "Computers" receive the largest three-year inflows in 1999 (0.90 and 1.1 percent of shares outstanding, respectively), while "Mines," "Coal" and "Steel" receive the largest outflows (-9.7, -9.5, and -8.3 percent of shares outstanding, respectively). This is consistent with accounts of the 1998-1999 internet bubble in Ofek and Richardson (2003) and Lewellen (2003). We also find that industry market-to-book ratios are positively related to our flow measure, consistent with Frazzini and Lamont (2006).

We match industry-level flows to the industries of the parent firms and spinoff firms. Panel A of Table 7 summarizes the outcome of this matching. Parent firms are typically in industries that have experienced net outflows, but the same holds for the spinoff firm. The table shows that industries of the parent firms gain net inflows, relative to the industries of the spinoff firms, when inflows are measured on a one-year basis. When we extend the horizon to look at three-year inflows, the pattern reverses. Thus, there is no evidence that spinoffs are selected to be in industries that are temporarily popular with retail investors. Another important observation from Panel A is that industry-level inflows are small in magnitude. The first two lines of the Panel show an industry-one-year flow standard deviation between 1.4 and 2.2 percent. In contrast, small differences in size between the parent and spinoff firm can generate net demand shocks of several percentage points.

Empirical tests

We now test the hypothesis that industry-level mutual fund inflows are associated with net purchases of the spinoff firm, together with associated price increases. We estimate the cross-sectional regression of the change in ownership, ΔH, on the industry percentage inflow of the parent firm, the industry percentage inflow of the spinoff firm, and controls for size.

$$\Delta H_i = a + bSize_{Parent,i} + cSize_{Parent,i} + dSpinoffIndustryFlow_{it} + eParentIndustryFlow_{it} \quad (12)$$

Panel B of the table shows these results. Mutual fund inflows in the spinoff's industry are associated with net purchases; however, the effect is not significant. The same result holds whether net purchases are measured as a percentage of shares outstanding, or as the percentage change in the number of owners ($\Delta N/N$).

The third column of Panel B replaces the percentage change in ownership from equation (12) above with the 5-day ex-date abnormal return. The table shows that industry-level flows exert virtually no effect on the ex-date returns of the spinoff. As before, the relative size of the parent and spinoff firms is a significant determinant.

The last three columns of Panel B repeat the exercise for changes in the ownership of the parent firm. Parent industry inflows have no statistically significant effect on ownership changes around the ex-date. In summary, the data do not support the claim that inflow driven purchases exert a significant effect on the returns of corporate spinoffs, at least around the ex-date. One obvious reason for this is that inflows exert a fairly modest effect on total institutional ownership. But more broadly, these results suggest that fairly constant institutional preferences for size and other characteristics are more important determinants of trading than time-varying demand generated from retail inflows and outflows.

VI. Conclusions

We emphasize three main findings. First, net institutional sales are largely a function of the relative size of the parent and spinoff firm – the smaller is the spinoff relative to the parent, the more that institutions can be expected to sell. While differences in industry, changes in trading venue, and S&P 500 index membership of the parent are associated with institutional turnover, (that is, trading among institutions), they are less associated with net demand. Second, the spinoffs in our sample experience abnormal returns of approximately -2 percent in the 10-day window around the ex-date. The lower the returns, the higher the trading volume during the window, and the greater are the institutional sales of stock. Third, both actual and *predicted* institutional trading are correlated with the returns of the spinoff.

Fourth, the link between characteristics, institutional sales, and prices also applies, but to a lesser extent, in explaining the returns accruing to shareholders of the parent firm around the ex-date.

Perhaps our most important finding relates to the role of relative size in explaining institutional trading. Gompers and Metrick (2001) and Sosner and Kovtunenko (2003) argue that institutional preferences for large stocks may explain a large fraction of the size premium in expected stock returns. In our results, difference in ex-date returns among small and large capitalization spinoffs appears to be solely due to institutional preferences. The role of size in explaining spinoff returns is one potential reason spinoffs are not more common – especially spinoffs that are not preceded by an initial offering in a public market. When faced with the prospect of divesting a division to improve firm focus, managers must account for the possible discount they will face as a consequence of reduced institutional demand. Thus, small spinoffs, even if they are expected to exhibit operating efficiency gains, may be better off housed within the parent firm. On the other hand, the reverse effect may dominate: when institutional demand for the spinoff is expected to be favorable, there are incentives to execute a spinoff even when there are no efficiency gains.

References

Abarbanell, J., Bushee, B. and Raedy, J. 2003. Institutional investor preferences and price pressure: the case of corporate spin-offs. *Journal of Business* 76 (April) 233-262.

Ahn, S., and Denis, D.J. 2004. Internal capital markets and investment policy: evidence from corporate spinoffs. *Journal of Financial Economics* 71 (March) 489-516.

Andrade, G., Mitchell, M. and Stafford, E. 2001. New evidence and perspective on mergers. *Journal of economic perspectives* 15 (Spring) 103-120.

Badrinath, S., Gay, G. and Kale, J. 1989. Patterns of institutional investment, prudence, and the managerial safety-net hypothesis. *Journal of Risk and Insurance* 56 (December) 605-29.

Bagwell, L. S., 1992, Dutch auction repurchases: An analysis of shareholder heterogeneity. Journal of Finance 47, 71-105.

Baker, M., Coval, J. and Stein, J. 2006. Corporate financing decisions when investors take the path of least resistance, forthcoming *Journal of Financial Economics*.

Barberis, N. and Shleifer, A. 2003. Style investing. *Journal of Financial Economics* 63 (May) 161-199.

Bennett, J., Sias R., and Starks, L. 2000. Greener pastures and dynamic institutional preferences. Working paper, Austin: University of Texas.

Brown, K. and Brooke, B. 1993. Institutional demand and security price pressure: The case of corporate spin offs. *Financial Analysts Journal* 49 (September-October) 53-62.

Burch, T.R. and Nanda, V. 2003. Divisional diversity and the conglomerate discount: evidence from spinoffs. *Journal of Financial Economics* 70 (October) 69-98.

Bushee, B. 1998. The influence of institutional investors and myopic R&D investment behavior. *Accounting Review* 73 (July) 305-33.

Chan, K. and Lkonishok, J. 1993. Institutional trades and intraday stock price behavior. *Journal of Financial Economics* 33 (April) 173-89.

Coval, J. and Stafford, E. 2005. Asset Fire Sales (and Purchases) in Equity Markets. Working Paper, Boston: Harvard Business School.

