

Disclosure Tone of the Spin-off Prospectus and Insider Trading

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Abstract

This paper examines the relation between the tone of a spin-off's prospectus and insider trading to determine whether managers manipulate the tone to enhance profits from their transactions in the spun-off subsidiary. I document that the tone of the Management's Discussion and Analysis (MD&A) in a spin-off prospectus is negatively associated with insider trading pattern in the spun-off subsidiary within three months of the spin-off date, after controlling for other determinants of the tone of the MD&A. I also find that the negative relation exists only for the sub-sample of executives of the spun-off subsidiary who have also been executives in the parent company prior to the spin-off. Additional tests show that the link between tone and insider trading depends on cross-sectional variation associated with opportunities to manipulate the prospectus tone. Given that insiders are extensive net buyers of stock in the new public subsidiary, these findings suggest that managers could use more pessimistic tone in the prospectus to disguise upside potential of the spun-off subsidiary in order to seize the opportunity to purchase undervalued shares.

Keywords: Spin-off; insider trading; prospectus; textual analysis

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1. INTRODUCTION

Over the past two decades, many companies have reduced their size by spinning off one or more business units.^{1,2} Spin-offs lead to the formation of a new public company and provide shareholders, including managers, with the opportunity to alter their stock holdings within the separate entities. Given the nonexistence of prior trading history and a lack of financial information, outside investors face great uncertainty in valuing the spun-off firm, especially relative to the firm's management. Allen (2001) finds that subsequent to spin-offs, insiders of the spun-off firm are substantial purchasers of the spin-off's stock; he also shows that these trades earn large long-term abnormal returns.³ Allen's findings suggest that managers could maintain their information advantage even after the spin-off completion. In other words, the required disclosure associated with the spin-off (e.g., prospectus) may not adequately resolve information asymmetry between insiders and outside shareholders.

There are two possible scenarios in which managers could misinform investors about the future fundamentals of the spun-off firm. They might manipulate quantitative information (e.g., unaudited income numbers) provided in the spin-off prospectus. In addition, as Huang, Teoh, and Zhang (2014) suggests, managers might manipulate tone of narrative disclosure to affect investors' perception regarding the spin-off. In this study, I focus on the tone management in the spin-off prospectus. Following previous studies, I assume that the tone is jointly determined by firm fundamentals and managerial incentives (e.g., Davis, Ge, Matsumoto, and Zhang, 2013;

¹ Recent examples of diversified companies spinning off their businesses include Motorola (Mobility Holdings), Marathon Oil (Petroleum Corp), Fortune Brands (Home & Security Inc.), Marriot International (Vacations Worldwide), Conoco Phillips (Phillips 66), Kraft Foods (Foods Group), and eBay (Paypal Holdings).

² Prior studies examining the average long-term stock returns of spun-off firms do not provide robust evidence against the efficient market hypothesis (EMH). See Cusatis, Miles, and Woolridge (1993), Desai and Jain (1999), and McConnell, Ozbilgin, and Wahal (2001) for further evidence on post-spinoff abnormal stock returns.

³ Allen (2001) documents that insider transactions in the spun-off firms completed during the first 12-month period following spin-offs yield an average excess return of 36.3% in the ensuing 12 months.

Huang, Teoh, and Zhang, 2014), and examine whether the portion of the tone after controlling for firm fundamentals is associated with insider trading in the spun-off subsidiary.

There are several benefits of investigating tone management relative to earnings management. First, holding consolidated earnings constant, manipulating a spun-off unit's earnings downward or upward requires over- or under-estimation of earnings of the parent firm, which is unnecessary in manipulating the tone of the disclosure describing the unit to be spun off. Second, managers have discretion over the tone of the qualitative presentation of the underlying performance. As management has wide latitude in the tone of the disclosure, linguistic tone can be a potential tool for managers to mislead investors by obscuring firm fundamentals (Huang, Teoh, and Zhang, 2014). Third, managers arguably believe that expected legal costs associated with the manipulation of the tone are lower than those associated with the manipulation of earnings numbers. Although there are constraints on managers' ability to make a material misstatement in connection with the purchase or sale of a security (e.g., securities laws, accounting regulations), qualitative information is a "softer" type of disclosure that may be ambiguous enough to make verification of materiality difficult. Prior accounting literature shows that optimistic disclosure tone can be regulated by litigation risk, especially when insiders sell the firm's equity (Rogers, Van Buskirk, and Zechman, 2011); however, it is still a debated topic in the legal community whether managers are legally liable for qualitative disclosures (e.g., O'Hare, 1998; Hoffman, 2006).

Although managers may believe that tone management is less constrained than earnings management, it is still unknown whether tone management is effective in the spin-off setting. A substantial body of accounting literature shows that the tone of qualitative disclosure

systematically affects financial market participants' trading decisions.⁴ However, there is no research examining whether and to what extent the capital market reacts to the linguistic tone of the spin-off prospectus. Therefore, I examine how variation in this tone is related to the profitability of insider trading in the spun-off subsidiary, as well as whether tone is associated with insider trading.

For a spin-off to be approved by the SEC, the parent firm must provide the market with adequate information through filing the registration of securities form (Form 10) with the SEC. The spin-off prospectus included in Form 10 contains ample intangible information in the management discussion of operating results, liquidity and capital resources, and potential risks associated with the unit to be spun-off. Suppose that managers of a soon to be spun-off firm plan to buy their firm's stock following the spin-off, based on their beliefs that the firm would outperform market benchmarks. Although accounting regulations and securities laws require managers to report all material information, they can arguably manipulate the rhetoric employed in the prospectus, i.e., either refrain from using positive words or choose to use more negative words in order to mask the upside potential of their firm. A tone level that is incommensurate with the quantitative information will make it harder for investors to determine the true value of the spun-off firm.⁵ Because making good news hard to extract deflates market prices only temporarily, the opportunity to purchase the undervalued shares should be also temporary; nonetheless, purchases would be profitable in the long-run as the market discovers the true value of the spun-off firm.

⁴ Section 2 discusses previous literature. See also Li (2011) for surveys of this literature.

⁵ This view is consistent with the "Incomplete Revelation Hypothesis (IRH)" (Bloomfield, 2002), which asserts that information is less completely revealed in market prices when the information is more costly to extract from public data.

The main goal of this study is to determine whether the tone of the spin-off prospectus could be used by insiders to enhance their trading profits. I define tone as the extent to which managers frame the unit to be spun-off in a favorable manner. The main variable of interest is the residual (or abnormal) component of the tone after controlling for firm fundamentals. If managers neutrally present their true beliefs about the spin-off, the variation in the prospectus tone might be positively associated with the variation in managers' beliefs, proxied by their subsequent trading patterns. However, if opportunistic managers prefer to purchase (sell) the firms' shares at a lower (higher) price, they would use a more pessimistic (optimistic) tone, even though they have positive (negative) expectations about the spin-off. Therefore, in the main analysis, I test whether the tone conveyed in the spin-off prospectus is consistent with the insider trading pattern in the spun-off firm. I further investigate whether the abnormally negative (positive) tone of the spin-off prospectus could allow managers to purchase (sell) the shares at a lower (higher) price than the price level that would have been set without manipulation.

To test this hypothesis, I collect a sample of 139 spin-offs completed during 1995-2011. I apply textual analysis to the Management's Discussion and Analysis (MD&A) section in the spin-off prospectus to determine the tone of the document written by management. The empirical findings show that the tone of the spin-off prospectus is negatively related to both net insider trading value and the number of net shares traded by insiders following the spin-off, controlling for other determinants of the tone suggested by prior literature (e.g., Li, 2010; Davis, Ge, Matsumoto, and Zhang, 2013). Even though the negative associations exist for both insider sales and purchases, I report that 85.3% of executive trades are purchases during the three-month period immediately following spin-offs, consistent with Allen (2001). This observation starkly contrasts with the findings from other settings, in which insiders are on average net sellers of

their firm's stock. I also document that spin-offs in which executives are net buyers have higher long-run stock returns than other spin-offs. Further, insider buying is even more profitable when it is combined with a negative prospectus tone. In other words, when insiders would purchase the spun-off firm's stock, the negative prospectus tone might contribute to the market's delayed reaction to the spin-off.⁶

I conduct additional tests to examine whether the previous roles of current spun-off firm insiders in the parent company during the spin-off process affect the relation between tone and insider trading pattern. I predict that the negative relation between tone and insider trading exists only for insiders who were in a position to possess information about the tone manipulation. I divide the full sample of executives of the spun-off subsidiaries into two groups based on whether they have also worked as executives in the parent company prior to the spin-off. Consistent with my prediction, there is a negative relation between tone and insider trading only for the pre-spin-off executives who are more likely to be associated with the tone manipulation in the prospectus.⁷ The tone of the prospectus is not related to the trades of insiders who were newly hired from outside the parent or were promoted from within the parent to an executive position at the subsidiary during the spin-off process. This evidence supports the finding that top managers can use their control over the tone of the prospectuses in order to increase their trading profits.

Another set of analyses investigates whether the link between tone and insider trading is contingent on opportunities to manipulate the tone of the spin-off prospectus. When the business of the unit to be spun off is unrelated to that of the parent, analysts who follow the parent

⁶ A maintained assumption underlying this argument is that short-term returns would be higher for the spin-offs with negative tone than returns for the firms absent the negative tone.

⁷ I further split the pre-spin-off executives group in the parent and find the negative relationship between tone and insider trading only for trades of CEOs, CFOs, and General Counsel. I discuss the detail of the analysis in Section 2.4.

company are likely to pay little attention to the spin-off, because they are less likely to have extensive expertise in the spun-off unit's industry (Gilson, Healy, Noe, and Palepu, 2001; Feldman, Gilson, and Villalonga, 2012). In addition, when the relative size of the unit to be spun off is small, the spin-off is less likely to attract wide attention in the market. In these cases, managers' opportunistic disclosures are less likely to be discovered by external parties (e.g., analysts or the media). I find that the negative relation between tone and insider trading exists only in the spinning off of an unrelated business, in the spinning off of a smaller unit, and in the spinning off of a unit that subsequently receives little analyst following.

There are two alternative explanations for the negative association between the tone of the spin-off prospectus and insider trading pattern. First, the tone of the prospectus reflects underlying economics of the subsidiary to be spun off and managers could then decide to trade their shares for some reasons. Second, managers could have decided to trade their shares even before writing the spin-off prospectus. With knowledge of a forthcoming trade, managers could manipulate the tone in an effort to enhance their trading profits. However, since the timing of the decision to trade managers' shares is unobservable, it is challenging to clearly distinguish between the two alternative explanations.⁸

Recent studies investigate an active managerial role in narrative disclosure to affect investors' perception in various settings such as SEO, M&A, and stock option grants (Huang, Teoh, and Zhang, 2014) or to increase insider trading profit after earnings announcements (Tama-Sweet, 2014). My paper utilizes the spin-off setting and is unique in examining tone as a tool to increase insider trading profit for several reasons.

⁸ In Section 6.1., I discuss alternative motivations for managers to trade their shares (e.g., institutional selling pressure), but the results do not support the first alternative, thereby lending credence to the second alternative.

