Earnings Management and Corporate Spin-offs

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Abstract

In this paper we examine whether managers aggressively manage earnings around corporate spinoffs. Using a sample of 226 completed spinoffs between 1985 and 2005, we find strong evidence of pre-spinoff earnings management among parent firms involved in non-focus-increasing spinoffs. We also find parent firms that have a lower level of operating performance or a higher level of information asymmetry are more likely to manage earnings prior to spinoff announcements. In addition, regression results show a significant negative (positive) relation between abnormal accruals and announcement period returns for non-focus (focus-increasing) spinoffs. The evidence suggests that abnormal accruals send out negative (positive) signals about the motives and future earnings of non-focus-increasing (focus-increasing) spinoffs.

1 Introduction

Corporate spinoffs have become relatively common since the 1980s. Despite the extant literature shows that investors in general respond positively to spinoff announcements (Hite and Owers 1983; Miles and Rosenfeld 1983; Schipper and Smith 1983; Daley et al. 1997; Desai et al. 1999), a considerable number of spinoffs have actually met with non-positive market responses. For example, 32%, 32%, and 30% of the spinoffs have negative announcement period returns in Schipper and Smith (1983), Krishnaswami and Subramaniam (1999), and Desai et al. (1999), respectively. The sample periods in these three studies are between 1963 and 1981, 1979 and 1993, and 1975 and 1991. Existing theories in the literature overwhelmingly suggest that spinoffs are value-increasing transactions; it is puzzling to observe consistently over different sample periods that so many spinoffs are associated with non-positive market responses. An exploration of the underlying reason is important because spinoffs have become one of the most important mechanisms in divesting corporate assets in recent years. In the 1980s, the total value of assets divested through spinoffs was $33 billion; in the 10-year period between 2000 and 2009 the total amount has grown to $651 billion. Understanding why spinoffs might be received negatively in the market could help firms plan restructuring strategies more effectively and assist investors make better investment decisions.

In this study, we offer an explanation for the non-positive market responses that corporate spinoffs may encounter. We find that earnings management by firms contemplating spinoffs is likely the culprit responsible for investors' negative reactions to spinoff announcements. Specifically, our results show that the parent firms of non-focus-increasing spinoffs have significantly higher levels of abnormal accruals in the year before the spinoff whereas the parent firms of focus-increasing spinoffs do not have such observations. We find parent firms of non-

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focus-increasing spinoffs on average earn a non-positive announcement period return if they are involved in aggressive earnings management. On the other hand, our results show that earnings management has no negative impacts on market reactions to focus-increasing spinoff announcements. In regressions using spinoff announcement period return as the dependent variable, we find that the coefficient on abnormal accruals is significantly negative (positive) for non-focus-increasing (focus-increasing) spinoffs. We interpret the results as implying that abnormal accruals send out negative (positive) signals about the motives and future earnings of non-focus-increasing (focus-increasing) spinoffs.

We contribute to the literature in several ways. First, our study is the first to examine earnings management in corporate spinoffs. By showing that earnings management is prevalent among firms contemplating spinoffs, we offer a logical explanation for the non-positive announcement returns received by a considerable number of spinoffs in the last several decades. Second, we contribute to the literature on earnings management importantly because all the existing studies on earnings management (for example, the studies on initial public offerings, seasoned equity offerings, management buyouts, mergers and acquisitions, and share repurchases) involve capital infusions or a change in firm ownership. There is no ownership or capital changes in a corporate spinoff as current shareholders receive shares of the spun-off company on a pro-rata basis. Thus corporate spinoffs provide a scenario to examine the effects and motives of earnings management without the confounding effect of ownership change and/or capital infusions. Third, Bartov (1993) finds firm managers smooth corporate earnings through the timing of income recognition from disposal of long-lived assets. We add to his finding by showing that earnings management exists before a firm divests its assets. Finally, our study also adds to the literature on the relation between spinoffs and asymmetric information (Nanda 1991;

Krishnaswami and Subramaniam 1999; Habib 2005). Our results show that investors use the information on accruals to help interpret the motives and future earnings of firms contemplating spinoffs.

The rest of the paper is organized as follows. In Section 2 we discuss the likely reasons that may cause firms contemplating spinoffs to manage earnings and develop the hypotheses. Section 3 explains the estimation of measures of earnings management. Section 4 describes the sample selection and reports sample descriptive statistics. Section 5 presents the results and Section 6 concludes.

2 Literature Review and Hypothesis Development

In this section, we discuss three possible reasons that could likely explain the earnings management among firms contemplating spinoffs. Then we develop our hypotheses.

2.1 Firms contemplating spinoffs are likely weaker than comparable firms

One of the reasons causing us to conjecture this hypothesis is that parent firms contemplating spinoffs have incentives to manage earnings is based on the finding in extant literature that firms that undertake spinoffs are weak relative to comparable firms. Michaely and Shaw (1995) compare a sample of spinoffs and carve-outs and find that spinoffs are more likely carried out by firms that are riskier, more leveraged, and less profitable. Similarly, Krishnaswami and Subramaniam (1999) also find firms that conduct spinoffs generate lower internal cash flow and have more debt than control firms. Based on these findings, it is likely that firms contemplating spinoffs are experiencing some forms of weaknesses and may have problems accessing the capital market. For such firms, divesting assets through carve-outs is difficult due to the greater

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scrutiny and more stringent disclosure requirements. Asset sales, despite feasible, are not desirable because the divested assets may have to be sold at a distressed price as a weak parent firm does not have strong bargaining power. Thus, on average, spinoffs represent the most feasible option for weak parent firms to divest assets. In order to persuade current shareholders to hold the divested assets, managers may need to show evidence that the separation is in the best interest of the shareholders. Managers thus may want to manipulate earnings before the spinoff to convince shareholders that the breakup provides a better opportunity to unlock the hidden value for both the parent firms and the subsidiaries. Moreover, if a weak parent firm wants to divest in order to increase its focus and improve operating efficiency, the parent firm has incentives to manage accruals to signal investors its motives and the firm's future earnings capacity.