Cusatis, P., Miles, J. and Woolridge, J. 1993. Restructuring through spin-offs: The stock market evidence, *Journal of Financial Economics* 33 (June) 293-311.

Dittmar, A. and Shivdasani, A. (2003). Divestitures and divisional investment policies. *Journal of Finance* (December) 2711-2743.

Del Guercio, D. 1996. The distorting effect of the prudent man law of institutional equity investments. *Journal of Financial Economics* 40 (January) 31-62.

Desai, Hemand, and Prem C Jain, 1999, Firm performance and focus: long-run stock market performance following spinoffs. *Journal of Financial Economics* 54, 75-101.

Falkenstein, E.1996. Preferences for stock characteristics as revealed by mutual fund portfolio holdings, *Journal of Finance* 51 (March): 111-35.

Ferreira, Miguel A. and Pedro M. 2006. The colors of investors' money: which firms attract institutional investors from around the world?, SSRN Working Paper http://papers.ssrn.com/sol3/papers.cfm?abstract_id=885777.

Gompers. P. and Metrick, A. 2001. Institutional investors and equity prices. *Quarterly Journal of Economics* 116 (February) 229-59.

Greenwood, R. 2005 Short and long-term demand curves for stocks: theory and evidence on the dynamics of arbitrage. *Journal of Financial Economics* 75 (March) 607-649.

Hair, J. Jr., Anderson, R., Tatham, R. and Clack, W. 1995. *Multivariate Data Analysis.* 4th ed. Englewood Cliffs, N.J.: Prentice Hall.

Harris, L. and Gurel, E. 1986. Price and volume effects associated with changes in the S&P list: New evidence for the existence of price pressure. *Journal of Finance* 41 (September): 815-29.

Kaul, A. Mehrotra, V. and Morck, R. 2000. Demand curves for stocks do slope down: New evidence from an index weights adjustment. *Journal of Finance* 55 (April): 893-912.

Krishnaswami, S. and Subreamaniam, V. 1999. Information asymmetric, valuation, and the corporate spin-off decision. *Journal of Financial Economics* 53 (July): 73-112.

Lakonishok, J. Shleifer, A., Thaler, R. and Vishny, R. 1991. Window dressing by pension fund managers, *American Economic Review* 81 (May): 227-31.

Lamont, Owen, and Andrea Frazzini, 2006, Dumb Money: Mutual fund flows and the cross-section of stock returns, Yale University working paper.

Lang, M. and McNichols, M. 1997. Institutional trading and corporate performance. Working paper. Stanford, Calif.: Stanford University.

Lev, B. 1991. Identifying the preferences of institutional investors and implementing a strategy for change. Working paper. Berkeley: University of California.

Lynch, A and Mendenhall, R. 1997. New evidence on stock price effects associated with changes in the S&P 500 index. *Journal of Business* 70 (July): 351-83.

Nagel, S. 2005. Trading styles and trading volume. Working paper. Stanford: Stanford University, Graduate School of Business.

Ofek, E. and Richardson, M. 2000. The IPO look-up period: Implications for market efficiency and downward sloping demand curves. Working paper. New York: New York University.

Pollet, Joshua, and Mungo Wilson, 2006, How Does Size Affect Mutual Fund Behavior, working paper.

Shleifer, A. 1986. Do demand curves for stocks slope down? *Journal of Finance* 41 (July) 579-90.

Vijh, A. 1994. The spin-off and merger ex-date effects. *Journal of Finance* 49 (June) 581-609.

Wurgler, J. and Zhuravskaya, E. 2002. Does arbitrage flatten demand curves for stocks? *Journal of Business* 75 (October) 583-608.

Figure 1
Event time

On the ex-date, *k* shares of the spinoff are distributed to ex-date holders of 1 share of the parent, where *k* denotes the exchange ratio. Following the ex-date, investors may trade the spinoff and parent firms separately. Event time is measured in quarters before or after the ex-date. The last quarter-end before the ex-date is denoted -1Q. The first quarter-end after the ex-date is denoted +1Q. In circumstances where the ex-date falls on a quarter end, we skip a quarter and denote the following quarters as +1Q.

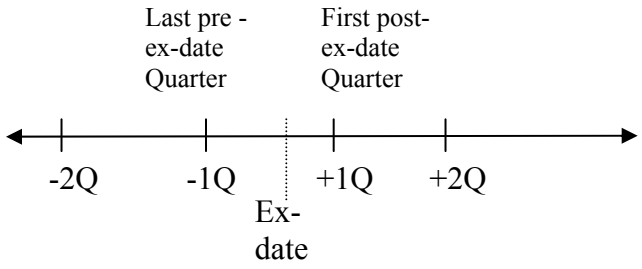
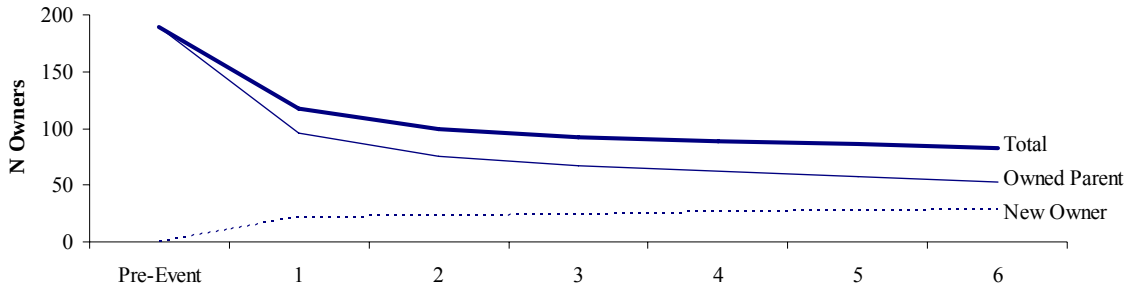


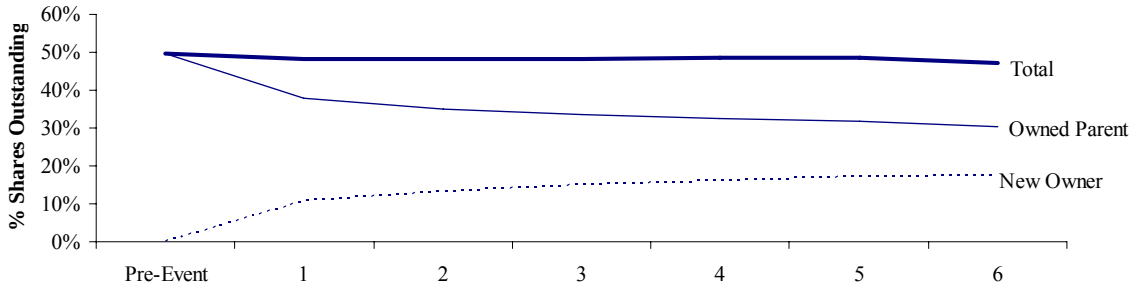
Figure 2
Institutional Ownership around corporate spinoffs

Aggregated institutional and mutual fund ownership, in event time. Event time is measured in quarters before or after the ex-date. Instititutional ownership and mutual fund ownership are from Thomson Financial. Panel A plots the number of institutional owners. The total is broken down into institutions that did not own the parent, but purchase the child after the ex-date (dashed), and institutions that own the parent before the spinoff but do not sell all of their shares (solid). The sum of these two series yields the total number institutions (thick solid). In Panel B, institutional ownership is expressed as a percentage of shares outstanding. Panel C and Panel D show the corresponding figures for mutual fund ownership.