First, the spin-off setting allows me to distinguish tone determined by managerial incentives from tone driven by disclosure characteristics inherited from the parent firm. A spin-off prospectus includes information about the unit to be spun off, but it is written by parent company management, which is also involved in drafting the parent company's filings. Thus, I use the tone of the parent company's 10-K filing as an important control variable for the tone of the spin-off prospectus.

Second, similar to initial public offerings (IPOs), spin-offs lead to the formation of a new public company whose historical information has been largely unknown to outside market participants. Opinions about the new public company's future performance can vary widely, strengthening managers' superior knowledge about the firm. Even among managers, there is variation in their information advantage, depending on the respective roles in the parent company prior to the spin-off. These differences enable me to analyze whether the hypothesized relation between tone and insider trading varies with current insiders' backgrounds before the spin-off.

Third, some factors that distinguish spin-offs from IPOs make disclosure decisions in spin-offs more clearly aligned with insider trading profit than they are in IPOs. Spin-offs are not motivated by a need to raise external capital. Instead, the subsidiary's shares are simply distributed to the parent's shareholders without involving underwriters during the spin-off process. In other words, disclosure decisions in spin-offs are unencumbered by other factors prevalent in IPOs, e.g., the trade-off between minimizing underpricing and avoiding under-subscription, which make issuers' disclosure incentives more complex. Additionally, unlike IPOs, the absence of a lock-up agreement in the spin-off setting allows insiders to trade immediately following the spin-off distribution.

Overall, the empirical results suggest that the linguistic tone of the spin-off prospectus is a potential channel to increase the profitability of the trades made by insiders following the spin-off. This study contributes to the literature in two ways. First, I extend the spin-off literature by examining whether insiders disclose information in a strategic manner to maintain their information advantage over outside investors. I report that the tone of the spin-off prospectus conveyed by managers is contrary to their subsequent trading patterns and such trading generates abnormal profit in the long-run when it is combined with abnormal disclosure tone. Second, I add to the literature investigating an active managerial role in narrative disclosure by introducing a new scenario through which managers provide a pessimistic tone to disguise upside potential of a spun-off firm, but end up being buyers for their own account immediately following the spin-off. Therefore, spin-offs provide a setting in which the way of manipulating disclosure tone has received limited attention from the researchers and regulators than other settings, wherein most cases managers have incentives to provide more optimistic disclosures in order to create profitable selling opportunities (e.g., earnings announcements).

The remainder of the paper proceeds as follows. Section 2 provides an overview of related literature, and Section 3 develops the hypotheses of the study. Section 4 details the sample and research design, and Section 5 reports the main empirical results. Section 6 presents the supplementary analyses and Section 7 concludes.

2. LITERATURE REVIEW

2.1. Spin-off Literature

Some theoretical studies have explored motivations for spin-offs. Aron (1991) argues that a spin-off can improve the equity incentive scheme offered to divisional managers because the

stock price of the spun-off unit provides a much cleaner signal of managerial productivity than when the unit belongs to the parent. Habib, Johnsen, and Naik (1997) and Nanda and Narayanan (1999) show that by spinning-off an undervalued unit, the market value of the combined firm would be increased because the market can accurately process information about the spun-off subsidiary, which previously has been less visible to the market (i.e., “unlock” the hidden value).

A number of empirical studies show a positive equity market reaction to spin-off announcements (Hite and Owers, 1983; Miles and Rosenfeld, 1983; Schipper and Smith, 1983). Non-mutually exclusive explanations for the value creation include improved operating performance by focusing on the core business (Hite and Owers, 1983; Daley, Mehrotra, and Sivakumar, 1997), greater investment efficiency by reducing agency problems (Gertner, Powers, and Scharfstein, 2002; Ahn and Dennis, 2004), and achievement of appropriate value by improving the information environment (Krishnaswami and Subramaniam, 1999).

There is also empirical evidence on the long-term value creation of spin-off firms in addition to the short-term abnormal returns at the announcement date. Cusatis, Miles, and Woolridge (1993) find that the spun-off subsidiaries and the parents experience significantly positive abnormal returns compared to matching firms up to three years following the spin-off. They document that the average excess return to parent firms and spun-off subsidiaries for the 24-month period following the spin-off is 26.7% ($t=2.55$) and 25.0% ($t=2.43$), respectively. Desai and Jain (1999) also find that firms involved in a focus-increasing spin-off outperform market benchmarks in the long run. These findings indicate that investors have not fully anticipated the total value created by the spin-off at the announcement date. McConnell, Ozbilgin, and Wahal (2001) investigate whether a trading strategy based on Cusatis, Miles, and Woolridge (1993) would have earned excess returns on an ex-ante basis. They argue that the

empirical finding is sensitive to 1) the stock performance benchmarks of the parent firm and the spun-off subsidiary (e.g., a size and book-to-market matching portfolio, the Fama and French (1993) three-factor model), 2) the holding period of buy-and-hold returns, and 3) the treatment of a few outliers that perform extremely well. They conclude that “post-spinoff stock returns do not provide robust evidence against the semistrong form of the efficient market hypothesis.”

2.2. Information Environment in Spin-off

Previous literature in accounting and finance provides evidence that a spin-off permanently improves the information environment of involved firms. Krishnaswami and Subramaniam (1999) find that firms that engage in spin-offs have higher levels of information asymmetry than their control firms in the same industry and document a substantial decrease in information asymmetry following spin-offs. Gilson, Healy, Noe, and Palepu (2001) also report increased coverage by analysts who specialize in the subsidiaries’ industries after stock breakups and show that there are 30-50% improvements in analyst forecast accuracy for both parent and subsidiary firms.⁹

While these studies focus on the long-term informational effect of spin-offs, Allen (2001) suggests that insiders, during a short time period, use private information to determine whether spun-off firms are likely to outperform or underperform market benchmarks. He documents that insiders in spun-off subsidiaries extensively buy stock within six months following the spin-off and that their trades result in substantial excess returns.¹⁰ One explanation for this active insider buying, suggested by Allen, is that insiders may hold favorable information regarding spun-off

⁹ Stock breakups include spin-offs, carve-outs, and tracking stocks.

¹⁰ I replicate the empirical work of Allen (2001) confirming that the empirical finding of superior stock performance of insiders’ trades in the spun-off subsidiary is robust to alternative methods for tests of long-run abnormal returns. I use the calendar-time portfolio approach advocated by Lyon et al. (1999) and Mitchell and Stafford (2000), and implemented using a spin-off sample by McConnell et al. (2001). Allen (2001) also reports that insiders in parent firms earn abnormal returns of 7.1% during the same period, but these gains do not persist over extended time periods.

firms that is not fully revealed to market participants at the time of the spin-off.¹¹ Feldman, Gilson, and Villalonga (2013) analyze the content of analyst reports written about companies that have announced spin-offs and find that analyst research pays limited attention to the unit to be spun off. Although analysis of spin-off firms is associated with improved forecast accuracy, only 26.4% of analyst reports discuss the rationale for the spin-off and only 19.5% include EPS forecasts for the subsidiary. Overall, the information conveyed to the market through the spin-off prospectus plays a critical role in reducing the level of information asymmetry between managers and outside investors regarding the entity to be spun-off.

2.3. Strategic Disclosure and Insider Trading

Several studies find that insiders could either strategically choose the timing of trades around disclosures (Noe, 1999) or change the frequencies of voluntary disclosures around their trades (Cheng and Lo, 2006) to maximize their wealth. Rogers (2008) tests the effects of insider trading on disclosure choice by examining the decision over which the manager actually has discretion – the quality of the disclosure. He finds that managers provide lower (higher) quality disclosures before insider purchasing (selling) to maintain an information advantage (to reduce the litigation risk). More recently, Tama-sweet (2014) shows a positive association between changes in the optimistic tone of earnings announcements and CEOs' subsequent equity sales. In short, these studies suggest that insider trading is an important incentive for strategic disclosure.

In the spin-off setting, insider purchases consist of a significant portion of open market trades occurring following spin-offs. Previous studies show that the vast majority of lawsuits based on material misstatements before insider trading include insider selling allegations, especially after the enactment of the Private Securities Litigation Reform Act of 1995 (e.g.,

¹¹ Other explanations of the active insider buying pattern are 1) the opportunity to purchase undervalued shares created by institutional selling and 2) the fact that stock option-related selling by insiders does not occur immediately following a spin-off.

Johnson, Nelson, and Pritchard, 2007; Rogers, 2008; Rogers, Van Buskirk, and Zechman, 2011).¹² The SEC reviews of corporate filings can be another important mechanism limiting managers' opportunistic disclosures, but there is no SEC review that comments on an overly pessimistic tone, while SEC comment letters often request filers to revise their overly optimistic, positive, or promotional tone.¹³

2.4. Qualitative Disclosure

In the context of prospect theory, Tversky and Kahneman (1986) suggest that framing financial performance using more or less favorable terms influences investors' perceptions of the results relative to reference points. Prior empirical literature has provided evidence that the tone of various corporate disclosures is positively associated with the market reaction to the disclosure; this can be seen in press releases (Henry, 2008; Davis, Ge, Matsumoto, and Zhang, 2013), MD&As (Li, 2010; Feldman, Govindaraj, Livnat, and Segal, 2010), conference calls (Price, Doran, Peterson, and Bliss, 2012), and IPO prospectuses (Ferris, Hao, and Liao, 2012; Loughran and McDonald, 2013).

Some studies further suggest that managers use the tone to systematically influence investors' judgments by obscuring firm fundamentals (Davis and Tama-Sweet, 2012; Huang, Teoh, and Zhang, 2014). For example, Huang, Teoh, and Zhang (2014) propose the plausibility of "tone management" in earnings press releases by demonstrating that an abnormal level of tone is related to managerial incentives to manipulate investors' perceptions upward (in seasoned equity offerings or mergers and acquisitions) or downward (in stock option grants). They first find that abnormal tone negatively predicts future performance, rejecting the null hypothesis that

¹² Johnson et al. (2007) find that 79.7% of post-PSLRA lawsuits contain insider trading allegations for a sample of high technology firms, while 38.0% of pre-PSLRA lawsuits contain such allegations.

¹³ Based on my research using Audit Analytics, examples of firms that received SEC comment letters requesting revisions of too optimistic tones in their filings include Noranda Aluminum Holding Corporation (S-1, 1/15/2010), Execute Sports Inc. (SB-2, 6/16/2005), and iParty Corporation (10-K, 3/25/2005).

tone informs investors. Then they test whether managers exploit tone opportunistically to misinform investors instead of revealing useful private information. They demonstrate whether firms facing incentives to mislead investors resort to opportunistic tone management. My paper is in the same spirit as in Huang, Teoh, and Zhang (2014) on testing whether tone determined by managerial choice is actually associated with some events where managers have incentives to manipulate the tone. My paper specifically focuses on insider trading in a spun-off subsidiary among those incentives to engage in tone management.