2.2 Prepare for takeover activity

It is reported in the literature that both the parent firms and subsidiaries experience an unusually high incidence of takeovers following spinoffs (Cusatis et al., 1993 and Desai et al., 1999). Chemmanur and Yan (2004) develop a model in which spinoffs could significantly increase the possibility that the parents and/or the spun-off units be takeover by other firms. However, the existing literature has also shown that the assets divested through spinoffs might already be fully priced or undesirable. Michaely and Shaw (1995) find no evidence supporting the hypotheses that parent firms attempt to leave undervalued assets in the hands of current shareholders. Daley et al. (1997) find that the spun-off subsidiaries experience no improvement in operating performance in either focus-increasing or non-focus-increasing spinoffs. Desai et al. (1999) conclude that parent firms that undertake non-focusing-increasing spinoffs are merely divesting

poorly performing subsidiaries and that efficiency is not the motive in these spinoffs. In short, assets that are spun-off are likely not valuable. Thus firms contemplating spinoffs may find it desirable to manage earnings in order to convince investors that its spun-off assets and retained assets are valuable because doing so may increase the chance that the parent firms and/or the subsidiaries are taken over later by other companies. This conjecture is consistent with the significant evidence reported in existing studies that earnings management is commonly found among firms involved in corporate takeovers (Erickson and Wang, 1999 and Louis, 2004). Easterwood (1998) finds strong empirical evidence that target firms of corporate takeovers significantly increase their accruals in the quarter before being acquired.

2.3 To use abnormal accruals as information signals

The literature on the relation between spinoffs and asymmetric information also provides theoretical support for our conjecture that firms contemplating spinoffs have strong incentives to manage earnings. According to Krishnaswami and Subramaniam (1999), firms that undertake spinoffs have significantly higher levels of asymmetric information and are more diversified than control firms. Diversified firms and firms that have high levels of asymmetric information are on average undervalued; such firms contemplating spinoffs therefore have incentives to signal their higher firm values to investors by increasing the size of abnormal accruals. Firms that undertake focus-increasing spinoffs may not have a strong need to use abnormal accruals to signal investors since the motive to increase firm focus is already a strong information signal. Firms contemplating non-focus-increasing spinoffs, however, would likely want to manage earnings aggressively in order to enhance firm value. Thus, we expect to see more significant accruals management among firms that undertake non-focus-increasing spinoffs. Our conjecture is

consistent with the finding of Bartov (1993) that firms manage earnings when they conduct asset sales.

2.4 Hypotheses development

Based on the above exposition, we develop the following hypotheses:

H1: Firms contemplating spinoffs have incentives to manage earnings.

H1a: Firms contemplating non-focus-increasing spinoffs are more likely than firms contemplating focus-increasing spinoffs to manage earnings.

H1b: Parent firms with higher levels of asymmetry information are more likely to manage earnings than parent firms that have lower levels of asymmetry information.

Investors have reacted positively to both focus-increasing and non-focus-increasing spinoffs in general (Daley 1997 and Desai et al. 1999). However, the reaction of investors to corporate spinoffs may change in the presence of earnings management. Investors may interpret the earnings management of firms contemplating spinoffs either negatively as signals of misinformation or positively as signals of firm value. Investors react negatively when they have concerns about the true motive of the earnings management. Given that regulators have allowed businesses some degree of financial reporting flexibility without violating generally accepted accounting principles, conservative earnings management is unlikely to arouse the concern of investors. However, it is reasonable to say that the concern of investors would be acute when firms are involved in non-focus-increasing spinoffs and aggressive earnings management simultaneously. Thus, we also develop the following hypotheses:

H2a: For firms contemplating non-focus-increasing spinoffs, investors are likely to react

negatively if the parent firms have engaged in aggressive earnings management.

The negative reaction of investors is caused by the concern regarding the true motive of the aggressive earnings management in an environment where no efficiency improvement is expected. The negative reaction of investors could be so strong that it may neutralize or outweigh the positive news associated with the spinoff announcements. For these aggressive non-focus-increasing parent firms, the announcement period return is likely non-positive. If the earnings management is conservative among parent firms of non-focus increasing spinoffs, then the concern of investors may not outweigh the positive announcement effect generally associated with spinoffs.

H2b: For firms contemplating focus-increasing spinoffs, investors may interpret earnings

management of the parent firms as positive signals indicating the future earnings potential.

For these parent firms, the announcement period return is likely non-negative. The non-negative announcement period return is likely more pronounced among parent firms that aggressively manage earnings than parents firms that only conservatively manage earnings.

3   Measuring Earnings Management

Managers typically use accruals to temporally boost or reduce accounting earnings. Thus, the size of abnormal accruals has been frequently used to measure earnings management. Previous literature (Dechow, 1994; Teoh et al. 1998) has argued that using total accruals or long-term

accruals are less likely to identify earnings manipulation. Following Teoh et al. (1998), we employ discretionary current accruals (DCAs) as our measure of earnings management. We apply the modified Jones model (1991) to compute total current accruals in each year for the period 3 years before and after the spinoff announcement and then decompose the total current accruals to obtain discretionary current accruals. Total current accruals are defined as the change in noncash current assets minus the change in operating current liabilities:

$$TCA_{it} = \Delta(CA_{it} - CASH_{it}) - \Delta(CL_{it} - STDEBT_{it}) \qquad (1)$$

where CA_{it} is current assets of firm i in year t (*Compustat* item 4); $CASH_{it}$ is current cash of firm i in year t (*Compustat* item 1); CL_{it} is current liabilities of firm i in year t (*Compustat* item 5); and $STDEBT_{it}$ is current portion of long-term and other short-term debt included in current liabilities of firm i in year t (*Compustat* item 44).

To obtain DCAs in a given year, we first run a cross-sectional regression of total current accruals on change in revenue by using all firms that have the same two-digit SIC code as the parent firm:

$$\frac{TCA_{it}}{A_{i,t-1}} = \gamma_1(1/A_{it-1}) + \gamma_2\left[\frac{\Delta REV_{i,t}}{A_{i,t-1}}\right] + \varepsilon_{it} \qquad (2)$$

where A_{it-1} is the total assets of firm i at the beginning of year t (*Compustat* item 6); ΔREV_{it} is the change in revenue of firm i *in* year t (*Compustat* item *12*), and $\varepsilon_{i,t}$ is random residual term.

The scaled DCAs in year t are then computed as:

$$DCA_{i,t} = \frac{TCA_{it}}{A_{i,t-1}} - \hat{\gamma}_1(1/A_{it-1}) + \hat{\gamma}_2\left[\frac{\Delta REV_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}}\right] \qquad (3)$$

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where $\hat{\gamma}_i$ is the estimated parameter from equation 2 and ΔAR_{it} is the change in accounts receivable of firm i in year t (*Compustat* item 2).