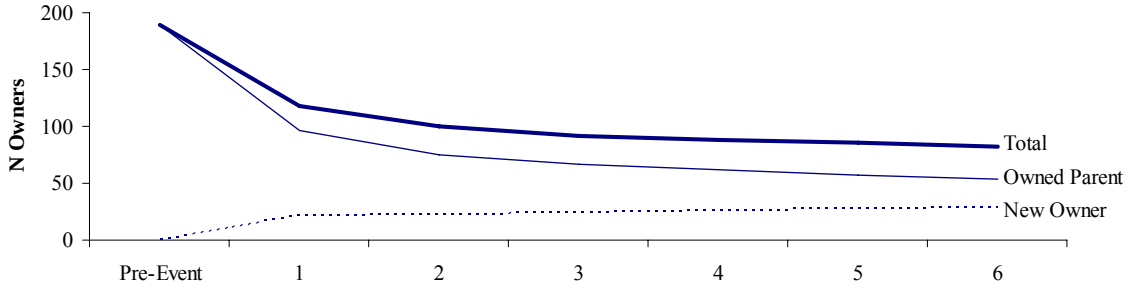
Panel A. Number of institutional owners



Panel B. Institutional ownership as a percentage of shares outstanding



Panel C. Number of mutual fund owners



Panel D. Mutual fund ownership as a percentage of shares outstanding

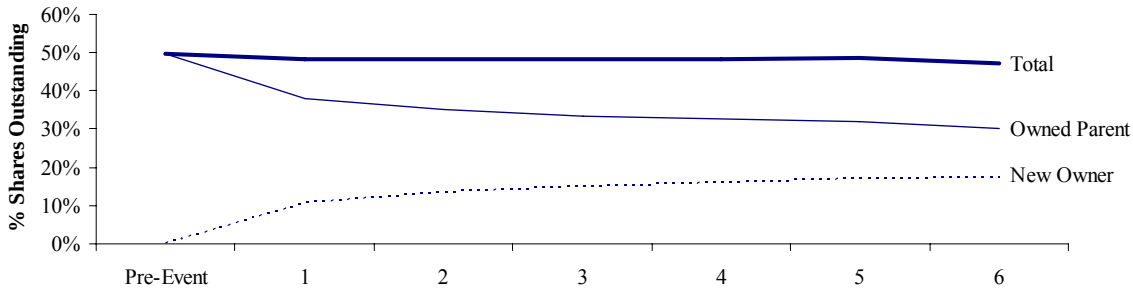
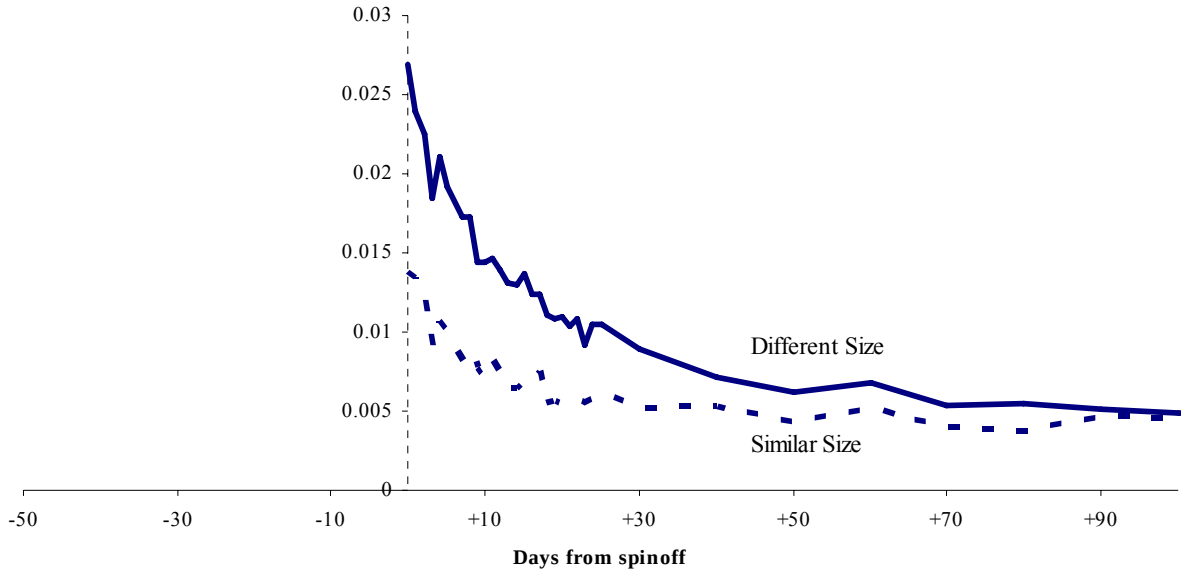


Figure 3
Trading volume around corporate spinoffs

Event time average turnover of corporate spinoffs. Panel A shows turnover for the child firm sorted by the size similarity of the parent and child firms. Parent and child are defined to be of similar size if their NYSE size deciles do not differ by more than 2. Panel B shows turnover for the parent firm sorted by the size similarity of the parent and child.