3. HYPOTHESES DEVELOPMENT

A spin-off provides managers with the opportunity to trade the parent's or the subsidiary's shares as independent entities based on their expectations. Managers who are involved in the spin-off process are likely to possess superior knowledge about the nature of the spin-off and the prospects of investment projects in the spun-off subsidiaries. Although they have incentives to exploit this private information to earn excess returns from their trades following the spin-off, accounting regulations and insider trading rules act as constraints to these opportunistic behaviors. Even though managers need to report all material information through the spin-off prospectus, they actually have discretion over the tone of the prospectus. Tone should vary with the content of the disclosure in a neutral presentation of the quantitative information. The residual component of the variation in tone could be the output of the managers' discretionary control over the tone and is the main variable of interest in this study.¹⁴

Previous studies provide evidence that the tone of the qualitative document affects financial market participants' trading decisions. If managers wishing to profit from their trading

¹⁴ In general, giving greater emphasis to the selected benchmarks allows either favorable or unfavorable comparisons and this affects the tone. Another way to create either positive or negative tone is to offer positive or negative comments about future performance (Henry, 2008).

in the spun-off subsidiary believe that the tone of the prospectus can alter investors' expectations of the spin-off, they have an incentive to manipulate the tone to mislead investors. Specifically, managers can use more negative (positive) words in the spin-off prospectus in order to purchase (sell) the spun-off subsidiary's shares at a lowest (highest) price as possible. Therefore, the first hypothesis is the following (stated in the alternative form):

H1: *The tone conveyed in the spin-off prospectus is negatively related to net insider trading (purchase vs. sale) following the spin-off.*

A necessary condition for this hypothesis to support the argument that the tone can be used by insiders to increase profits from their trades is that these insiders believe that the tone would systematically influence stock price of the spun-off subsidiary.

The hypothesized tone management story would be less plausible if the tone is associated with insider trading regardless of the likelihood that an insider is able to affect the tone or possesses information about any intention behind the tone of the prospectus. An example of an insider who is less likely to be aware of the strategic purpose behind the tone conveyed in the prospectus is an executive vice president of a spun-off subsidiary who was newly hired from outside the parent company. If the tone is negatively related with trades of executives of the spun-off subsidiary only when they have also been executives in the parent prior to the spin-off, this supports the main argument that the tone is used by insiders to enhance their trading profits. However, if the negative relation between tone and insider trading holds across all sub-samples of insiders, this finding can be interpreted either that insider trading being simply a response to the market reaction to the spin-off, or that information advantage about tone management spills

over into other insiders regardless of whether they have been executives of the parent company during the spin-off process.

Even among the executives of the parent company prior to the spin-off, only some of them might be directly responsible for drafting the spin-off prospectus. One document, published in *Practical Law*, reports that, in general, the parent company's top management and counsel and the spin-off company's top management are responsible for the spin-off prospectus (see Appendix II for details about the spin-off process).¹⁵ According to other documents about the IPO process, the top management (especially CEO and CFO) and the company counsel collaborate on the first draft of the registration statement.¹⁶ The counsel assists the executives with preparation and revision of the prospectus, looks over the filing process, and responds to the SEC comments. Other members of the management team serve important, but less visible roles in drafting the prospectus.¹⁷ On the one hand, regardless of the ability to affect the tone, as long as executives have superior knowledge about the spin-off, they might infer the strategic purpose behind the disclosure by discovering an inconsistency between their evaluations about the spin-off and the tone actually conveyed by the management. On the other hand, if executives who could directly affect the tone of the prospectus (e.g., CEO, CFO, and General Counsel) exclusively possess the information about the strategic disclosure, the tone of the prospectus

¹⁵ "Spin-offs: Overview," *Practical Law*, http://www.sullcrom.com/files/Publication/48c0c4a3-1963-4fb0-818d-b61d3f463764/Presentation/PublicationAttachment/09f50d3c-9302-40a2-8f35-b78b44581cf8/September2010_SpinOffs.pdf

¹⁶ "The Initial Public Offering Handbook: A Guide for Entrepreneurs, Executives, Directors, and Private Investors," *Merrill Corporation*, <http://www.merrilldirect.com/cps/rde/xbcr/merrilldirect/AllisonHallMcsheaNoCrop.pdf>, "An Overview of the IPO Process," *Practising Law Institute*, http://www.pli.edu/product_files/EN0000000050080/89220.pdf.

¹⁷ For example, the controller supports the CFO in creating the company's financial model and forecasts. The human relations officer assists in the development of public company compensation arrangements. Public relations or investor relations personnel help manage the public communications. The board of directors oversees the preparation of the prospectus, authorizes the filing of, and reviews and comments on, the Form S-1, but it would not be typical for directors to attend drafting sessions.

would be negatively associated only with the trades of these executives. Overall, the second hypotheses are the following (stated in the alternative form):

H2a: There is a negative relation between the tone of the spin-off prospectus and net insider trading only for the executives of the subsidiary who have worked as executives in the parent prior to the spin-off.

H2b: There is a negative relation between the tone of the spin-off prospectus and net insider trading only for the executives of the subsidiary who have worked as CEO, CFO, or General Counsel in the parent prior to the spin-off.

Finally, I examine whether the hypothesized relation between tone and insider trading depends on cross-sectional variations associated with opportunities to trade based on mispricing created by tone manipulation. The opportunity to manipulate the tone of the spin-off prospectus should be related to the information environment of the spun-off firm, i.e., the extent to which the mispricing is discovered by external market participants. Information about the spin-off can be disseminated to outside investors through analyst reports or business press. Gilson, Healy, Noe, and Palepu (2001) note that analysts following the parent company are less likely to have extensive expertise in the industry of the unit to be spun off, if it is unrelated to the parent's industry.¹⁸ The relative size of the unit compared to that of the whole parent company might also be associated with the degree of attention received from the media. Overall, the third hypothesis is the following (stated in the alternative form):

H3: There is a negative relation between the tone of the spin-off prospectus and net insider trading only when the information environment for the spun-off firm is poor.

¹⁸ For example, Westinghouse spun off its industrial asset in 1997, and became a pure broadcasting entity, with CBS as its flagship property.

4. SAMPLE AND RESEARCH DESIGN

4.1. Sample

The initial spin-off sample is obtained from the SDC Mergers and Acquisitions Database. I exclude spin-off transactions which are withdrawn, two-step spin-offs, and spin-offs that are in regulated industries. I also limit the sample to tax-free spin-offs to ensure that any spin-offs where the distribution is not pro-rata (and therefore the existing ownership structure is not exactly replicated) are excluded from the sample.¹⁹ I identify an initial sample of 466 spin-offs completed between 1995 and 2011. The following data selection criteria are then applied to the initial sample:

- 1) I verify that each transaction in the data is indeed a spin-off by checking news articles from Factiva, Google, or the company's Investor Relations Web site. Transactions involving tracking stock, stock splits, or equity carve-outs do not fall within the definition of spin-offs and are excluded.
- 2) Some spin-offs are motivated by a big restructuring plan to facilitate the parent's or the subsidiary's merger with some other firm. I exclude spin-offs if other corporate events (e.g., merger-related stock issuances) occur within a year around the spin-offs. I do this following prior literature because measuring the inherited ownership structure would be noisy for these transactions (Patro, 2008).
- 3) An announcement date and ex-date for the spin-off must be available. Spin-off ex-date reported in the SDC is within 30 days of CRSP price start date.

¹⁹ According to Section 335 of the Internal Revenue Code, to be eligible for tax-exempt status, (1) a parent firm must distribute at least 80% of the outstanding shares of a subsidiary to its existing shareholders and any shares retained by the parent firm must not constitute practical control of the subsidiary, (2) the separating subsidiary should have been in active operation for at least five years and have been owned, directly or indirectly, by the parent firm for at least five years, and (3) the parent firm and the separated subsidiary should each be engaged in the active conduct of a trade or business immediately after the distribution.

For the main analysis, I collect spin-off prospectuses, 10-K reports of the matched parents for the last fiscal year prior to the spin-off, and 10-K reports of the spun-off subsidiaries for the first fiscal year following the spin-off from the SEC Edgar Web site. I analyze the prospectus included in the final version of amended filings (10-12B/A or 10-12G/A) before the spin-off effective date.²⁰ I then extract non-numeric information of the MD&A sections in the prospectuses and 10-K filings. I collect historical accounting data for the unit prior to the spin-off from the prospectus. I obtain accounting data for the spun-off subsidiary from COMPUSTAT, stock price data from CRSP, and analyst forecast data from IBES. I also collect insider trading data from Form 4 filings through LexisNexis Academic. The final sample in the main analysis includes 139 spin-offs. Table 1 summarizes the sample selection process.²¹

4.2. Classification of Insiders

The underlying assumption of the classification is that insiders in different positions have different responsibilities for preparing spin-off transactions, thus they have heterogeneous abilities to obtain nonpublic information regarding the spin-off or to affect the tone of the spin-off prospectus. To test the first hypothesis, I define insiders as the team of executives of the spun-off subsidiary. For comparison purposes, I also define non-executive insiders as those who file with the SEC a statement of ownership but are not executives of the firm.²² Next, to test the second hypothesis, instead of treating the executive group as a homogeneous entity, I divide the

²⁰ The narrative explanation in the MD&A section is not significantly revised over the multiple amendments. Loughran and McDonald (2013) also confirm that the tone of the final IPO prospectus (Form 424) is not significantly different to that of the first document (S-1 filings).

²¹ Although I obtain the initial spin-off sample completed between 1995 and 2011 from the SDC, among spin-offs completed in 1995, electronic prospectus filing is available for only one spin-off in the Edgar Web site. I use 136 spin-offs in the multivariate analysis because a control variable, earnings volatility, requires historical earnings operating income data for the past five years prior to the spin-off, but the information for three spun-off firms is not available. There is no difference in main result with using only 136 spin-off samples.

²² The definition of “Executives” in this paper includes CEO, CFO, COO, CTO, CIO, Chairman, President, General Counsel, Executive Vice President, and Senior Vice President. “Non-executive insiders” include lower-level officers, outside directors, block-holders, and other affiliated persons.

full sample of executives of the spun-off subsidiary based on the role of each individual insider during the spin-off process. Specifically, I classify the executives of the spun-off subsidiary into those who have also worked as executives in the parent prior to the spin-off and those who have not. To do this, I identify executive's pre-spin-off roles in the parent company by checking every single insider's background information which is available in the spin-off prospectus.

Table 2 presents the number of insiders in each group categorized by pre- and post-spinoff roles. The full insider trading sample contains open market sales and purchases by 595 insiders. The breakdown of the insiders gives 225 current executives in the subsidiary (*EXEC*) and 370 non-executive insiders (*NONEXEC*). 164 of the current executives have also worked as executives prior to the spin-off (*EPAR*), while 61 of the current executives were newly hired from outside the parent or were promoted from within the parent to an executive position during the spin-off process.²³ I further divide the group of these 164 executives into two groups based on whether they have been one of CEO, CFO, or General Counsels (*TEPAR*, N=95) or they have been other executives in the parent (*NONTEPAR*, N=69).