Several studies (Dechow et al., 1995; Kothari et al., 2005) have criticized that the accruals estimated by the Jones Model might be misspecified due to the correlation between accruals and firm performance. Therefore, we use industry-performance-matched discretionary current accruals (PM_DCAs) as our alternative measure of earnings management. Following Louis and Robinson (2005), for each fiscal year and each industry (two-digit SIC), we create four portfolios with at least five firms each by sorting the data into quartiles based on the return-on-asset (ROA) in the year before. Then we calculate the discretionary current accruals for each portfolio by using the modified-Jones model. The industry-performance-matched discretionary accrual (PM_DCA) of a firm is equal to the firm-specific discretionary current accruals minus the median discretionary current accruals of its matched portfolio.

4 Sample Selection and Descriptive Statistics

4.1 Sample Selection and Data

Our sample is gathered from the Thomas ONE Banker's Mergers and Acquisitions database (the former Deals Securities Data Corporation (SDC) database). We identify a sample of U.S. firms that undertook spinoff between 1985 and 2005. To be included in our sample, the spinoff must meet the following criteria:

1   Deals must be voluntary tax-free spin-offs.[1] Any non-voluntary spin-offs such as those compelled by anti-trust regulations and taxable distribution deals are excluded from the sample.

2   The spinoff is not part of a liquidity, bankruptcy, carve-out or merger process.

3   Financial industry (with SIC code 6000-6999) and utilities (with SIC code 4900-4949) spinoffs are dropped from the sample.

4   The announcement day and effective day (completion of a spinoff) of a spinoff must be identifiable in news releases or articles found on Factiva.

5   Data of the spinoff parent firms must be available on the Center for Research in Security Prices (CRSP) and Compustat.

6   The spinoff with unverifiable announcement dates and spinoffs that have confounding announcements (such as M&As and dividend announcements) are excluded.

The market price and return data are obtained from CRSP and annual accounting data including segment information are collected from Compustat. Financial analysts' forecast data are collected from the Institutional Brokers Estimate System (I/B/E/S) database. The initial sample is 280 spin-offs. We eliminate 54 records without accrual data. Our final sample thus consists of 226 completed spinoff transactions between 1985 and 2005.

4.2 Descriptive statistics

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[1] Section 355 of the Internal Revenue Code allows a corporation to make a tax-free distribution to its shareholders of stock and securities in one or more controlled subsidiaries. To be qualified for the tax-free treatment, firms must satisfy the following requirements: (a) The distributing corporation must distribute the stock of a controlled corporation, preexisting or newly created, to its shareholders.; (b) The distributing corporation generally must distribute all its controlled corporation stock and securities immediately before the transaction; (c) Following the distribution, both the controlled and distributing corporations must be actively engaged in a trade or business with a five-year history; (d) Neither the distributing nor the controlled corporation can use the spin-off as a device for distributing earnings and profits; (e) A spinoff is to be motivated, in whole or substantial part, by one or more corporate business purposes, and (f) Following the distribution of the controlled corporations stock, the distributing corporation shareholders must maintain continuity of interest in both companies.

Panel A of Table 1 reports the distribution of spinoffs by year. The distribution shows that spinoffs are relatively more active in the 10-year period from 1991 to 2000. Of the 226 spinoffs examined, 146 are focus-increasing deals in which the parents and the spun-off subsidiaries have different two-digit SIC codes; 80 are non-focus-increasing spinoffs. The 226 spinoffs involved 217 parent firms. Among the 217 parent firms, one divested three subsidiaries and seven divested two subsidiaries in the same year. Panel B of Table 1 reports the distribution of the parent firms of spinoffs by industry. With the exception of a few industries such as manufacturing, mining, construction, and agricultural production, the spinoffs are quite evenly distributed among the remaining industries over the sample period.

In Table 2 we report the descriptive statistics of the parent firms and basic information regarding the spinoff transactions. The reported financial data in the table are based on end-of-fiscal-year values prior to the spinoff announcement. In Panel A we compare the entire sample of parents firms with a sample of control firms that are matched by size and industry. Relative to the control firms, the parent firms in our sample have significantly higher sales revenues and total assets. However, the parent firms have a significantly lower market capitalization as well as a significantly lower market-to-book ratio than control firms. The sales and total assets of our sample of parent firms are higher than those in previous studies (Desai and Jain, 1999; Krishnaswami and Subramaniam, 1999), implying that spinoffs have become more commonly used by larger firms to restructure their organizations in recent years. On average, the parent firms in our sample have a leverage ratio that is comparable to control firms. Regarding operating performance, the parents firms have a significantly lower return on assets (ROA), return on sales (ROS), cash-flow return on assets (CFROA), and return on cash-adjusted assets (ROA_cash_adj) than control firms. In addition, our sample of parent firms also has a

significantly lower current ratio. Our results are consistent with those of Krishnaswami and Subramaniam (1999) and Michaely and Shaw (1995) that firms involved in spinoffs have poorer operating performance and are financially weaker than comparable firms that are not involved in spinoffs. This initial observation lends support to our hypothesis (H1) that parent firms contemplating spinoffs may need to manage their earnings in order to make the spinoffs successful.

In Panels B and C of Table 2, we compare the characteristics of non-focus-increasing and focus-increasing parent firms against their control firms, respectively. In Panel B, the result shows that parent firms involved in non-focus-increasing spinoffs have a significantly lower mean (median) return on assets (ROA), cash-flow return on assets (CFROA), and cash-adjusted return on assets (ROA_cash_adj) than control firms. The mean return on sales (ROS) is also significantly lower for the parent firms. On the other hand, Panel C shows that parent firms involved in focus-increasing spinoffs only have a lower return on assets (ROA) and return on cash-adjusted assets (ROA_cash-adj); their return on sales (ROS) and cash-flow return on assets (CFROA) are comparable to those of the control firms. Thus, non-focusing-increasing parent firms have more performance measures that are worse than control firms. In addition, a quick comparison between Panel B and Panel C also shows that poor operating performance is more pronounced among non-focus-increasing parent firms than focus-increasing parent firms. This result lends support to our hypothesis (H1a) that parent firms contemplating non-focus-increasing spinoffs are more likely than parent firms contemplating focus-increasing spinoffs to manage earnings.