Panel A. Turnover of spinoff



Panel B. Turnover of parent

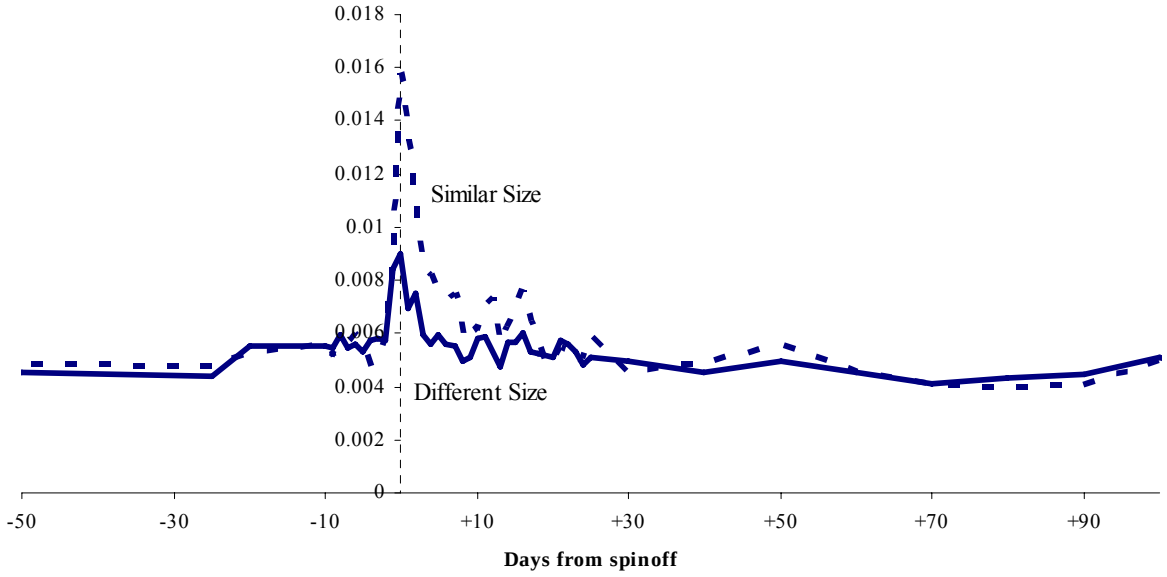
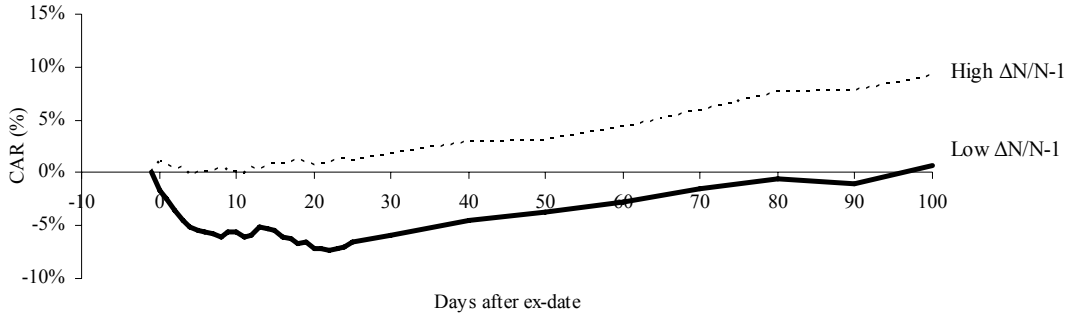


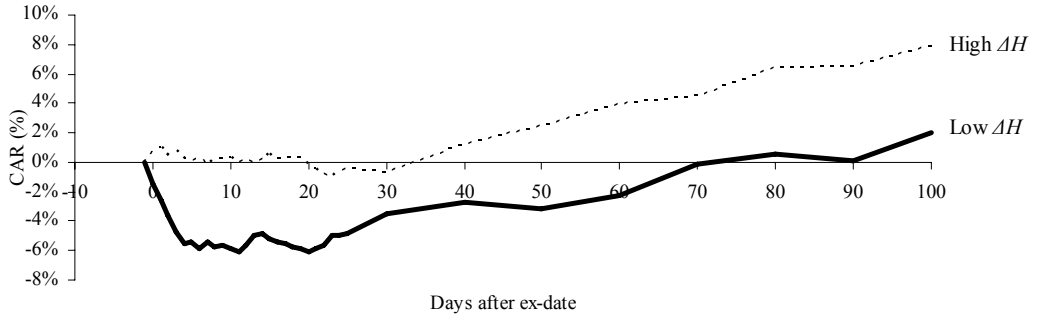
Figure 4
Institutional purchases and ex-date stock returns

Event time cumulative abnormal returns to corporate spinoffs. The abnormal return is the difference between the stock return and the return on the CRSP value weighted portfolio. The sample is sorted into two groups according to $\Delta N/N_{-1}$, the percentage change in the number of owners, or ΔH, the change in total institutional holdings. Panels A and B show returns of the spinoff, sorted by either of these measures. Panels C and D show returns of the parent firm. In each figure, event-time is measured in trading days relative to the ex-date.

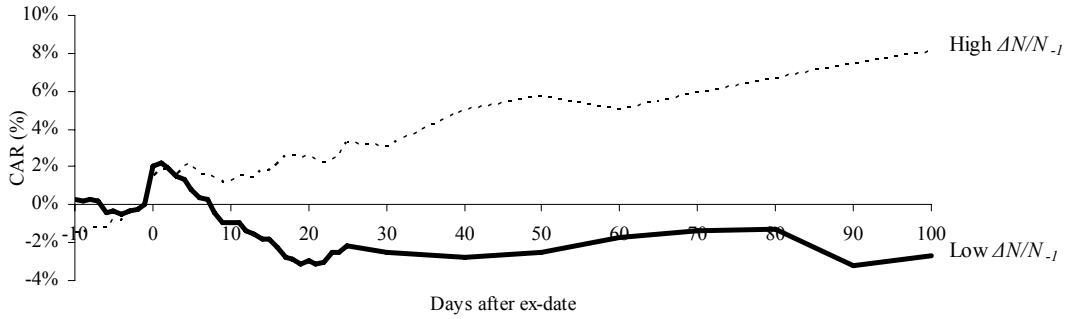
Panel A. Spinoff CARs sorted by $\Delta N/N_{-1}$