4.3. Measurement of Insider Trading

The primary measure of insider trading is the signed net trading value, which is at a subsidiary firm-level. For the sensitivity analysis, I also measure the signed number of net shares traded. The signed net trading value is calculated as the sum of the value, in thousands of dollars, of insider purchases minus the sum of the value of insider sales. The signed number of net shares traded is also calculated as the sum of the number of shares purchased minus the sum of the number of shares sold. Transactions for each insider are summed during a calendar month. Since

²³ Examples of the 164 executives include 1) Sanja Jha, who was appointed as CEO of the spun-off subsidiary (Motorola Mobility Holdings Inc.) from his former job as co-CEO of the parent (Motorola Inc.) and 2) Christopher Klein, who continued to serve as CEO of the spun-off subsidiary (Fortune Brands Home & Security Inc.) after holding the same position prior to the spin-off from the parent (Fortune Brands Inc.).

there is a high skewness in trading value and number of shares, I use log-transformation of insider trading data.²⁴ The log-transformation of net trading value (shares) takes the sign of net trading value and its magnitude is the natural logarithm of one plus the absolute value of net trading value (shares) in thousands. Accordingly, the insider trading variables for the subsidiaries with no insider trading are zero, and those for the subsidiaries with net insider buying (selling) take positive (negative) values. The variable *VALUE (SHARE)* is the log-transformation of net trading value (shares). To indicate that the trades are made by a specific insider group, I add the group name right to the variable. For example, *VALUE_EXEC_i* represents the log-transformation of net trading values of the executives in the spun-off subsidiary *i*.

I select a three-month trading window in the main analyses. The underlying assumption is that managers with trading incentives might execute their *ex ante* trading plans before temporary mispricing created by the manipulation disappears. Following the spin-off, the subsidiary company provides periodic financial information through 10-Qs or 10-Ks as an independent entity. Analysts also start to follow the subsidiary firm and provide useful information to outside investors. In an untabulated analysis, I find that stock performance of insider trading is abnormally profitable when the transactions are made during the three-month period, while the average abnormal return to insider trading occurring during the four to six-month period is not significant. To ensure that my conclusions are not influenced by this design choice, I use an alternative trading window, the period between the spin-off distribution date and the subsidiary's first periodic filing month (10-Q or 10-K). The average number of days between the spin-off distribution date and the first filing dates is 50.3.

²⁴ As a robustness test, I use the raw insider trading variables winsorized at the 5th and the 95th percentiles. Results with the winsorized variables are consistent with my main findings.

4.4. Measurement of Prospectus Tone

The level of optimistic tone is calculated based on non-numeric words included in the MD&A section in the spin-off prospectus. I focus on the tone of the MD&A because managers might perform an integral role in the information generation process through the MD&A, which is intended to reflect the management's assessment of the current financial status and future prospects of the firm. Previous research examining IPO prospectuses finds the strongest association between the content of the MD&A and IPO pricing among main subsections in the prospectus (e.g., Hanley and Hoberg, 2010).²⁵ I evaluate whether the manager's language in the MD&A is positive or negative using frequency counts of "positive" and "negative" words. The structure of the MD&A in the spin-off prospectus is similar to that of the IPO prospectus or the 10-K filing. Thus, I use Loughran and McDonald's (2011, hereafter LM) word list, which is mainly used by previous research to analyze language in corporate filings.²⁶ In Appendix III, I provide an example of the MD&A section in a spin-off prospectus, specifying the positive and the negative words included in the LM's word list. The primary measure of optimistic tone of the MD&A in the spin-off prospectus, *TONE_SPIN*, is calculated by the following equation:

$$TONE_SPIN = \frac{(Number\ of\ positive\ words - Number\ of\ negative\ words) * 100}{Number\ of\ total\ words\ in\ the\ MD\&A\ section\ in\ the\ spin-off\ prospectus} \quad (1)$$

The assumption behind this measure is that the level of optimistic tone is jointly determined by underlying economics and managerial incentives. For the main empirical analysis of this paper, the model of tone should control for level of fundamentals that could mainly generate an observed level of tone.

²⁵ Hanley and Hoberg (2010) and Ferris et al. (2012) focus on the four main sections in the IPO prospectus: "Summary," "Risk Factors," "Use of Proceeds," and "MD&A."

²⁶ I thank Bill McDonald for sharing the word lists, which are available at: http://www3.nd.edu/~mcdonald/Word_Lists.html

4.5. Main Regression Model

To evaluate the hypothesis that the tone of the MD&A section in the spin-off prospectus is negatively related to the insider trading following the spin-off, I estimate the incremental effect of insider trading on the tone, holding other factors that could affect the tone of the MD&A. To test **H1** and **H2**, I estimate the following equation:

$$TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_NONEXEC + \beta_3 TONE_PAR10K + \beta_4 ROA_{t-1} + \beta_5 RET + \beta_6 SG + \beta_7 LSIZE + \beta_8 ROA_t + \beta_9 RETVOL + \beta_{10} EARNVOL + \beta_{11} NSEG + Industry\ Dummies + \varepsilon \quad (2)$$

The dependent variable, *TONE_SPIN*, is the level of optimistic tone of the MD&A section in the spin-off prospectus. The main independent variable, *VALUE_EXEC*, is the net trading value of executives of the spun-off firm measured during the three-month period following the spin-off. I include a variable, *VALUE_NONEXEC*, to compare executives' trading patterns with those of non-executives insiders. **H1** predicts the negative relation between the tone and the executives' trading, so the estimated coefficient on *VALUE_EXEC* would be negative. **H2a (H2b)** predicts that the tone of the spin-off prospectus is negative related to the trades of executives of the spun-off firm only when the executives have also worked as executives (CEO, CFO, or General Counsel) in the parent firm prior to the spin-off. Therefore, to be consistent with **H2a** and **H2b**, the estimated coefficients on *VALUE_EPAR* and *VALUE_TEPAR* should be negative, while those on *VALUE_NONEPAR* and *VALUE_NONTEPAR* are not different from zero, respectively.

The first control variable is the level of optimistic tone of the MD&A sections in the parent firms' most recent 10-K reports (*TONE_PAR10K*). This variable is to control disclosure characteristics inherited from the parent firm to the subsidiary firm.

I then control for operating performance, stock performance, growth opportunity, and size of the unit to be spun-off. The operating income of the unit to be spun off during the last fiscal year prior to the spin-off (ROA_{t-1}) captures the current operating performance. The parent firm's annual abnormal returns (RET) during twelve months ending the month prior to the prospectus filing captures current firm performance that goes beyond earnings numbers (e.g., information about a new project). To control for the fact that growth firms face more uncertain future economic conditions, I include sales growth of the unit to be spun off (SG) by calculating percentage change in total sales during the last fiscal year prior to the spin-off relative to the previous year. The size of the subsidiary ($LSIZE$) is to reflect the prediction that larger firms may have higher political cost and thus use more cautious statements.

Following prior literature (Li, 2010; Davis, Ge, Matsumoto, and Zhang, 2013), I include additional firm-specific determinants of the tone of the MD&A. I first include the operating income of the spun-off subsidiary during the first fiscal year (ROA_t) to capture the impact of managers' future prospects on the tone. I also include the monthly return volatility ($RETVOL$) for twelve months prior to the prospectus filing and the volatility of earnings ($EARNVOL$) for the previous five years prior to the spin-off to control for the impact of uncertainty on the tone. The number of segments in the subsidiary ($NSEG$) captures the complexity of operations. The spun-off subsidiary industry fixed effects are also included to control for static industry-specific factors that might impact the tone. Definitions of all variables are provided in Appendix I.

Next, I evaluate the hypothesis that there is a negative relation between tone and insider trading only when there are greater opportunities to manipulate the tone of the spin-off prospectus. **H3** predicts that the negative relation between tone and insider trading holds only in

the spin-offs with poor information environment. To test the hypothesis, I estimate the following equations:

$$TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_EXEC * INFO_Dummy + \beta_3 INFO_Dummy + \gamma X + \varepsilon \quad (3)$$

where X is a vector of covariates that include parent firm and spin-off subsidiary-specific control variables used in the model (2) and $INFO_Dummy$ is an indicator variable that is equal to one if the information environment of the spun-off firm is good and is equal to zero otherwise. I use three different measures for the information environment of the spun-off firm. First, the quality of analyst reports written about the spin-off is influenced by whether the business of the spun-off unit is related to that of the parent (Gilson, Healy, Noe, and Palepu, 2001). I use an indicator variable, $RELATE$, which is equal to one if the spun-off subsidiary's 2-digit SIC code is equal to the parent's 2-digit SIC code and is equal to zero otherwise. Second, $BIGUNIT$ is an indicator variable that is equal to one if the size of the unit to be spun off relative to the parent is greater than the median and is equal to zero otherwise. Third, I use an indicator variable, $HIGHANAL$, which is equal to one if the number of analyst following of the spun-off firm at the end of the first quarter is greater than the median and is equal to zero otherwise. To support the third hypothesis, β_1 should be remaining significantly negative, while $\beta_1 + \beta_2$ is not different from zero in the model (3).

5. MAIN EMPIRICAL RESULTS

5.1. Descriptive Statistics and Correlations

Panel A of Table 3 reports the descriptive statistics for the tone of the MD&A section in the spin-off prospectus ($TONE_SPIN$) and that in the most recent 10-K reports of the parent firm

(*TONE_PAR10K*). The mean of the tone variable of the spin-off prospectus (-0.381) is similar to that of the parent's 10-K (-0.365). In untabulated results, I also find that the average tone level of the Risk Factor section in the spin-off prospectus is -1.321. It indicates that firms use relatively more negative words in describing risk factors associated with the spin-off. For comparison purposes, I obtain the distribution of the "negative" tone of the MD&A section in my sample spin-off prospectus, and it is similar to that of the MD&A section in the sample IPO prospectus reported in Ferris, Hao, and Liao (2012). The means (1.15 vs. 1.11), medians (1.12 vs. 1.05), and standard deviations (0.48 vs. 0.46) are nearly identical. The average total number of non-numeric words in the MD&A section is 6,993.

I also report the summary statistics for the insider trading variables. The mean of the log-transformation of the net insider trading value for executives' trades is higher (1.472) than that for non-executive insiders' trades (1.009). In other words, during the three-month period following spin-off, the mean of executives' net trading value is \$116,819, while that of non-executive insiders' net trading value is \$63,079, suggesting that executives of the spun-off subsidiary are more extensive net buyers immediately following spin-off than non-executive insiders. The same pattern can be observed from the average number of shares traded by executives and non-executive insiders (0.805 vs. 0.518, equivalent to 12,789 shares vs. 5,761 shares).

Panel A of Table 3 also shows descriptive statistics for control variables. The mean of operating income of the unit to be spun-off during the fiscal year before the spin-off (ROA_{t-1}) is identical to that of the spun-off firm as a separate entity during the first fiscal year after the spin-off (ROA_t). The size of the spun-off subsidiary at the end of the distribution month is on average 30.2% of the size of the parent firm at the end of the previous month (*RELSIZE*). The average

institutional ownership of the parent firm at the last quarter prior to the spin-off (*INST_PAR*) is 62.7%, whereas that of the post-spinoff subsidiary at the first quarter following the spin-off (*INST_SUB*) is 55.5%. This is consistent with the previous finding by Brown and Brooke (1993) that there are selling pressures by institutional investors immediately following spin-offs.