Panel D of Table 2 presents spinoff transaction characteristics. Transaction value is measured by the market value of the spun-off subsidiary at the end of the first trading day and

spinoff size is the ratio of the transaction value to the market value of the parent firm one day prior to the ex-date. For the entire sample, the mean (median) transaction value of spinoffs is $728 million ($155 million); the mean (median) spinoff size is equal to 28.86 % (17.06%) of the value of the parent firm's capitalization. These numbers are comparable to the 29% in Vijh (1994) and the 30.7% in Krishnaswami and Subramaniam (1999). On average, parent firms took approximately 7 months to complete their spinoffs.

5   Results

5.1 Evidence of earnings management around spin-off announcements

In Table 3 we report evidence of earnings management among the sample of parent firms. The full-sample result in Panel A shows that the parent firms have aggressively pursued earnings increasing accruals management in the year before spinning off their subsidiaries. Both the discretionary current accruals (DCA) and the performance-matched discretionary current accruals (PM_DCA) have a mean (median) that is significantly higher than zero in year t-1. In the spinoff year (year t), both the discretionary current accruals and performance-matched discretionary accruals turn significantly negative though the latter is only significant at the 10% level. The results suggest that accruals management by parent firms of spinoffs is strong but has a short duration, starting from the year before the spinoff and quickly reverts itself in the spinoff completion year.

In Panel B of Table 3, we report the abnormal accruals of parent firms that undertook non-focus-increasing spinoffs. The result shows significant earnings management among parent firms of non-focus-increasing spinoffs. The mean (median) value of discretionary current accruals is positive and significant at the 5% (1%) level in the year before the spinoff. In the

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spinoff completion year, discretionary current accruals turn negative and the mean (median) is significant at the 5% level. After the quick reversal in the spinoff completion year, annual discretionary current accruals do not show any significant changes in the following three years. Performance-matched discretionary accruals are also significantly positive in the year before the spinoff, but they do not experience significant reversals in the following years.

Unlike the result for the non-focus-increasing parent firms, in Panel C of Table 3 we find that parent firms of focus-increasing spinoffs have not experienced significant changes in either discretionary current accruals (DCA) or performance-matched discretionary accruals (PM_DCA) three years before and after the spinoff. In short, there is no evidence of earnings management among parent firms of focus-increasing spinoffs.

The result in Panel A of Table 3 supports our hypothesis H1 that parent firms contemplating spinoffs have incentives to manage earnings. In addition, the results in Panels B and C support our hypothesis H1a that parent firms of non-focus-increasing spinoffs are more likely than parent firms of focus-increasing spinoffs to conduct earnings management.

5.2 Relation between earnings management and characteristics of parent firms

In hypothesis H1b, we predict that parents firms with higher levels of asymmetric information are more likely than parent firms with lower levels of asymmetric information to manage earnings. In this section, we seek evidence supporting the hypothesis by examining the relation between pre-spinoff accruals and the firm characteristics of the parent companies in our sample.

We use six conventional proxies to measure the level of asymmetric information. Among the proxies, SPREAD stands for the average daily bid-ask spread scaled by the average of the bid-ask prices over the 100-day interval before the spinoff announcement. SD is standard

deviation of the market model residuals calculated using daily returns in the year preceding the spinoff announcement. ANA_ERROR is financial analysts forecast error measured as the absolute value of the difference between actual earnings and forecast earnings scaled by the share price in the last month of the fiscal year before the spinoff announcement. A greater forecast error indicates a higher dispersion of analyst opinions regarding a firm's earnings. SIZE is the natural log of the book assets of the parent firm at the fiscal year end prior to the spinoff announcement. R&D is annual research and development expenditures divided by total book assets at the fiscal year end prior to the spinoff announcement. High levels of R&D expenses represent significant intangible assets and thus higher levels of information asymmetry. GROWTH is the mean expected long-term earnings growth rate forecasted by financial analysts before the spinoff announcement. Firms with higher growth rates have higher levels of information asymmetry because growth opportunities are typically more difficult to evaluate.

In Table 4, we divide the parent firms into three groups by the size of discretionary accruals. From the result of Panel A, we find parent firms that are aggressive (top one-third) in earnings management have higher levels of asymmetric information than parent firms that are relatively conservative (bottom one-third) in earnings management. Among the six proxies employed to measure the level of asymmetry information, SPREAD, SD, R&D, and GRWOTH have significantly higher means and medians for the aggressive parent firms than the conservative parent firms. The difference in mean (median) SPREAD, SD, R&D, and GROWTH between the two groups of parent firms is statistically significant. The result supports hypothesis H1b that firms with higher levels of asymmetric information are more likely to conduct earnings management. This finding is consistent with that of Krishnaswami and Subramaniam (1999).

In Panel B of Table 4, FOUCS is a zero-one dummy variable that takes on the value one if the parent firm conducts a focus-increasing spinoff and zero if the parent executes a non-focus-increasing spinoff. The result in Panel B is used for providing further evidence of hypothesis H1a that firms contemplating non-focus-increasing spinoffs are more likely to conduct earnings management than firms contemplating focus-increasing spinoffs. As shown in Panel B, parent firms that are aggressive (top one-third) in earnings management have a mean (median) FOCUS value of 0.574 (1.00) whereas parent firms that are conservative (bottom one-third) have a mean (median) FOCUS value of 0.735 (1.00). The difference in mean (median) FOCUS between the two groups of parent firms is significant at the 5% level. The result shows that parent firms that are aggressive in earnings management are more frequently associated with non-focus-increasing spinoffs. The finding further supports hypothesis H1a.

5.3 Market reactions to spinoff announcements

In Table 5, we report stock price reactions to spinoff announcements. In Panel A, for the entire sample we find results that are consistent with the existing literature that spinoff announcement period returns are positive and significant. On the event day (day 0), the mean and median stock returns are 1.84% and 1.33% respectively, and both are significant at the 1% level. For the event period window (-1, +1), the mean (median) return is 3.25% (2.70%) and significant at the 1% level as well. The magnitude of the positive return for our sample period is comparable to the results reported by other researchers. It is however, interesting to see that about one-third of our sample has non-positive returns despite our sample period is longer and different from earlier studies. That is, similar to earlier studies, a considerable number of spinoffs have non-positive announcement returns.