Panel B. Spinoff CARs sorted by ΔH



Panel C. Parent CARs sorted by $\Delta N/N_{-1}$



Panel D. Parent CARs sorted by ΔH

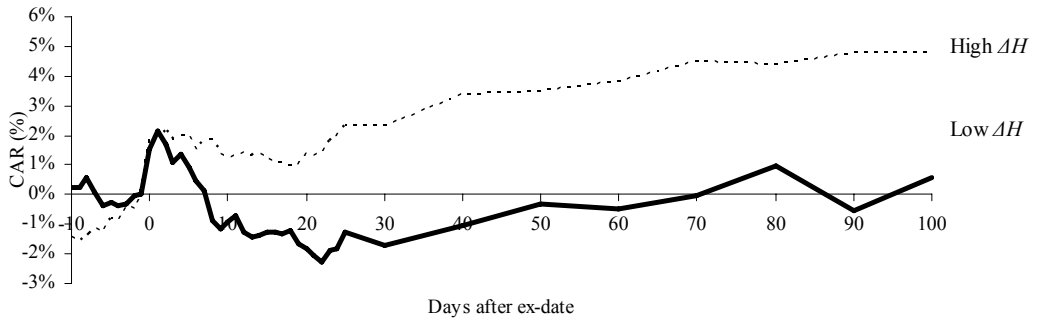


Table 1
Summary Statistics: Corporate Spinoffs 1980-2004

Panel A shows mean, median, standard deviation, and extreme values of descriptive variables. Parent market capitalization is measured one day prior to the spinoff ex-date. Child market capitalization is measured on the first day after the spinoff takes effect. *Related to merger* takes a value of 1 if the spinoff occurred simultaneously, or because of, a merger of the parent firm. Industries are measured following Fama and French (1997) 48 industry classifications. The exchange ratio measures the number of child shares distributed for each share of the parent. *Parent in S&P 500* takes a value of one if the parent is a member of the S&P 500 index. Market-to-book ratios are calculated for each firm in the industry year and industry-matched averages are assigned to parent and child. Market-to-book ratios is given by Compustat variables ([item 199 x item 25 + item 6 - item 60 - item 74]/item 6). The final rows list the number of institutional owners and the number of mutual fund holders of the parent, on the last report date prior to the spinoff. Panel B shows the time series breakdown of events.

Panel A: Breakdown by year (N=337)

1980	6	1990	6	2000	18
1981	1	1991	8	2001	15
1982	4	1992	14	2002	9
1983	12	1993	19	2003	5
1984	8	1994	16	2004	9
1985	10	1995	27		
1986	12	1996	32		
1987	13	1997	30		
1988	13	1998	24		
1989	8	1999	18		

Panel B: Descriptive Information

	Mean	**Median**	**SD**	**Min**	**Max**
Log(Parent MV)	7.31	7.32	1.80	3.62	12.25
Log(Spinoff MV)	5.64	5.40	1.62	1.94	10.62
Parent NYSE size decile	6.77	8.00	2.81	1.00	10.00
Spinoff NYSE size decile	3.96	3.00	2.73	1.00	10.00
Related to merger/regulation	0.18	0.00	0.38	0.00	1.00
Different Fama French industry	0.56	1.00	0.50	0.00	1.00
Exchange Ratio	0.51	0.33	0.41	0.01	3.00
Parent in S&P 500? (Yes=1)	0.40	0.00	0.49	0.00	1.00
Parent NYSE	0.77	1.00	0.42	0.00	1.00
Child NYSE	0.57	1.00	0.50	0.00	1.00
Different exchange	0.23	0.00	0.42	0.00	1.00
Parent industry Market-to-Book ratio	2.13	1.97	0.69	0.90	4.75
Child industry Market-to-Book ratio	2.11	1.92	0.70	0.90	4.75

Table 2
Institutional Trading around corporate spinoffs

Event time averages of institutional and mutual fund ownership around the ex-date of corporate spinoffs. Event-time is measured in the number of quarters before or after the ex-date. *N* denotes the number of owners, *H* denotes their total ownership as a fraction of shares outstanding. In all cases, ownership is compared with the number of owners, or the total ownership, of the parent at the end of the quarter prior to the ex-date (in the column -1Q). Panel A summarizes total institutional ownership for the parent and spinoff firms, measured using reported holdings from 13F statements. Panel B summarizes mutual fund ownership, following the same definitions.

		-1Q	+1Q	+2Q	+3Q	+4Q	+5Q
Panel A: All Institutional 13F Holders							
Spinoff firm							
(1) Default spinoff holders:	*N*	209	106	83	73	68	64
	H	0.528	0.402	0.375	0.359	0.349	0.343
(2) New holders	*N*	0	23	24	26	28	30
	H	0.000	0.111	0.140	0.156	0.166	0.178
(3) Total	*N*	209	129	109	101	97	94
	H	0.528	0.512	0.514	0.514	0.514	0.519
Parent firm:							
(4) Default spinoff holders:	*N*	209	163	151	137	128	118
	H	0.528	0.489	0.471	0.455	0.440	0.426
(5) New holders	*N*	0	22	30	43	43	48
	H	0.000	0.031	0.060	0.080	0.097	0.115
(6) Total	*H*	209	185	181	180	171	166
	H	0.528	0.520	0.531	0.535	0.537	0.541
Panel B: Mutual Funds							
Spinoff firm							
(7) Default spinoff holders:	*N*	191	90	41	34	29	24
	H	0.134	0.084	0.063	0.057	0.052	0.047
(8) New holders	*N*	0	77	47	45	46	41
	H	0.000	0.059	0.069	0.078	0.082	0.076
(9) Total	*N*	191	167	91	80	76	66
	H	0.134	0.141	0.128	0.133	0.130	0.120
Parent firm:							
(10) Default spinoff holders:	*N*	191	121	94	84	78	64
	H	0.134	0.109	0.092	0.086	0.079	0.071
(11) New holders	*N*	0	45	71	82	81	86
	H	0.000	0.020	0.037	0.046	0.051	0.061
(12) Total	*N*	191	166	165	167	159	151
	H	0.134	0.128	0.128	0.131	0.130	0.132

Table 3
Determinants of trading around corporate spinoffs

OLS regressions of ownership changes of corporate spinoffs in the quarter following the ex-date.

$$\Delta H_i = a + bSize_{Parent} + cSize_{Child} + d(M/B)_{Parent} + e(M/B)_{Child} + f1_{DiffIndustry} + g1_{DiffExchange} + h1_{Merger} + iSP500 + u_i$$

The independent variables include the NYSE size decile of the parent, the size decile of the child, a dummy variable indicating whether the child is initially traded on the same exchange as the parent, a dummy variable indicating whether the child is in the same Fama-French (1997) industry as the parent, a dummy variable indicating whether the spinoff was merger related or mandated by a regulator, and a dummy variable for whether the parent firm was in the S&P 500 index prior to the ex-date of the spinoff. In Panel A, the dependent variables are alternately 5- or 10-day turnover. In Panel B, the dependent variables are based on holdings data reported in quarterly 13F statements. They include (1) the change in total institutional ownership expressed as a percentage of shares outstanding, (2) the change in the number of shareholders scaled by the number of shareholders of the parent in the previous quarter, (3) the change in total ownership by institutions that owned the parent in the previous quarter, the change in the number of shareholders, conditioning on being a shareholder of the parent in the previous quarter (5), the net increase in ownership by institutions that did not own the parent at the end of the previous quarter (6), the number of institutions that own the spinoff at the end of the quarter that did not own the parent at the end of the previous quarter. Robust standard errors are in parentheses. *,**, and *** denote significance at the 10, 5, and 1 percent levels.