Panel B of Table 3 presents pairwise correlations between the tone, insider trading variables, and control variables used in my empirical models. Although I do not discuss the correlations between all variables, a few are noteworthy. The net insider trading value of executives (*VALUE_EXEC*) is negatively correlated with the tone of the spin-off prospectus (Pearson correlation=-0.20), whereas the correlation between the non-executive insiders' trades (*VALUE_NONEXEC*) and the tone is not statistically significant. The tone of the parent firm's most recent 10-K report (*TONE_PARI0K*) is positively correlated with the tone of the spin-off prospectus (Pearson correlation=0.50), but is not correlated with any insider trading variables. The change of institutional ownership surrounding spin-off (*AINSTOWN*) is not correlated with the tone of the spin-off prospectus, which suggests that institutional selling may not be affected by the disclosure tone. The institutional selling is neither correlated with net insider trading value.

5.2. Long-Term Performance of Insider Trading in the Spun-off Firm

Panel A of Figure 1 presents monthly insider purchasing and selling activities in spun-off subsidiary during the 13-month period following spin-off.²⁷ During the first five months, there is relatively heavy purchasing activity by insiders compared to insider selling. This pattern is consistent with Allen (2001), which documents that insiders are extensive net buyers of stock in the new public subsidiary over the six-month period following spin-offs. In contrast to the spun-off subsidiary insiders, my sample parent company insiders are net sellers. In Panel B, sales

²⁷ I report the number of purchase and sale transactions of executives because there are extreme outliers when reporting trading volume (in dollars).

transactions consist of 86.0% (369/429) of all open market trades made by executives of the parent during the three-month period following spin-offs. When I expand the trading window (24 months around spin-offs), the sales transactions consist of 94.6% of all open market trades (4152/4390).

Insiders' purchase transactions in the subsidiary are followed by superior long-run stock performance. As shown in Panel A of Figure 2, average buy-and-hold abnormal returns to the subsidiary where executives are net buyers of the firm's shares are higher in the long-run than those to the subsidiary where executives are net sellers of the firm and those to the subsidiary where executives never trade the firm's shares. More interestingly, Panel B shows that the superior long-run stock performance of insider buying is mainly driven by the subsidiaries for which the prospectus tone is abnormally negative, while the short-term abnormal returns do not vary with the abnormal prospectus tone. The average 254 days buy-and-hold abnormal returns for the subsidiaries in which executives are net buyers are 31.3% when the prospectus tone is abnormally negative, while they are 6.1% when the tone is abnormally positive.

In Table 4, I provide results of the multivariate regression models that support the interpretation of the Figure 2. The coefficient on *VALUE_EXEC* is significantly positive, which indicate that net insider trading occurring within 3 month after the spin-off is positively associated with 1 year buy-and-hold abnormal return of the spun-off firm, after controlling for profitability, size, and growth opportunities. In Column (2), I include the interaction term *VALUE_EXEC*ABPOSTONE* to examine whether the discretionary portion of spin-off prospectus tone affects the profitability of insider trading. I report that the coefficient on *VALUE_EXEC* is still significantly positive, but the sum of coefficients *VALUE_EXEC* and *VALUE_EXEC*ABPOSTONE* is not different from zero. This finding indicates that insider

trading is positively associated with long-term abnormal return of the spun-off firm when the tone of the firm's prospectus is abnormally negative, while insider trading does not predict long-term stock performance of the spun-off firm when the tone is abnormally positive, consistent with the findings from Panel B of Figure 2.

In Panel C of Figure 2, I report that the variation in the abnormal prospectus tone does not affect the stock performance of the subsidiary where insiders never trade the shares. Thus, I assume that the short-term price of the 'net buyer' subsidiary would have been higher than the observed price without abnormal negative tone. Taken together, negative tone of the spin-off prospectus might contribute to the market's delayed reaction to the spin-off. In other words, by using the abnormally negative tone in the prospectus managers could purchase the spun-off firm shares at a lower price than the price level that would have been set without providing the abnormal tone.

5.3. The Relation between Tone and Trades of Insiders (H1)

I report basic univariate relations between tone and insider trading in Table 5. It presents the average values of tone measures of the MD&A in the spin-off prospectus across subsidiary groups, classified based on executives' net trading activities during the three-month period following the spin-off. I categorize a spun-off subsidiary into the "net buyer" ("net seller") if the total value of insider purchases within three months after the spin-off is greater (less) than the total value of insider sales during the same period. The average tone measure for the subsidiaries of which insiders are net buyers (-0.470) is lower than that for the subsidiaries of which insiders are net sellers (0.053), and the difference is statistically significant at the 1% level. I further decompose the tone measure into "positive" and "negative" tone. I find that the mean difference of tone measures between these two groups is mainly driven by the difference in the use of

negative words (0.584), rather than the difference in the use of positive words (0.061). Although this finding is consistent with the first hypothesis that the tone of the MD&A in the spin-off prospectus is negatively related to the insider trading, the statistical power of the analysis may be low because of small number of the net sale subsample.

Next, I include the control variables and examine the relation between the tone of the MD&A in the spin-off prospectus and the subsequent insider trading in a multivariate framework. Table 6 presents the results of estimating equation (2), which is the primary test of **H1**. In Column (1) through (10) of Panel A, I report the results of the OLS regression of the tone measure on the executives' net trading value (*VALUE_EXEC*) as the main independent variable. The trading window of insider trades for the first five columns is the three-month period following the spin-off, while that for the next five columns is the period between the spin-off completion and the end of the first periodic filing month. To mitigate the concern of the small number of observations relative to the number of parameters, I report the results of the regressions using various model specifications.

First note that the tone of the MD&A in the parent firm's 10-K report, as the main control variable, is positively related to the tone of the MD&A in the spin-off prospectus, which suggests that the tone is determined by disclosure characteristics inherited from the parent firm to the subsidiary firm.

The main test results show that the coefficients on *VALUE_EXEC* are negative and statistically significant, supporting the first hypothesis. This finding is not altered by the inclusion of the main control variables (Column (1) vs. (2)), the industry fixed effects (Column (2) vs. (3)), and the additional control variables (Column (3) vs. (4)). Based on the result reported in Column (3), one standard deviation increase in the insider trading variable is related to a 24.4%

(from -0.381 to -0.474) reduction of the tone variable. To test whether the direction or the statistical significance of the relation between tone and insider trading varies across different insider groups, I include both *VALUE_EXEC* and *VALUE_NONEXEC* in one regression model. Column (5) shows that the coefficient on *VALUE_EXEC* is negative and significant, while the coefficient on *VALUE_NONEXEC* is not different from zero. This suggests that the tone of the spin-off prospectus is negatively related to trades of executives, while the tone is not associated with trades of non-executive insiders such as lower level officers. In Column (6) through (10), I report the results of the regression models using an alternative insider trading window, the period between the distribution date and the first periodic filing month. Since the average length of this trading window (50.3 days) is less than that of the first window (more than three months), there is a higher likelihood that insiders' transactions during this tighter window are made to exploit private information created by the strategic disclosure. The estimated coefficients on *VALUE_EXEC* are negative and significant throughout the different estimation models.

In Panel B, I report the results of the same set of regression models using the log-transformation of the number of shares traded by insiders as the main independent variables. The results are similar to those reported in Panel A. The estimated coefficients on *SHARE_EXEC* are negative and significant, while those on *SHARE_NONEXEC* are not significantly different from zero. Overall, the regression results reported in Table 6 confirm that the trades of insiders who currently serve as executives are negatively related to the prospectus tone. These results remain strong even after controlling for other determinants of tone. I find no evidence that the tone of the spin-off prospectus is related to trades of non-executive insiders, whose ability to be involved in strategic disclosure may be limited.

5.4. The Relation between Tone and Trades of Sub-samples of Executives (H2)

In the previous analysis, I find that executives' net trades following the spin-off are negatively related to the disclosure tone in the prospectus. I also examine whether the relation depends on the likelihood that insiders are able to affect the tone or at least possess information regarding managerial intention behind the tone of the prospectus.

In Table 7, I present the results of estimating regression Equation (2), but the main independent variables are net trading value of the sub-samples of insiders. *VALUE_EPAR* is the net trading value of executives of the spun-off subsidiary who have also been executives in the parent firm prior to the spin-off, while *VALUE_NONEPAR* is the net trading value of executives of the spun-off subsidiary who have not been executives in the pre-spinoff parent firm. In Panel A, I present that the coefficient on *VALUE_EPAR* is negative and significant but that on *VALUE_NONEPAR* is not significantly different from zero. The results are consistent over the alternative trading window. I interpret this result that the negative relation between tone and insider trading exists only for the trades of executives of spun-off subsidiary who have also been executives in the parent company, which is consistent with **H2a**.

I further examine whether the trades of CEO, CFO and General Counsel are exclusively associated with the tone of the spin-off prospectus. *VALUE_TEPAR* is the net trading value of executives of the spun-off subsidiary who have been CEO, CFO, or General Counsel in the parent firm prior to the spin-off, while *VALUE_NONTEPAR* is the net trading value of executives of the spun-off subsidiary who have been other lower-level executives in the pre-spinoff parent firm. In Panel B of Table 7, I report that the estimated coefficient on *VALUE_TEPAR* is significantly negative, while the coefficient on *VALUE_NONTEPAR* is not different from zero, consistent with **H2b**. The choice of trading window does not influence the conclusions. The CEO, CFO, and General Counsel represent the parent company management,

which collaborates on drafting the spin-off prospectus. I consider them to be a group of people who can choose the tone of the qualitative documents in the spin-off prospectus. Therefore, the results reported in Panel B indicate that only executives who could directly affect the tone possess the information about the strategic purpose behind the tone of the reported prospectus.

5.5. The Effect of Information Environment on the Relation between Tone and Insider Trading (H3)

In this section, I provide evidence that cross-sectional variation in opportunities to manipulate the spin-off prospectus affect the relation between tone and insider trading. Table 8 presents the results of estimating Equation (3). The main variables of interest are *VALUE_EXEC* and the interaction between *VALUE_EXEC* and *INFO_Dummy*. In these analyses, I expect that the negative relation between tone and insider trading holds only when outside market participants have difficulty in valuing the spun-off firm correctly.

In Panel A, I use the *RELATE* variable to measure the information environment of the spun-off firm. Column (1) shows that the coefficient β_1 is significantly negative. The F-test statistic for the sum of the coefficients, $\beta_1 + \beta_2$, reports that I cannot reject the null hypothesis that the sum of the coefficients is not different from zero (p-value=0.118). In Column (2), I report that my results are unchanged when I focus on trading by spin-off executives who worked at the parent company (i.e., substituting *VALUE_EPAR* for *VALUE_EXEC*). These findings indicate that the tone of the spin-off prospectus is negatively related to the executives' net trading value only when the business of the spun-off subsidiary is unrelated to that of the parent firm, which is consistent with **H3**.

To examine the effect of the size of the spin-off relative to its parent on the relation between tone and insider trading, I use *BIGUNIT* as the information environment variable and

report the results in Panel B. Both Columns (3) and (4) show that β_1 is significantly negative and $\beta_1+\beta_2$ is not different from zero, which is also consistent with the prediction that there is a negative relation between tone and insider trading only when the spun-off unit is relatively small.