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To evaluate the impact of earnings management on spinoff announcement return, we double sort our sample by the size of pre-spinoff discretionary current accruals (DCAs) and the type of spinoff. We report the mean and median announcement returns for each group in Panel B of Table 5. For non-focus-increasing spinoffs, the aggressive group (abnormal accruals among the top one-third) earns a significant lower stock return than the conservative group (abnormal accruals among the bottom one-third). On the event day (day 0), the mean (median) announcement return for the aggressive non-focus-increasing spinoff group is -0.34% (0.24%) and it is not statistically significant; the mean (median) announcement return for the conservative non-focus-increasing spinoff group is 1.88% (1.30%) and it is statistically significant at 1% level. For the event window (-1, +1), the mean (median) announcement return for the aggressive non-focus-increasing spinoff group is 0.85 % (1.15%) whereas the mean (median) announcement return for the conservative non-focus-increasing spinoff group is 3.76% (2.32%). For both the event windows, the aggressive non-focus-increasing group has a mean (median) announcement period return that is significantly lower than the conservative non-focus-increasing group. Conversely, earnings management does not have a negative impact on the announcement period returns of focus-increasing spinoffs as investors might view the abnormal accruals as positive signals. As predicted, the aggressive group earns a slightly higher announcement period return than the conservative group in both event windows though the difference is insignificant. We repeat the same analysis in Panel C using performance-matched discretionary current accruals (PM_DCA). Results in Panel C are similar and consistent with those in Panel B.

Overall, the results in Panels B and C of Table 5 suggest that investors maintain their positive reactions to spinoff announcements when the parent firms are relatively conservative in earnings management. For parent firms that are aggressive in earnings management, investors

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react negatively to non-focus-increasing deals as they are concerned about the motives of the aggressive parents in an environment where efficiency improvement is unexpected. To the extent that parent firms that are aggressive in earnings management have higher levels of asymmetric information and are more associated with non-focus-increasing spinoffs (as shown in Tables 3 and 4), investors may extrapolate negative meanings in the abnormal accruals of these aggressive parent firms. The negative reaction by investors to the aggressive accruals management by parents of non-focus-increasing spinoffs could be so strong that it totally offsets any positive news associated with spinoff announcements. The results in Table 5 support our hypotheses H2a, and H2b.

5.4 Regression Results

The results of univariate analysis are supportive of the predictions of our hypotheses. To see if our predictions hold in the presence of control variables, we perform multivariate regressions and report their results in Tables 6a and 6b.

Table 6a presents the multivariate regression results of the non-focus-increasing parent firms. All the seven models have a significant F-statistic. The adjusted R^2 values range from 0.09 to 0.24, indicating a relatively strong explanatory power of the regression models. The coefficients on DCA and PM_DCA are significantly negative at either the 1% or 10% level, implying that investors react negatively to the earnings management of parent firms involved in non-focus-increasing spinoffs. The result supports the prediction of hypothesis H2a. A likely reason for the negative reaction of investors is that in the absence of efficiency improvements among non-focus-increasing spinoffs, investors become concerned about the motives of earnings management of the parent firms. The coefficient on market-to-book (MB) ratio is negative and

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significant, suggesting that investors react negatively to non-focus-increasing spinoffs when parent firms are overvalued. The positive coefficient on leverage suggests that investors favor the disciplinary effect imposed by debt on parent firms involved in non-focus-increasing spinoffs. The coefficient of the relative size of spinoff (SPIN_SIZE) is insignificant.

In Table 6b, we report the regression results of the focus-increasing sub-sample. The regression models have a lower explanatory power among focus-increasing parent firms given that the highest adjusted R^2 is only 0.05. Nevertheless, the full model (model 7) has a significant F-statistic and also has the highest adjusted R^2 among all the seven models. A major result in this table is that the coefficient on DCA is significantly positive at the 5% level in five models. That is, investors react positively to the earnings management of firms engaged in focus-increasing spinoffs. This is a sharp contrast to the result of the non-focusing-increasing sub-sample. A plausible explanation is that in the presence of efficiency improvements among parent firms undertaking focus-increasing spinoffs, investors conjecture that earnings management of the parent firms might be a signal of future earnings. The result is consistent with the prediction of hypothesis H2b. The coefficient on MB is negative and significant at either the 5% or 10% level. The coefficient on SPIN_SIZE is significantly positive at the 5% level, suggesting that investors favor focus-increasing spinoffs in general.

For robustness purpose, we have used absolute values of DCA and PM_DCA in the regressions and obtained similar and consistent results. The results are not tabulated.

6   Conclusions

Empirical results on corporate spinoffs reveal that a considerable number of parent firms have met with negative investor reactions despite existing theories overwhelming suggest that spinoffs

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are value-increasing events. In this study, we offer an explanation for this puzzle by showing that the negative announcement period returns associated with some spinoffs are due to the negative reaction of investors to earnings management of the parent firms. We find strong evidence of earnings management in the year before spinoff among firms contemplating non-focus-increasing spinoffs; there is no evidence of earnings management among firms contemplating focus-increasing spinoffs. Using a sample of 226 completed spinoffs between 1985 and 2005, we find that firms involved in spinoffs have poorer operating performance measures relative to control firms and the weakness is more pronounced among firms involved in non-focus-increasing spinoffs. Thus we argue that firms contemplating non-focus-increasing spinoffs are more likely to manage earnings in order to make the spinoffs appealing to shareholders. In regressions using spinoff announcement period return as the dependent variable, we find that the coefficient on abnormal accruals is significantly negative for non-focus-increasing spinoffs. We posit that in the absence of efficiency improvements among non-focus-increasing spinoffs, investors become concerned about the motives of earnings management of the parent firms. The regression coefficient on abnormal accruals is significantly positive for focus-increasing spinoffs. We interpret the results as implying that abnormal accruals send out negative (positive) signals about the motives and future earnings of non-focus-increasing (focus-increasing) spinoffs.