Panel A. Turnover

	5-day CRSP Turnover	10-day CRSP Turnover
	(1)	(2)
Constant	-0.061	-0.080
	(0.023)**	(0.036)**
Parent Size	0.018	0.031
	(0.003)***	(0.004)***
Child Size	-0.016	-0.031
	(0.002)***	(0.004)***
Parent M/B	0.021	0.033
	(0.009)**	(0.014)**
Child M/B	0.020	0.028
	(0.009)**	(0.014)**
Different Industry	0.005	0.014
	(0.010)	(0.015)
Different Exchange	0.006	0.014
	(0.013)	(0.020)
Merger-related	-0.008	-0.006
	(0.012)	(0.019)
SP500	0.010	0.030
	(0.012)	(0.019)

(continued overleaf)

(Table 3 continued)

Panel B. Institutional Ownership

	Institutions that owned the parent in the quarter prior to spinoff		New Owners		Aggregate Holdings All owners	
	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.044	0.777	0.031	0.262	-0.021	1.042
	(0.028)	(0.032)***	(0.024)	(0.031)***	(0.031)	(0.049)***
Parent Size	-0.016	-0.058	0.016	-0.023	0.000	-0.079
	(0.003)***	(0.004)***	(0.003)***	(0.003)***	(0.003)	(0.006)***
Child Size	0.020	0.053	-0.011	0.022	0.009	0.075
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.005)***
Parent M/B	0.011	0.014	-0.013	0.011	-0.001	0.023
	(0.011)	(0.012)	(0.009)	(0.012)	(0.012)	(0.019)
Child M/B	-0.036	-0.025	0.029	-0.018	-0.004	-0.044
	(0.011)***	(0.012)**	(0.009)***	(0.012)	(0.012)	(0.019)**
Different Industry	0.003	-0.016	-0.008	-0.010	-0.006	-0.028
	(0.012)	(0.014)	(0.010)	(0.013)	(0.013)	(0.021)
Different Exchange	0.009	-0.006	-0.021	0.005	-0.013	0.001
	(0.015)	(0.017)	(0.013)	(0.017)	(0.017)	(0.027)
Merger-related	-0.005	0.025	-0.018	0.003	-0.027	0.026
	(0.014)	(0.017)	(0.013)	(0.016)	(0.016)*	(0.026)
SP500	-0.001	-0.024	-0.019	-0.058	-0.022	-0.085
	(0.015)	(0.017)	(0.013)	(0.016)***	(0.016)	(0.026)***

Panel C. Mutual Fund Ownership

	Institutions that owned the parent in the quarter prior to spinoff		New Owners		Aggregate Holdings All owners	
	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.008	0.747	0.016	0.421	0.004	1.167
	(0.020)	(0.045)***	(0.014)	(0.077)***	(0.022)	(0.094)***
Parent Size	-0.011	-0.050	0.007	-0.024	-0.004	-0.072
	(0.002)***	(0.005)***	(0.002)***	(0.009)***	(0.003)	(0.011)***
Child Size	0.010	0.036	-0.002	0.052	0.008	0.088
	(0.002)***	(0.005)***	(0.001)	(0.008)***	(0.002)***	(0.010)***
Parent M/B	-0.011	-0.015	0.000	-0.027	-0.011	-0.042
	(0.007)	(0.017)	(0.005)	(0.029)	(0.008)	(0.035)
Child M/B	0.005	0.007	0.006	0.015	0.011	0.020
	(0.007)	(0.017)	(0.005)	(0.029)	(0.008)	(0.035)
Different Industry	-0.021	-0.024	-0.008	-0.052	-0.030	-0.079
	(0.008)**	(0.019)	(0.006)	(0.033)	(0.009)***	(0.040)**
Different Exchange	0.034	-0.015	-0.008	0.039	0.024	0.029
	(0.011)***	(0.024)	(0.007)	(0.041)	(0.012)**	(0.051)
Merger-related	0.004	-0.002	-0.014	-0.027	-0.013	-0.030
	(0.010)	(0.023)	(0.007)**	(0.039)	(0.011)	(0.048)
SP500	0.029	-0.003	-0.008	-0.010	0.024	-0.017
	(0.010)***	(0.023)	(0.007)	(0.040)	(0.012)**	(0.049)

Table 4
Determinants of trading of parent firm around corporate spinoffs

OLS regressions of ownership changes of corporate spinoff parent firms in the quarter following the ex-date.

$$\Delta H_i = a + bSize_{Parent} + cSize_{Child} + d(M/B)_{Parent} + e(M/B)_{Child} + f1_{DiffIndustry} + g1_{DiffExchange} + h1_{Merger} + iSP500 + u_i$$

The independent variables include the NYSE size decile of the parent, the size decile of the child, a dummy variable indicating whether the child is initially traded on the same exchange as the parent, a dummy variable indicating whether the child is in the same Fama-French (1997) industry as the parent, a dummy variable indicating whether the spinoff was merger related or mandated by a regulator, and a dummy variable for whether the parent firm was in the S&P 500 index prior to the ex-date of the spinoff. In Panel A, the dependent variables are alternately 5- or 10-day turnover. In Panel B, the dependent variables are based on holdings data reported in quarterly 13F statements. They include (1) the change in total institutional ownership expressed as a percentage of shares outstanding, (2) the change in the number of shareholders scaled by the number of shareholders of the parent in the previous quarter, (3) the change in total ownership by institutions that owned the parent in the previous quarter, the change in the number of shareholders, conditioning on being a shareholder of the parent in the previous quarter (5), the net increase in ownership by institutions that did not own the parent at the end of the previous quarter (6), the number of institutions that own the spinoff at the end of the quarter that did not own the parent at the end of the previous quarter. Robust standard errors are in parentheses. *,**, and *** denote significance at the 10, 5, and 1 percent levels.