Finally, in Panel C, I use the *HIGHANAL* variable and report the results of estimated coefficients in Columns (5) and (6). Not only the coefficients β_1 's are significantly negative, but also the sums of the coefficients $\beta_1+\beta_2$'s are also negative, although the statistical significance in Column (6) is weak. The results in Panel C cannot support the hypothesis 3 that the tone manipulation is only observed when analyst following of the spun-off firm is low.

Overall, the regression results reported in Table 8 provide weak evidence that the trades of insiders are negatively related to the prospectus tone only when there are opportunities to manipulate the tone of the prospectus. I argue that spinning off of a unit in an industry that is unrelated to the parent's main industry or spinning off of a relatively small unit, provides managers with the opportunity to strategically disclose information about the spin-off and enhance their trading profits.

6. ADDITIONAL ANALYSES

6.1. Does Institutional Selling Influence Insider Trading?

The underlying assumption of the model in Section 5 is that the *ex ante* trading plan at the point of writing the prospectus is consistent with the actual insider trading following the spin-off. Previous studies show that there is often structural selling pressure by institutional investors immediately following the spin-off (Brown and Brooke, 1993; Abarbanell, Bushee, and Raedy, 2003). Many institutions have to rebalance their portfolios based on the fiduciary restrictions by selling the "small-cap" spun-off company's shares. As a supplementary analysis, I investigate whether these types of sales induce managers to purchase the spun-off firm's stock. If managers

believe that they can increase stock holdings at lower costs than expected, they have incentives to purchase more shares to enhance trading profits.

To test for the impact of fiduciary restrictions more specifically, I split institutions into four groups based on their legal form: bank trusts, insurance companies, investment advisers (including mutual fund companies), and pensions and endowments following prior literature (Del Guercio, 1996; Bushee, 2001; Abarbanell, Bushee, and Raedy, 2003). Bank trusts managing equities on behalf of individuals and other institutions face strict fiduciary requirements compared to insurance companies and investment advisers (Del Guercio, 1996). Figure 3 shows the trend of institutional ownership in the parent company and spun-off subsidiary around spin-off. The mean of total institutional ownership in the subsidiary decreases immediately following the spin-off (from 62.7% to 55.5%) and this change is mainly due to the changes of average ownerships of two groups - bank trusts and insurance companies. Abarbanell, Bushee, and Raedy (2003) suggest that bank trusts face strict fiduciary requirements, while investment advisers tend to trade in subsidiary for informational reasons (such as return performance). Thus, the reported trends in Figure 3 are consistent with the explanation that the fiduciary requirement might be a reason for some institutions to sell the stock of the spun-off company immediately following the spin-off (Abarbanell, Bushee, and Raedy, 2003).

I first examine whether institutional selling affects the relation between tone and insider trading. If insider trading is largely driven by the institutional selling, then the change of institutional ownership, especially that of the bank trust, would attenuate the relation between tone and insider trading. However, in Table 9, I demonstrate that the change of institutional ownership does not affect the negative relation between tone and insider trading. The coefficients on the interaction term, $VALUE_EXEC * \Delta INSTOWN$, are not significantly different from zero.

This result holds across all types of institutions. One interesting finding is that the coefficient on the change of institutional ownership, $\Delta INSTOWN$, is significantly positive, which indicates that institutional selling is partly driven by a negative prospectus tone. In other words, institutional investors can be fooled by tone management in spin-offs.

I then investigate whether the institutional selling induces managers to purchase the spun-off firm's stock. To do this, I examine the relation between institutional selling and insider trading, as well as the relation between institutional selling and short-term market reaction to the spin-off. Table 10 shows that the change of institutional ownership does not affect the first-month abnormal return of the spun-off subsidiary stock. This is consistent with the finding of Abarbanell, Bushee, and Raedy that there are no significant relations between the preference-induced institutional trading and the abnormal returns in spun-off subsidiaries. Table 11 shows that the institutional selling is not related to the net trading value during the first three-month period following the spin-off.

Overall, these findings do not support the conjecture that that institutional selling provides incentives for managers to purchase more shares in the spun-off subsidiary. Although tone manipulation can lead to institutional selling, the structural selling is not a significant reason for managers to buy their firms' shares.

6.2. Timing of Insider Trading

Following the spin-off, the opportunity for managers to profit from trades of the mispriced shares diminishes as more information is incorporated into the stock price. In other words, managers will want to execute their trading plans associated with the strategic disclosure as early as possible. I examine whether there is a negative relation between the tone of the prospectus and insider trading for trades made during the four to twelve-month period following

the spin-off. In untabulated results, I find no evidence that the insider trading variables during this trading window are significantly related to the tone measure. Similarly, I find no relation between prospectus tone and insider trades made by former executives of the parent during this trading window.

7. CONCLUSION

This paper investigates the relation between the tone of the spin-off prospectus and insider trading activity following the spin-off. I find that insider trading following the spin-off is negatively associated with the tone conveyed in the prospectus. I also find that this association is concentrated in trading activity performed by the executives who were in a position to affect the tone of the prospectus during the spin-off process. In addition, I provide evidence that the negative relation depends on cross-sectional variation associated with opportunities to manipulate the spin-off disclosure. Overall, my findings suggest that managers could manipulate the tone of the spin-off prospectus in order to affect investors' perception of the spin-off and enhance profits from their trades in the spun-off subsidiary.

Consistent with prior literature, I document that the spun-off subsidiary insiders are on average net buyers of their own firm's shares following the spin-off. Taking advantage of this pattern, I expand upon the strategic disclosure literature by examining an interesting setting through which managers can make good news hard to extract from publicly available information. Based upon the argument that an overly pessimistic tone coupled with subsequent insider buying is difficult to regulate, managers would believe that there are low litigation costs related to the manipulation of disclosure with the primary objective of concealing the upside potential of the spun-off firm.

Consistent with Allen (2001), the insider purchase transactions in spun-off subsidiaries are followed by the superior long-run stock performance of the subsidiary. My empirical findings suggest that the abnormal profitability of insider trading is attributed to managerial opportunistic disclosure behavior in writing the spin-off prospectus. Even though managers are obligated to truthfully report all material information regarding the spin-off, they might attempt to mislead investors using their discretion over the tone of the qualitative portion of the prospectus.

It is always challenging to provide direct evidence that managers intentionally manipulate a disclosure in a way that misleads investors (i.e., scienter). However, the findings of this study suggest the possibility of managers' opportunistic disclosure behaviors behind the observed pattern: managers convey a negative tone in the prospectus but end up being buyers for their own account immediately following the spin-off.

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Appendix I. Variable Definitions

Variable	Definition	Data Source
TONE_SPIN	Tone = (number of positive words - number of negative words)*100/ number of total words in the MD&A section in the spin-off prospectus	Spin-off prospectus
TONE_PAR10K	Tone measure of the MD&A section in the parent's most recent 10-K report prior to the spin-off	10-Ks
TONE_SUB10K	Tone measure of the MD&A section in the subsidiary's first 10-K report following the spin-off	10-Ks
VALUE	The natural logarithm of one plus the absolute value of insiders' net trades in thousands. The sign of net trades (net purchase = positive, net sale = negative) is added back. "_EXEC," "_NONEEXEC," "_EPAR," "_NONEPAR," "_TEPAR," "_NONTEPAR" are added to the variable names to distinguish the trades made by different insider groups. Classification of insiders is included in Table 2.	SEC Form 4
SHARE	The natural logarithm of one plus the absolute value of the number of net trades by insiders in thousands. The sign of net trades (net purchase = positive, net sale = negative) is added back.	
ROA _t	Operating income / Total Assets of the subsidiary during the first fiscal year following the spin-off	Compustat
ROA _{t-1}	Operating income / Total Assets of the subsidiary during the last fiscal year prior to the spin-off	Spin-off prospectus
RET	12 month size-adjusted buy-and-hold abnormal returns of the parent. The holding period is from the first prospectus filing month - 13 to the first prospectus filing month - 1.	CRSP
RETVOL	The stock return volatility calculated using 12 months of monthly abnormal return data before the first prospectus filing month.	CRSP
SG	Sales growth, defined as percentage change in total sales of the subsidiary during the last fiscal year prior to the spin-off relative to the previous year.	Spin-off prospectus
SIZE_SUB	Price * shares outstanding of the spun-off subsidiary at the end of the spin-off distribution month (LSIZE, the natural logarithm of SIZE, is used in the main analyses.)	Compustat
SIZE_PAR	Price * shares outstanding of the spun-off subsidiary at the last month end prior to the spin-off distribution.	Compustat
RELSIZE	SIZE_SUB / SIZE_PAR	
NSEG	Number of segments reported at the spun-off subsidiary's first fiscal year end	Compustat

EARNVOL	The standard deviation of ROA calculated using data from the last five years	Spin-off prospectus
INSTOWN_PAR	The percentage of parent shares held by institutional investors at the parent's most recent fiscal quarter end prior to the spin-off	Thomson Reuters
INSTOWN_SUB	The percentage of subsidiary shares held by institutional investors at the subsidiary's first fiscal quarter end following the spin-off	Thomson Reuters
Δ INSTOWN	INSTOWN_SUB - INSTOWN_PAR	
1-Year BHAR	254 trading day size-adjusted buy-and-hold abnormal returns of the spun-off firm commencing from the spin-off distribution date.	CRSP
ABPOSTONE	Indicator variable that is equal to one if the predicted value from the regression of TONE_SPIN on all control variables is greater than zero.	
RELATE	Indicator variable that is equal to one if the spun-off subsidiary's 2-digit SIC code is equal to the parent's 2-digit SIC code and is equal to zero otherwise.	Compustat
BIGUNIT	Indicator variable that is equal to one if the RELSIZE measure is greater than and equal to the median value and is equal to zero otherwise. The RELSIZE is the ratio of the size of the spun-off subsidiary to the size of the parent.	Compustat
HIGHANAL	Indicator variable that is equal to one if the number of analyst following is greater than or equal to the median value and is equal to zero otherwise	IBES

Appendix II. Spin-off Timetable and Example

Spin-off Transaction Timetable

	Action/Event	Responsibility
Pre-announcement period	Various decisions regarding the spin-off Identify business to be spun-off/ Determine assets and liabilities to be transferred to spin-off subsidiary/ Prepare strategy for contacting/ Establish disclosure policies	Parent, Counsel, Spin-off Entity
	Determine and prepare required financial statements Historical audited financial statements of spin-off subsidiary on an independent basis/ Pro forma financial statements/ Determine various allocation issues (assets, debt, employees, corporate personnel)	Accountants
	Begin drafting Form 10 and Information Statement	Parent, Counsel
	Announce intention to effect spin-off to press and other interested parties	Parent
Post-announcement period	Form Spin-off company Certificate of Incorporation/ Determine board of directors, executive officers/ Identify prospective outside directors/ Consider dividend policy	Parent, Counsel, Spin-off company
	File Form 10 along with Information Statement with the SEC	Parent, Counsel
	Provide other forms of information Prepare press release/ Prepare a spin-off road show (if desirable)/ Meeting with and presentation to ratings agencies/ Receive, respond to and resolve SEC comments on Information Statement	Parent, Counsel, Spin-off company
	Meeting of Parent BODs Spin-off dividend declared/ record date, distribution date set	Parent, Counsel, Parent financial advisors
	Meeting of Spin-off company BODs Approve all agreements, declare rights (if any)	Spin-off company
	Communicate with shareholders and investors Issue press release and file Form 8K/ Mail Information Statement to common stock shareholders/ Spin-off road show	Parent, Spin-off company
Spin-off completion	Spin-off company begins trading on "when-issued" basis	N/A
	Spin-off: Mail stock certificates to Parent holders of record as of record date Provide shareholders with information as to allocation of tax basis between Parent and Spin-off company Execute agreements	Parent Parent, Counsel, Spin-off company Parent, Spin-off company
	Spin-off company begins trading on "regular-way"	N/A

Excerpt from "SPIN-OFFS", 2010 Practical Law Publishing Limited and Practical Law Company, Inc.