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Table 1
Sample Distribution of Spinoffs

Panel A: Distribution of spinoff sample by year

Year	Number of spin-offs	Focus-increasing spinoffs	Non-focus increasing spinoffs
1985	7	6	1
1986	8	8	0
1987	5	4	1
1988	12	10	2
1989	4	3	1
1990	9	6	3
1991	7	7	0
1992	9	6	3
1993	11	7	4
1994	14	7	7
1995	12	8	4
1996	18	10	8
1997	17	12	5
1998	13	7	6
1999	22	12	10
2000	17	11	6
2001	10	6	4
2002	11	6	5
2003	8	4	4
2004	5	3	2
2005	7	3	4
Grand Total	226	146	80

Panel B: Distribution of parent firms by industry

Industry	SIC Code	Frequency
Agricultural Production	01	1
Mining	10, 12	3
Oil and Gas Extraction	13	10
Construction	16	1
Food and Kindred Products	20	13
Manufacturing	21-26, 29, 31-34, 37	40
Chemicals and Allied Products	28	18
Industrial and Commercial Machinery and Computer Equipment	35	17
Electronic and Other Electronic Equipment	36	17
Measuring, Analyzing, and Controlling Instruments	38	18
Transportation, Communications, Electric, Gas, and Sanitary Services	40, 42, 44, 45, 47	6
Communications	48	11
Wholesale Trade	50, 51	6
Retail Trade	55-59	14
Services	70, 72, 75, 78-80, 82, 87	23
Business Services	73	18
All others	99	1
Total		217

Notes:

Table 1 reports the distribution of a sample of spinoff completed over the period 1985 to 2005. Panel A reports the spinoff distribution by year. The number of spinoffs is the number of completed spinoffs per year. Focus-increasing spinoffs are those in which parents and spunoff subsidiaries have different 2-digit SIC code; otherwise they are classified as non-focus-increasing spinoffs. Panel B reports the distribution of the sample by industry using 2-digit SIC code.

Table 2
Characteristics of Spinoff Firms and Comparable Non-spinoff Firms

Panel A: Characteristics of spinoff firms and control firms

	All spinoffs	Control firms	*P*-value
Sales($MM)	3937.84 [1103.21]	3118.97 [756.11]	0.0284 [0.0002]
Total Assets ($MM)	4136.38 [1303.72]	3162.65 [762.38]	0.0008 [<.0001]
Market Capitalization($MM)	5854.20 [1025.39]	6515.90 [1535.00]	0.0489 [<.0001]
Market to Book (M/B)	1.91 [1.43]	2.11[1.55]	0.0533 [0.0317]
Leverage (%)	24.95 [24.13]	25.10 [24.79]	0.7001 [0.9537]
ROA (%)	12.36 [14.38]	16.18 [14.95]	0.0002 [0.0009]
ROS (%)	14.81 [13.67]	17.17 [14.28]	0.1628 [0.1070]
CFROA (%)	7.93 [9.43]	10.41 [9.61]	0.0188 [0.0910]
ROA_cash_adj (%)	10.67 [15.79]	19.68 [16.20]	0.0015 [0.0038]
Current Ratio (%)	220.75 [169.88]	228.75 [196.83]	<.0001 [<.0001]

Panel B: Characteristics of non-focus-increasing spinoff firms and control Firms

	Non-focus-increasing	Control firms	*P*-value
Sales($MM)	3307.74 [817.92]	2758.17 [653.35]	0.0096 [<.0001]
Total Assets ($MM)	3769.30 [1472.01]	2943.79 [735.73]	0.1781 [0.0014]
Market Capitalization($MM)	4884.22 [1793.65]	6125,76 [2103.94]	0.0131 [<.0001]
Market to Book (M/B)	2.25 [1.72]	2.36 [1.73]	0.6527 [0.2483]
Leverage (%)	25.14 [24.39]	26.60 [22.44]	0.5449 [0.7188]
ROA (%)	13.39 [14.41]	16.88 [14.86]	0.0071 [0.0411]
ROS (%)	13.62 [15.58]	19.22 [16.24]	0.0471 [0.2113]
CFROA (%)	6.93 [8.85]	10.96 [10.81]	0.0173 [0.0161]
ROA_cash_adj (%)	10.57 [16.50]	20.01 [16.88]	0.0445 [0.0696]
Current Ratio (%)	234.26 [169.96]	235.91 [174.33]	<.0001 [<.0001]

Panel C: Characteristics of focus-increasing spinoff firms and control firms

	Focus-increasing	Control firms	*P*-value
Sales($MM)	4263.91 [1283.97]	3305.68 [912.60]	0.1896 [0.6638]
Total Assets ($MM)	4326.34 [1170.75]	3260.73 [798.57]	0.0456 [0.0152]
Market Capitalization($MM)	6356.15 [956.43]	6562.47[1450.26]	<.0001 [<.0001]
Market to Book (M/B)	1.73 [1.36]	1.93 [1.49]	0.0619 [0.0312]
Leverage (%)	24.85 [23.90]	24.76 [22.49]	0.9477 [0.8295]
ROA (%)	13.69 [14.38]	15.82 [14.95]	0.0061 [0.0205]
ROS (%)	14.09 [13.59]	16.11 [13.60]	0.2027 [0.2991]
CFROA (%)	9.81 [10.12]	10.13 [10.80]	0.2127 [0.9170]
ROA_ cash_adj (%)	10.73 [15.57]	19.51 [16.20]	0.0137 [0.0254]
Current Ratio (%)	213.77 [169.88]	228.15 [172.06]	<.0001 [<.0001]

Panel D: Deal Characteristics

	All spinoffs	Focus-increasing	Non-focus-increasing
Transaction Value ($MM)	728.95 [155.40]	735.67 [142.90]	715.41 [234.20]
Spinoff Size (%)	28.86 [17.06]	30.40 [17.28]	25.77 [15.66]
Duration (Days)	210.37 [191.00]	211.45 [181.00]	208.46 [202.50]

Notes:
The first value of each variable represents the mean and the second value represents the median. Control firms are 217 size-and industry-matched firms that did not engage in a spinoff. All variables and ratios in Panel A to C are calculated using values in the fiscal year end preceding the announcement year. Sales are sales revenue. Total assets are total book value. Market capitalization is market value of equity of a firm. Market-to-book is measured as book assets minus book equities plus market value assets divided by book assets. Leverage is measured as the ratio of long-term and short-term debt to book assets. ROA is income before extraordinary items scaled by total book assets. ROS is the ratio of income before extraordinary items before depreciation to total sales. CFROA is the ratio of cash flow from operations to total assets. ROA_cash_adj is the ratio of income before extraordinary items scaled by book value of total assets minus cash and marketable securities. The current ratio is the ratio of current assets to current liabilities. Last column in Panel A to C reports *p*-value from t-test (signed rank test) for the difference between the means (medians) of the spinoff sample and control firms, respectively. Panel D reports deal characteristics. The transaction value is market value of as a spun-off subsidiary at the end of the first trading day. Spinoff size is the ratio of transaction value to market value of a parent firm one day prior to the ex-date. Duration is calculated as the days between spinoff announcement and ex-date.