Panel A. Turnover of Parent firm

	5-day CRSP Turnover	10-day CRSP Turnover
	(1)	(2)
Constant	0.053	0.083
	(0.014)***	(0.022)***
Parent Size	-0.005	-0.006
	(0.002)***	(0.002)***
Child Size	0.002	0.002
	(0.002)	(0.002)
Parent M/B	0.006	0.011
	(0.005)	(0.008)
Child M/B	0.007	0.008
	(0.006)	(0.009)
Different Industry	-0.011	-0.018
	(0.006)*	(0.009)*
Different Exchange	-0.016	-0.029
	(0.007)**	(0.011)**
SP500	0	-0.002
	(0.007)	(0.011)

(continued overleaf)

(Table 4 continued)

Panel B. Institutional Ownership of parent firm

	Institutions that owned the parent in the quarter prior to spinoff		New Owners		Aggregate Holdings All owners	
	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.028	0.781	0.053	0.158	0.023	0.939
	(0.019)	(0.030)***	(0.014)***	(0.023)***	(0.019)	(0.040)***
Parent Size	0.001	0.008	-0.001	-0.002	0	0.005
	(0.002)	(0.003)**	(0.001)	(0.003)	(0.002)	(0.004)
Child Size	0	-0.011	0	-0.004	0	-0.015
	(0.002)	(0.003)***	(0.001)	(0.003)	(0.002)	(0.004)***
Parent M/B	-0.007	-0.012	-0.003	-0.003	-0.011	-0.015
	(0.007)	(0.011)	(0.005)	(0.009)	(0.007)	(0.015)
Child M/B	-0.001	0.011	0.002	0.005	0	0.016
	(0.008)	(0.012)	(0.005)	(0.009)	(0.008)	(0.016)
Different Industry	0.008	0.031	-0.009	-0.005	0.001	0.026
	(0.008)	(0.013)**	(0.006)	(0.010)	(0.008)	(0.017)
Different Exchange	-0.001	0.011	-0.005	0.001	-0.005	0.012
	(0.010)	(0.016)	(0.007)	(0.012)	(0.010)	(0.021)
SP500	0.005	0.054	-0.008	-0.023	-0.004	0.031
	(0.010)	(0.016)***	(0.007)	(0.012)*	(0.010)	(0.021)

Panel C. Mutual Fund Ownership

	Institutions that owned the parent in the quarter prior to spinoff		New Owners		Aggregate Holdings All owners	
	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$	ΔH	$\Delta N/N_{-1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.007	0.797	0.013	0.204	0.02	1.001
	(0.020)	(0.047)***	(0.007)*	(0.046)***	(0.020)	(0.066)***
Parent Size	-0.007	-0.007	0	-0.001	-0.007	-0.007
	(0.002)***	(0.005)	(0.001)	(0.005)	(0.002)***	(0.007)
Child Size	0.005	-0.012	0.001	0.004	0.007	-0.009
	(0.002)**	(0.005)**	(0.001)*	(0.005)	(0.002)***	(0.007)
Parent M/B	-0.017	-0.043	0.003	0.005	-0.013	-0.038
	(0.007)**	(0.018)**	(0.003)	(0.017)	(0.008)*	(0.025)
Child M/B	0.008	0.017	0.001	0.011	0.009	0.028
	(0.008)	(0.019)	(0.003)	(0.018)	(0.008)	(0.027)
Different Industry	-0.014	0.015	-0.007	-0.035	-0.021	-0.02
	(0.008)	(0.020)	(0.003)**	(0.020)*	(0.009)**	(0.029)
Different Exchange	0.024	-0.011	-0.002	0.005	0.022	-0.006
	(0.010)**	(0.025)	(0.004)	(0.024)	(0.011)**	(0.035)
SP500	0.025	0.057	-0.003	0.049	0.022	0.106
	(0.010)**	(0.025)**	(0.004)	(0.024)**	(0.011)**	(0.035)***

Table 5
Pre- and Post-spinoff abnormal returns

The abnormal return is the raw return minus the return on the control portfolio, which is alternately by the CRSP value-weighted index, the CRSP equal-weighted index, or the value-weighted size-matched portfolio. Panel A shows cumulative abnormal returns (CARs) for the spinoff firm, where t=0 is defined as the ex-date. Panel B shows the corresponding results for the parent firm. Panel B also shows some statistics for cumulative returns in pre-event periods. Robust standard errors are in parentheses. *,**, and *** denote significance at the 10, 5, and 1 percent levels.

Panel A: Spinoff						
	CRSP VW Adjusted		CRSP EW Adjusted		Size Matched Adjusted	
Interval	CAR (%)	SE	CAR (%)	SE	CAR (%)	SE
[0]	-0.608	(0.537)	-0.798	(0.537)	-0.798	(0.537)
[0,1]	-0.559	(0.535)	-0.750	(0.535)	-0.750	(0.535)
[0,2]	-0.559	(0.535)*	-0.750	(0.535)*	-0.750	(0.535)*
[0,3]	0.220	(0.232)**	0.253	(0.230)**	0.289	(0.231)**
[0,4]	-0.215	(0.442)***	-0.217	(0.440)***	-0.163	(0.442)***
[0,5]	-0.959	(0.546)***	-1.022	(0.542)***	-0.929	(0.544)***
[0,10]	-1.388	(0.608)***	-1.495	(0.605)***	-1.329	(0.606)***
[0,20]	-2.107	(0.639)**	-2.224	(0.643)***	-2.035	(0.646)**
[0,30]	-2.135	(0.698)	-2.315	(0.698)***	-2.076	(0.702)**
[0,40]	-2.203	(0.833)	-2.622	(0.828)*	-2.155	(0.829)
[0,50]	-2.508	(0.994)	-3.498	(0.976)	-2.418	(0.978)
[0,60]	-1.601	(1.060)	-2.951	(1.031)	-1.364	(1.032)
[0,70]	-0.253	(1.171)	-1.927	(1.140)	-0.019	(1.139)**
[0,80]	0.135	(1.260)	-1.767	(1.220)	0.487	(1.233)***
[0,90]	1.319	(1.387)	-0.880	(1.340)	1.702	(1.356)**
[0,100]	2.618	(1.482)	0.009	(1.445)	2.983	(1.451)***
Panel B: Parent firm						
	CRSP VW Adjusted		CRSP EW Adjusted		Size Matched Adjusted	
Interval	CAR (%)	SE	CAR (%)	SE	CAR (%)	SE
[-250,-1]	5.872	(1.964)***	-4.990	(1.926)**	5.900	(1.912)***
[-100,-1]	4.086	(1.251)***	0.497	(1.206)	4.076	(1.211)***
[-50,-1]	2.862	(0.881)***	0.948	(0.853)	2.756	(0.852)***
[0]	1.342	(0.290)***	1.390	(0.291)***	1.374	(0.291)***
[0,1]	1.640	(0.407)***	1.651	(0.409)***	1.682	(0.409)***
[0,2]	1.517	(0.440)***	1.466	(0.441)***	1.566	(0.439)***
[0,3]	1.159	(0.467)**	1.051	(0.465)**	1.224	(0.466)***
[0,4]	1.296	(0.494)***	1.184	(0.491)**	1.363	(0.492)***
[0,5]	1.105	(0.541)**	0.944	(0.536)*	1.171	(0.540)**
[0,10]	0.150	(0.656)	-0.257	(0.648)	0.203	(0.653)
[0,20]	-0.353	(0.917)	-1.270	(0.905)	-0.367	(0.910)
[0,30]	-0.343	(1.018)	-1.599	(1.005)	-0.345	(1.016)
[0,40]	0.255	(1.167)	-1.292	(1.153)	0.256	(1.180)
[0,50]	0.636	(1.212)	-1.134	(1.183)	0.497	(1.220)
[0,60]	0.667	(1.319)	-1.377	(1.280)	0.526	(1.323)
[0,70]	1.364	(1.380)	-1.071	(1.339)	1.245	(1.379)
[0,80]	1.889	(1.465)	-0.869	(1.435)	1.713	(1.472)
[0,90]	1.500	(1.663)	-1.615	(1.611)	1.238	(1.676)
[0,100]	2.490	(1.694)	-1.191	(1.656)	2.262	(1.703)