Appendix II - Continued

Spin-off Example

The spin-off of Marriott Vacations Worldwide Corp. (NYSE: VAC) from Marriott International Inc. (NYSE: MAR) in 2011

2/13	6/28 to 10/25	10/25	11/10	11/21	PAR
Announcement	Prospectuses filing ⁽¹⁾	BODs' approval	Record date	Distribution date ⁽²⁾	
					SUB
				12/7	
				10Q filing date ⁽³⁾	
			Insider Trading Windows		
				0-3 month	
				0-filing month	

(1) The subsidiary's registration statement on Form 10 filed with the SEC on 6/28, as amended 9/9, 9/30, 10/14, 10/19, 10/21, 10/25.

(2) "The distribution will be effective as of 12:01 a.m., Eastern time, on November 21, 2011. Immediately after the distribution becomes effective, the subsidiary will be an independent, publicly owned company. Each parent shareholder will receive one share of the subsidiary common stock for every ten shares of the parent Type A common stock held by such shareholder on the record date (11/10/2011)."

(3) Marriott Vacations Worldwide Corp. files the first 10-Q on December 7, 2011 and the first 10-K on March 21, 2012.

Appendix III. Example of the MD&A Section in a Spin-off Prospectus

I provide an excerpt from the MD&A section in the Vlasic Foods Inc's spin-off prospectus. Since the average total number of words in the MD&A is roughly 7,000, I limit the excerpt to a sub-section. Words in bold are "negative" words, and underlined words are "positive" words included in the Loughran and McDonald's word list. The abnormal level of tone of the entire MD&A section in the Vlasic Foods Inc's prospectus is -0.875, which is the fourth most negative tone among the full sample (N=139).

"Results by Segment

The net sales of the grocery products segment decreased 4% in fiscal 1997 (down 6.3% on a comparable 52 week basis) to \$538.7 million, driven principally by **weakness** in the German foods distribution business. This **weakness** was principally caused by **difficulties** in the transition to a new management information system. These **difficulties** caused the unit to be **unable** to receive process and deliver a substantial number of orders for a period of time. Management believes the **difficulties** have been **corrected** and that the business is working to regain **lost** distribution. The fiscal 1997 net sales of most other businesses included in this segment approximated those for fiscal 1996 (down 2.3% on a comparable 52 week basis). This segment's earnings before interest and taxes decreased 8% in fiscal 1997 to \$49.5 million. Excluding **restructuring** charges from fiscal 1997 and fiscal 1996, earnings before interest and taxes increased 3% as a 25% increase in Vlasic pickle earnings was largely offset by the **poor** volume performance of the German foods distribution business, which went from a profit in fiscal 1996 to a **loss** in fiscal 1997. Open Pit barbecue sauce, Argentine retail and the U.K. pickle, canned bean and vegetable businesses **lagged** in fiscal 1997.

The net sales of the agricultural products segment **declined** 1% in fiscal 1997 (down 2.9% on a comparable 52 week basis) to \$366.1 million. Reduced overall demand for beef products in Europe and reduced shipments to Campbell were offset by increased contract manufacturing for Campbell Foodservice and increased fresh mushroom sales. This segment's earnings before interest and taxes **declined** 44% in fiscal 1997 to \$10.8 million from \$19.3 million in fiscal 1996. The **decline** was due in approximately equal parts from reduced sales of frozen cooked beef and **unfavorable** mushroom costs.

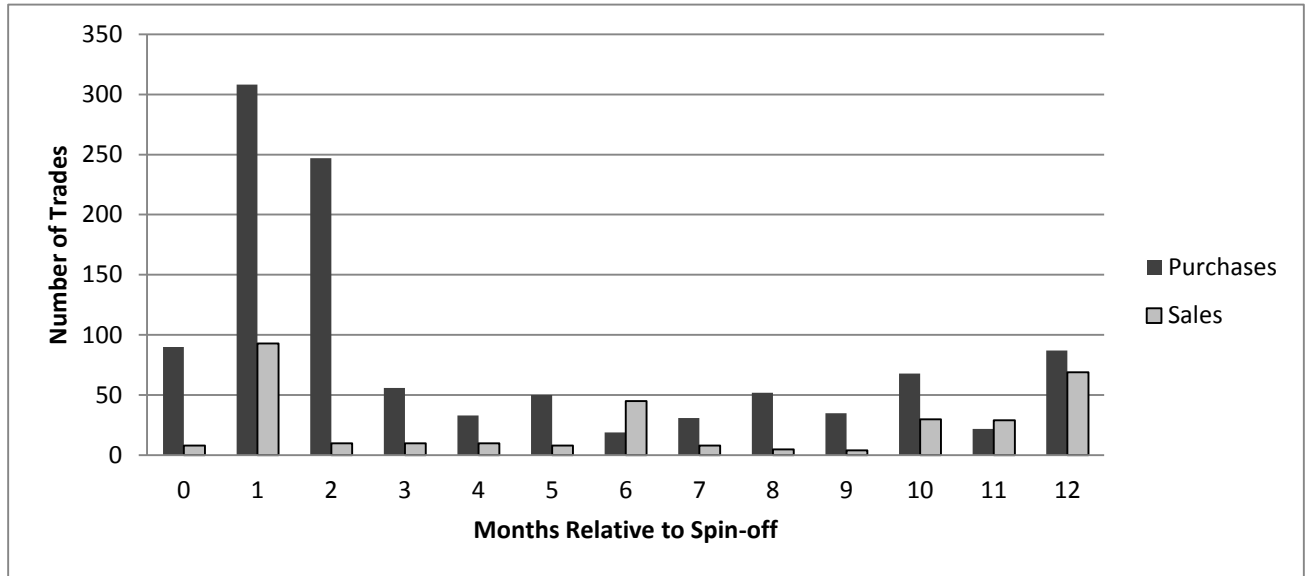
The \$583.4 million of net sales for the frozen foods segment in fiscal 1996 represented a decrease of 4% principally due to a **decline** in Swanson U.S. attributable to the timing of marketing programs at the end of fiscal 1995. A double-digit gain in Swanson Canada was offset by a 6% volume **decline** in Freshbake in the U.K. which was principally due to reduced overall demand for beef products in Europe. This segment's earnings before interest and taxes in fiscal 1996 decreased 66% to \$15.9 million due to **restructuring** charges. Excluding the **restructuring** charges, earnings before interest and taxes increased 5%. This was driven by Swanson Canada net sales increases and higher relative earnings at Freshbake in the U.K. stemming from improved operating efficiencies. Swanson U.S. was flat as cost improvements offset the sales **decline**.

The net sales of the grocery products segment in fiscal 1996 were \$561.2 million, an increase of 3.5% driven by a 9% increase in net sales of Vlasic pickles resulting from the successful introduction of Sandwich Stackers. This segment's earnings before interest and taxes increased 39% in fiscal 1996. Excluding the fiscal 1996 **restructuring** charges, earnings before interest and taxes increased 49% driven by higher net sales, improved manufacturing costs and controlled marketing expenditures for Vlasic pickles. Son A **weakened** during fiscal 1996 while Open Pit barbecue sauce and Argentine retail improved.

The net sales of the agricultural products segment increased 1.6% in fiscal 1996 to \$369.1 million due principally to double-digit gains in contract manufacturing for Campbell Foodservice. Fresh mushroom sales **weakened** in fiscal 1996 but Argentine beef sales increased slightly as higher sales to Campbell offset export **weaknesses** related to overall reduced demand for beef products in Europe. This segment's earnings before interest and taxes **declined** 16% principally due to higher mushroom costs.”

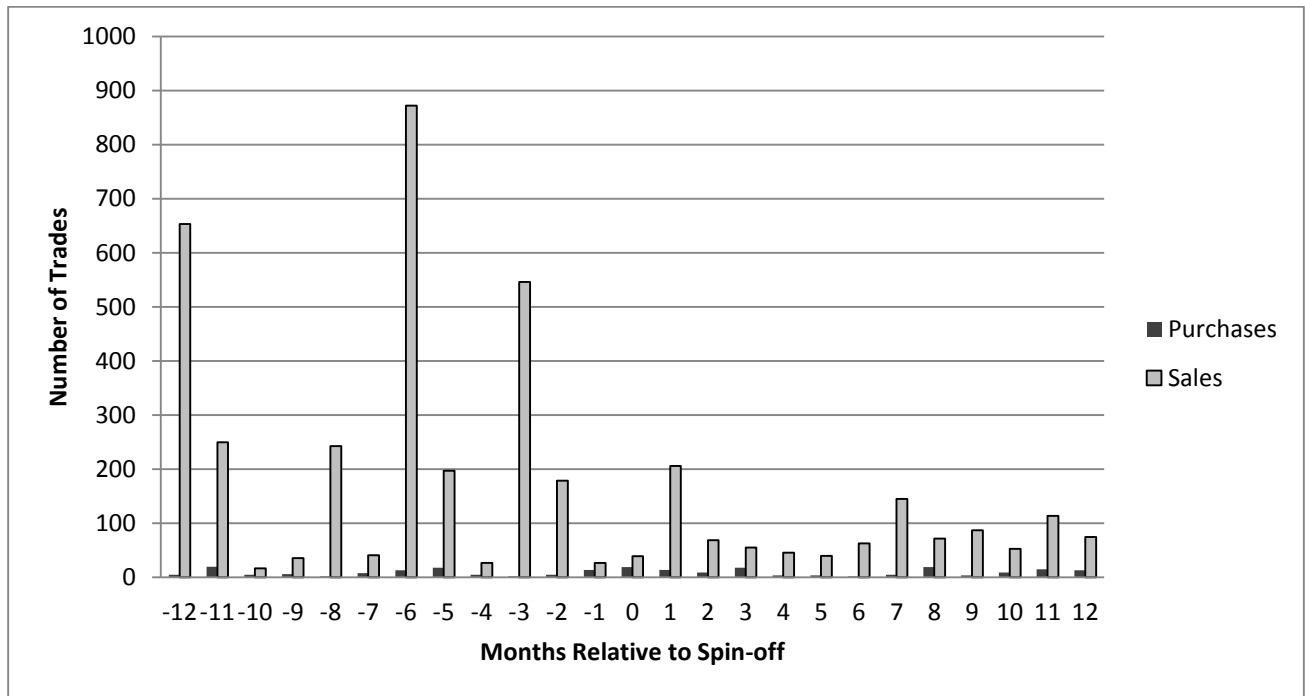
Figure 1. Executives' Trades around Spin-off

Panel A. Trades of spun-off subsidiary shares made by executives of the spun-off firm following spin-off



The number of purchase transactions and sale transactions of executives in the subsidiary firms during the 13-month period following spin-offs.