Table 3
Median and Mean Discretionary Current Accruals (%) Before and After Spinoffs

Fiscal Year	t-3	t-2	t-1	t	t+1	t+2	t+3
Panel A: Discretionary current accruals (Entire sample)							
DCA: Discretionary current accruals							
Median	-0.70	0.38	0.76[b]	-0.54[a]	-0.29	0.53	-0.25
Mean	3.56[c]	-0.13	3.02[b]	-2.76[b]	-1.52	-1.97	-1.66
N	215	219	226	207	191	171	158
PM_DCA : Discretionary current accruals (DCA) of spinoffs – Median DCAs of Control firms							
Median	-0.93	0.31	1.23[b]	0.46	-0.16[c]	0.34	-0.47
Mean	3.52[c]	-0.23	7.66[a]	-2.28[c]	-1.71[c]	-1.10	-1.88
N	214	218	225	207	191	170	157
Panel B: Discretionary current accruals (Non-focus-increasing spinoffs only)							
DCA: Discretionary current accruals							
Median	-0.10	-0.21	2.07[a]	-1.45[c]	0.29	-0.05	0.16
Mean	1.74	-1.51	7.10[b]	-2.73[b]	-1.61	-8.49	-4.91
N	77	78	80	72	67	58	52
PM_DCA : Discretionary current accruals (DCAs) of spinoffs – Median DCAs of Control firms							
Median	0.04	-0.33	2.46[a]	0.28	0.06	-0.04	-0.21
Mean	1.83	-1.91	6.68[b]	-2.04	-1.99	-8.62	-5.28
N	77	78	80	72	67	58	52
Panel C: Discretionary current accruals (Focus-increasing spinoffs only)							
DCA: Discretionary current accruals							
Median	-0.70	0.73	-0.12	-0.14	-0.49[c]	0.69	-0.36
Mean	4.57	0.63	0.79	-2.78	-1.47	1.39	-0.06
N	138	141	146	135	124	124	106
PM_DCA : Discretionary current accruals (DCA) of spinoffs – Median DCAs of Control firms							
Median	-1.63	0.49	0.54[c]	0.53	-0.18	0.55[c]	-0.47
Mean	4.47	0.70	8.20	-2.40	-1.55	2.79[c]	-0.20
N	137	140	145	135	124	112	105

[a] Statistical significant at 1% level, using t-test for the mean and Wilcoxon Signed Rank test for median
[b] Statistical significant at 5% level, using t-test for the mean and Wilcoxon Signed Rank test for median
[c] Statistical significant at 10% level, using t-test for the mean and Wilcoxon Signed Rank test for median

Notes:
Panel A to Panel C present the results of discretionary current accruals. DCAs are defined as discretionary current accruals and are calculated based on cross-sectional Jones approach of Teoh et al. (1998). PM_DCAs are defined as performance-matched discretionary current accruals and are the difference between the DCAs of spin-off sample firms and the median DCAs of a portfolio (exclude the sample firms) matched by industry and ROA.

Table 4
Earnings Management and Asymmetric Information

Variable	Q1 Conservative		Q2 Middle		Q3 Aggressive		Q3-Q1 Difference	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Panel A: Information asymmetry								
SPREAD	2.565	2.552	2.691	3.079	3.244	3.797	0.679[c]	1.245[c]
SD	0.019	0.027	0.021	0.023	0.025	0.030	0.006[b]	0.003[b]
ANA_ERROR	0.006	0.022	0.008	0.084	0.007	0.100	0.001	0.078
SIZE	6.870	6.494	7.327	6.920	7.462	7.023	0.592	0.529
R&D	0.024	0.048	0.028	0.042	0.054	0.070	0.030[b]	0.022[b]
GROWTH	11.670	14.114	13.815	15.605	16.000	19.031	4.330[a]	4.917[a]
Panel B: Focus-increasing vs. Non-focus increasing								
FOCUS	1.000	0.735	1.000	0.633	1.000	0.574	-0.004[b]	-0.161[b]

[a] Statistical significant at 1% level, using t-test for the mean and Wilcoxon Signed Rank test for median
[b] Statistical significant at 5% level, using t-test for the mean and Wilcoxon Signed Rank test for median
[c] Statistical significant at 10% level, using t-test for the mean and Wilcoxon Signed Rank test for median

Notes:
Panel A reports the level of information asymmetry in each group based on discretionary current accruals in year t-1. SPREAD is the bid-ask spread and is calculated as the average 100 days bid-ask spread of spinoff parents scaled by the average of the bid-ask prices before the spinoff announcement. SD is the standard deviation of the market model residual and is calculated in the year preceding the spinoff announcement. ANA_ERROR is the financial analysts forecast error and it is measured as ratio of the absolute value of the difference between the actual earnings and the forecast earnings to the price per share in the last month of the fiscal year before the spinoff announcement. SIZE is the natural log of the book assets of spinoff parents at the fiscal year end prior to the spinoff announcement. R&D is the research and development spending and is calculated as the annual research and development expenditures divided by total book assets at the fiscal year end prior to the spinoff announcement. GROWTH is the mean long-term earnings growth rate that is forecasted by financial analysts before the spinoff announcement. Panel B reports the tendency of focus-increasing spinoff in each group. FOCUS is a dummy and it equals one if a parent conducts a focus-increasing spinoff, and zero otherwise.

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Table 5

Abnormal Returns around Spin-off Announcements

Panel A: Abnormal returns around spinoff announcements

Event period (Days)	Cumulative abnormal returns		
	Mean	**Median**	**Percentage Positive**
(-5, -1)	1.08% [b]	-0.16%	47.00%
(0, 0)	1.84% [a]	1.33% [a]	66.82% [a]
(-1, +1)	3.25% [a]	2.70% [a]	68.80% [a]
(+1,+5)	0.70%	0.14%	51.61%

Panel B: Sub-sample announcement period returns. Firms are sorted by the size of DCAs.