Table 6
Predicting spinoff ex-date returns with characteristics

OLS regressions of abnormal event returns around the ex-date of corporate spinoffs on changes in ownership, predicted changes in ownership, and spinoff characteristics:

$$AR_i = a + bSize_{Parent} + cSize_{Child} + d(M/B)_{Parent} + e(M/B)_{Child} + f1_{DiffIndustry} + g1_{DiffExchange} + h1_{Merger} + iSP500 + u_i$$

In Panel A, the dependent variable is the 5-day cumulative abnormal return to the spinoff firm around the ex-date, where daily abnormal returns are computed net of a size matched portfolio. In Panel B, the dependent variable is the 5-day cumulative abnormal return to the parent firm over the same period. The independent variables include the NYSE size decile of the parent, the size decile of the child, a dummy variable indicating whether the child is initially traded on the same exchange as the parent, a dummy variable indicating whether the child is in the same Fama-French (1997) industry as the parent, a dummy variable indicating whether the spinoff was merger related or mandated by a regulator, a dummy variable for whether the parent firm was in the S&P 500 index prior to the ex-date of the spinoff, and total institutional ownership at the end of the quarter before the ex-date. Robust standard errors are in parentheses. *,**, and *** denote significance at the 10, 5, and 1 percent levels.

	Panel A: Spinoff ex-date returns					Panel B: Parent ex-date returns				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Constant	-0.023	-0.09	-0.025	-0.139	0.037	0.066	-0.457	0.072	1.049	0.069
	(0.008)***	(0.023)***	(0.009)***	(0.032)***	(0.034)	(0.023)***	(0.162)***	(0.024)***	(0.613)*	(0.091)
ΔH	0.213					0.607				
	(0.070)***					(0.367)*				
$\Delta N/N$		0.090					0.550			
		(0.031)***					(0.168)***			
$\widehat{\Delta H}$			0.093					-3.846		
			(0.228)					(2.803)		
$\widehat{\Delta N / N_{-1}}$				0.161					-1.033	
				(0.042)***					(0.637)	
Parent Size Decile					-0.014					-0.033
					(0.005)***					(0.012)***
Child Size Decile					0.009					0.028
					(0.004)**					(0.012)**
Parent M/B					0.031					0.047
					(0.016)**					(0.045)
Child M/B					-0.019					-0.066
					(0.015)					(0.042)
Different Industry					-0.009					0.041
					(0.017)					(0.048)
Different Exchange					-0.004					-0.046
					(0.022)					(0.059)
Merger related					0.025					N/A
					(0.021)					N/A
Parent S&P 500					-0.011					-0.005
					(0.021)					(0.059)

Table 7
Fund flows and ex-date returns

Panel A summarizes 1-year and 3-year industry mutual fund inflow for the parent and spinoff industries, expressed as a percentage of shares outstanding. Panel B shows results of OLS regressions of changes in ownership on parent size decile, spinoff size decile, and parent and spinoff industry flow

$$\Delta H_i = a + bSize_{Parent,i} + cSize_{Parent,i} + dSpinoffIndustryFlow_{it} + eParentIndustryFlow_{it}$$

The dependent variable is alternately the total change in institutional ownership, as a percentage of shares outstanding, the percentage change in the number of institutional owners, or the 5-day cumulative abnormal return around the ex-date. Results are shown separately for the spinoff and parent firms. Robust standard errors are in parentheses. *,**, and *** denote significance at the 10, 5, and 1 percent levels.

Panel A. Summary Statistics

	Mean	**Median**	**SD**	**Min**	**Max**
Spinoff industry 1-year mutual fund inflow (%)	-1.14	-0.70	2.17	-23.48	2.93
Parent industry 1-year mutual fund inflow (%)	-0.91	-0.63	1.43	-9.98	2.53
Difference (Spinoff minus Parent)	-0.22				
P-value	[0.047]				
Spinoff industry 3-year mutual fund inflow (%)	-1.32	-1.14	2.59	-13.14	6.30
Parent industry 3-year mutual fund inflow (%)	-1.56	-1.27	3.04	-32.96	6.30
Difference (Spinoff minus Parent)	0.24				
P-value	[0.109]				

Panel B. Fund flows, net fund demand, and ex-date returns

	Spinoff firm			Parent firm		
	ΔH	*ΔN/N₋₁*	*Ex-date R*	*ΔH*	*ΔN/N₋₁*	*Ex-date R*
Parent Size Decile	0.000	-0.073	-0.010	-0.004	0.003	-0.001
	(0.002)	(0.009)***	(0.003)***	(0.002)*	(0.007)	(0.003)
Child Size Decile	0.006	0.085	0.007	0.005	-0.006	0.005
	(0.002)***	(0.009)***	(0.003)**	(0.002)***	(0.007)	(0.003)*
Child Industry Flow (1 yr)	0.246	0.142	-0.002	0.043	-0.816	0.257
	(0.233)	(0.963)	(0.339)	(0.201)	(0.662)	(0.294)
Parent Industry Flow (1 yr)	-0.222	0.413	-0.241	-0.170	-0.639	-0.029
	(0.355)	(1.465)	(0.515)	(0.309)	(1.017)	(0.453)