Event period (Days)		Non-focus-increasing			Focus-increasing		
		Aggressive (1)	**Conservative (2)**	**Diff. (1)- (2)**	**Aggressive (1)**	**Conservative (2)**	**Diff. (1)- (2)**
(0, 0)	Mean	-0.34%	1.88% [a]	-2.22% [b]	2.71% [a]	2.10% [a]	0.61%
	Median	0.24%	1.30% [a]	-1.06% [c]	2.22% [a]	1.29% [a]	0.93%
	% Positive	54.05%	75.67% [a]		67.61% [a]	63.89% [a]	
(-1,1)	Mean	0.85%	3.76% [a]	-2.91% [b]	4.11% [a]	3.35% [a]	0.76%
	Median	1.15%	2.32% [b]	-1.17% [c]	3.96% [a]	2.77% [a]	1.19%
	% Positive	59.46%	67.56% [b]		71.83% [a]	69.44% [a]	

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Panel C: Sub-sample announcement period returns. Firms are sorted by the size of PM_DCAs.

Event period (Days)		Non-focus-increasing			Focus-increasing		
		Aggressive (1)	Conservative (2)	Diff. (1)-(2)	Aggressive (1)	Conservative (2)	Diff. (1)-(2)
(0, 0)	Mean	-0.35%	1.89%[a]	-2.24%[b]	2.50%[a]	2.24%[a]	0.26%
	Median	0.24%	1.46%[a]	1.22%[b]	2.18%[a]	1.33%[a]	0.85%
	% Positive	54.05%	75.68%[a]		64.79%[a]	66.20%[a]	
(-1,1)	Mean	1.37%	3.25%[a]	-1.88%[b]	3.92%[a]	3.49%[a]	0.43%
	Median	1.17%	2.32%[b]	-1.15%[c]	3.35%[a]	3.45%[a]	-0.10%
	% Positive	59.46%	67.57%[b]		73.24%[a]	67.61%[a]	

Notes:

Panel A reports cumulative abnormal returns (CARs) over selected intervals for a sample of completed spinoffs between 1985 to 2005. Abnormal returns are calculated using the market model parameters estimated over a 255-day period ending 5 days (Day -5) before the announcement date (Day 0). The CRSP value- weighted index is used in the market model to compute betas. CARs are cumulated in the intervals. The percentage positive is the ratio of the number of firms with positive abnormal returns to the total number of firms. The generalized sign test is used to test the significance of the percentage of firms with positive abnormal returns. Panels B and C report subsample announcement period returns. Respectively, [a] , [b] and [c] denote statistical significance at the 1%, 5% and 10% level.

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Table 6A

Cross-sectional regressions of abnormal announcement returns on pre-spin-off abnormal accruals for non-focus-increasing spinoffs

	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7
Intercept	0.030	0.030	0.066	0.067	0.051	0.033	0.037
	$(2.92)^a$	$(2.88)^a$	$(4.39)^a$	$(4.48)^a$	$(2.83)^a$	$(1.69)^b$	(0.93)
DCAs	-0.101		-0.022		-0.050	-0.059	-0.065
	$(-3.06)^a$		$(-1.56)^c$		$(-1.51)^c$	$(-1.43)^c$	(-1.27)
PM_DCAs		-0.105		-0.021			
		$(-2.91)^a$		$(-1.50)^c$			
MB			-0.019	-0.019	-0.014	-0.012	-0.013
			$(-3.13)^a$	$(-3.27)^a$	$(-2.02)^b$	$(-1.76)^b$	$(-1.67)^b$
ANA_ERROR					0.090	0.092	0.090
					$(1.52)^c$	$(1.60)^c$	$(1.45)^c$
LEVERAGE						0.008	0.008
						$(2.16)^b$	$(2.09)^b$
SPIN_SIZE							-0.0003
							(-0.06)
F Statistics	9.37^a	8.45^a	10.16^a	10.13^a	6.52^a	6.13^a	2.62^b
Adjusted R^2	0.103	0.093	0.201	0.200	0.195	0.240	0.117
N	74	74	74	74	66	66	62

Table 6B

Cross-sectional regressions of abnormal announcement returns on pre-spin-off abnormal accruals for focus-increasing spinoffs

	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7
Intercept	0.037 (6.20)[a]	0.037 (6.15)[a]	0.045 (4.09)[a]	0.046 (4.20)[a]	0.048 (4.15)[a]	0.047 (3.59)[a]	0.024 (1.19)
DCAs	0.075 (1.58)[b]		0.071 (1.49)[b]		0.084 (1.69)[b]	0.083 (1.67)[b]	0.088 (1.77)[b]
PM_DCAs		0.001 (0.09)		-0.0001 (-0.11)			
MB			-0.005 (-1.36)[c]	-0.005 (-1.49)[c]	-0.005 (-1.84)[b]	-0.004 (-1.78)[b]	-0.006 (-1.73)[b]
ANA_ERROR					-0.033 (-2.10)[b]	-0.033 (-2.07)[b]	-0.024 (-1.45)[c]
LEVERAGE						0.0003 (0.08)	-0.002 (-0.51)
SPIN_SIZE							0.006 (1.74)[b]
F Statistics	2.50	0.01	1.62	0.49	2.63[c]	1.89	2.16[c]
Adjusted R²	0.010	0.007	0.009	0.007	0.037	0.028	0.046
N	143	142	143	142	128	127	122

Notes:

Table 6 reports cross-sectional regressions of announcement returns on abnormal accruals for non-focus-increasing and focus-increasing spinoff firms from 1985-2005. The dependent variable is the mean three-day cumulative abnormal return generated over the interval (-1, +1). The cumulative abnormal return around spin-off announcements is calculated using the market model with the CRSP value- weighted index as the benchmark of the market portfolio. The estimated period is over a 255 trading day period ending 5 trading days prior to the announcement day. All the accounting data applied to calculate independent variables in this table are from the annual data at the end of fiscal year prior to the spin-off announcement year. DCAs are defined as discretionary current accruals and are calculated based on cross-sectional Jones approach of Teoh et al. (1998). PM_DCAs are defined as performance-matched discretionary current accruals and are the difference between the DCAs of spin-off sample and the median DCAs of a portfolio (exclude the sample firm) matched by industry and ROA. MB is market-to-book ratio and is measured as book assets minus book equities plus market value assets divided by book assets. ANA_ERROR is the financial analysts forecast error and is measured as ratio of absolute value of the difference between actual earnings and forecast earnings to price per share in the last month of the fiscal year before the spinoff announcement. LEVERAGE is the ratio of book debt to book equity. SPIN_SIZE is the log of transaction value. One-tail heteroskedasticity-adjusted t-statistics are reported in parentheses and two-tail t-statistics are reported in brackets. Respectively, [a] [b] and [c] denote statistical significance at the 1%, 5% and 10% level.

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