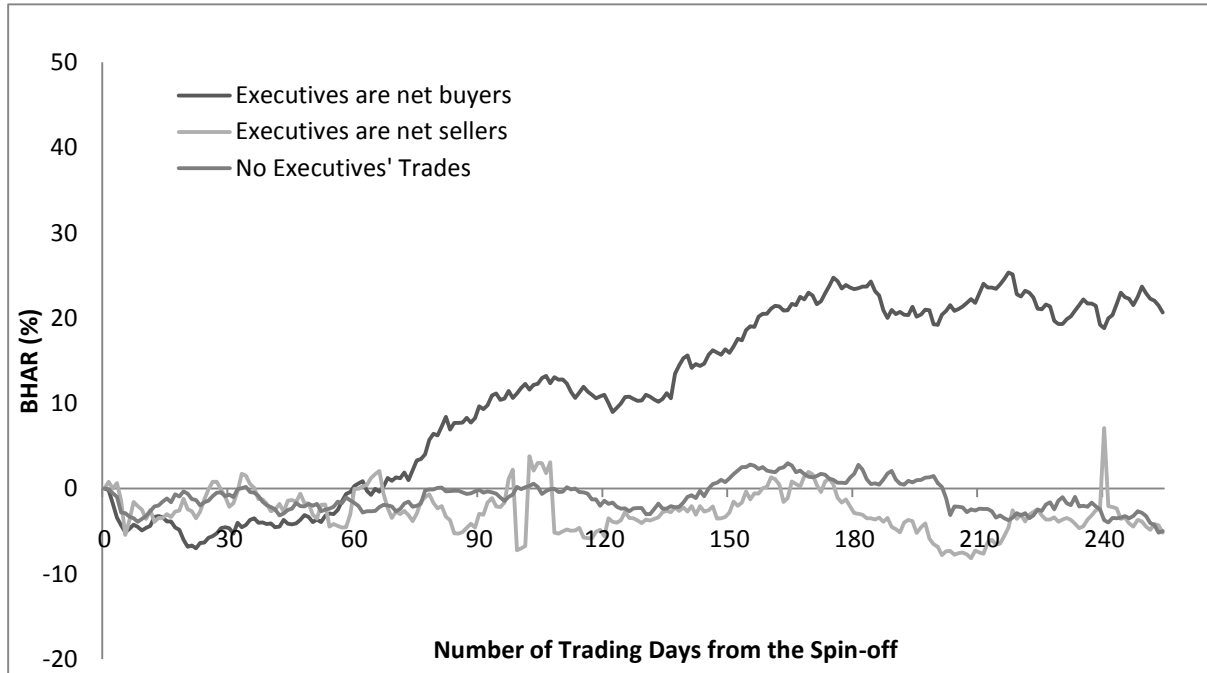
Panel B. Trades of parent firm shares made by executives of the parent around spin-off



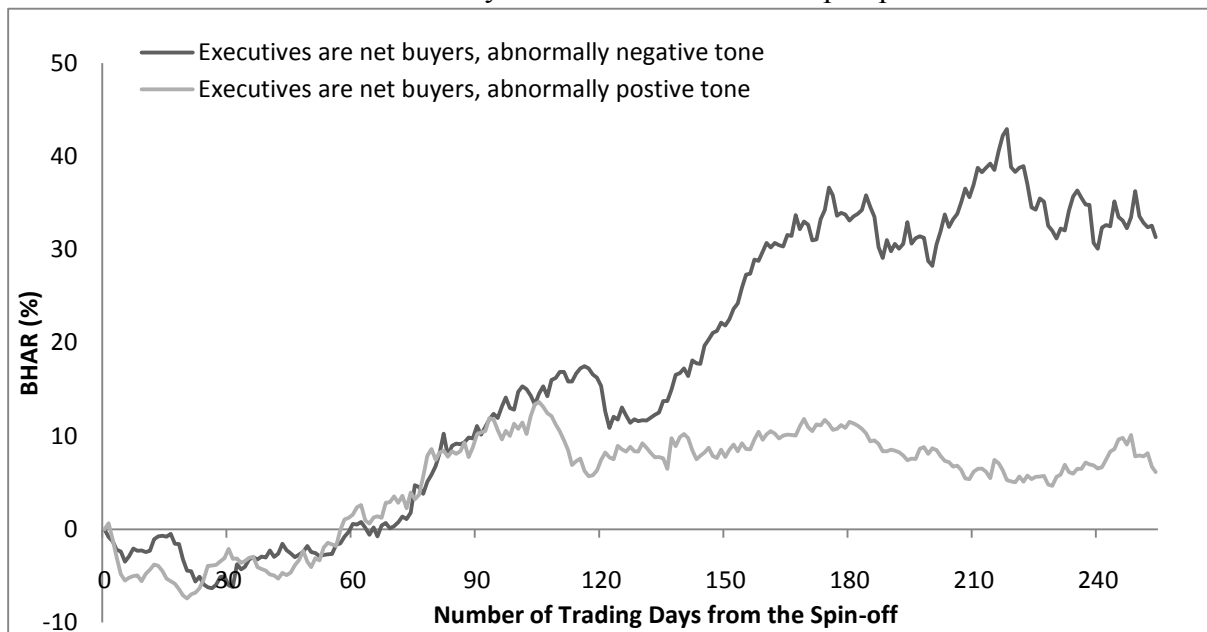
The number of purchase transactions and sale transactions of executives in the parent firms during the 25-month period around spin-offs.

Figure 2. Stock Performance of Post-spinoff Subsidiary

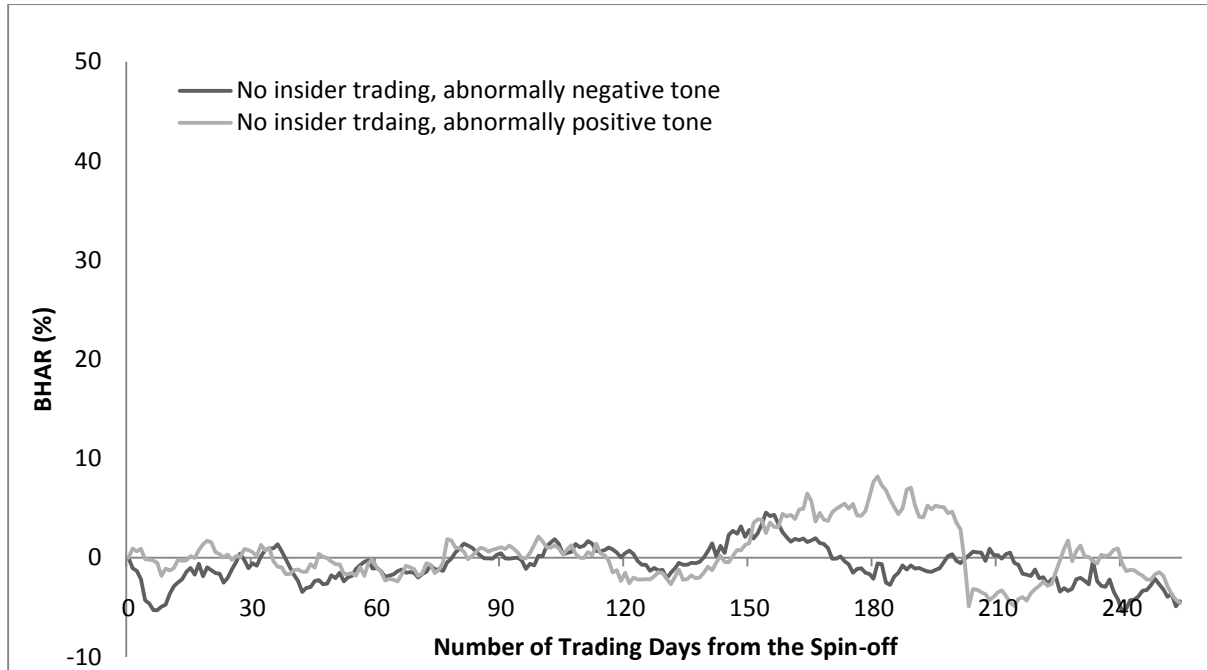
Panel A. Abnormal returns on subsidiaries based on insider trading



Panel B. Abnormal returns on 'net buyer' subsidiaries based on prospectus tone



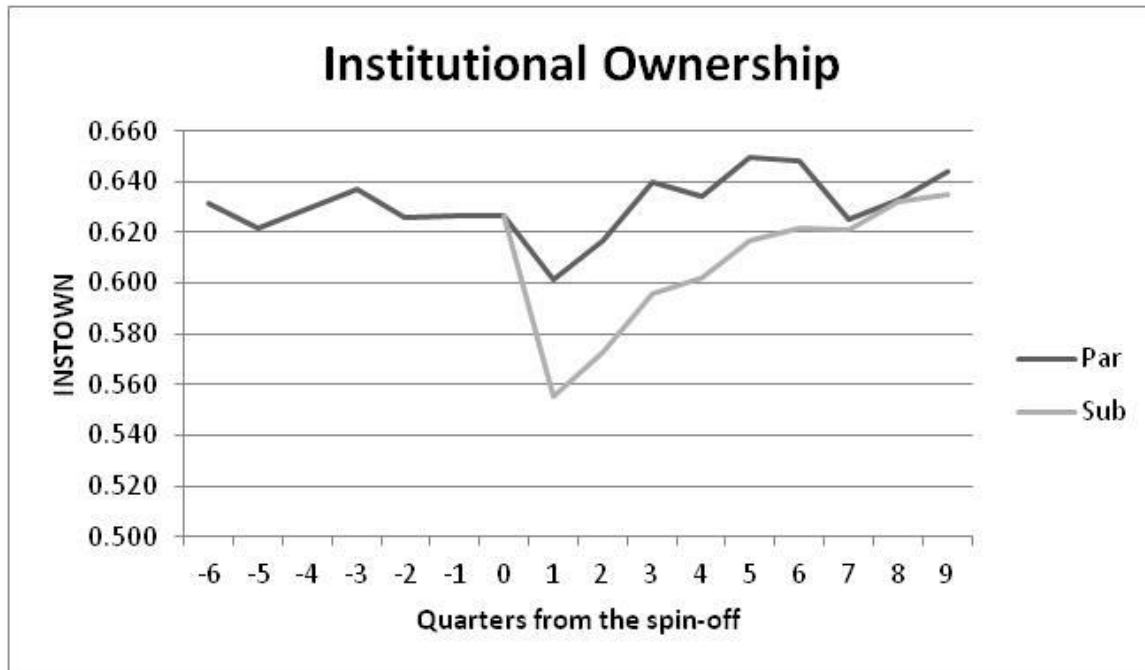
Panel C. Abnormal returns on ‘no trades’ subsidiaries based on prospectus tone



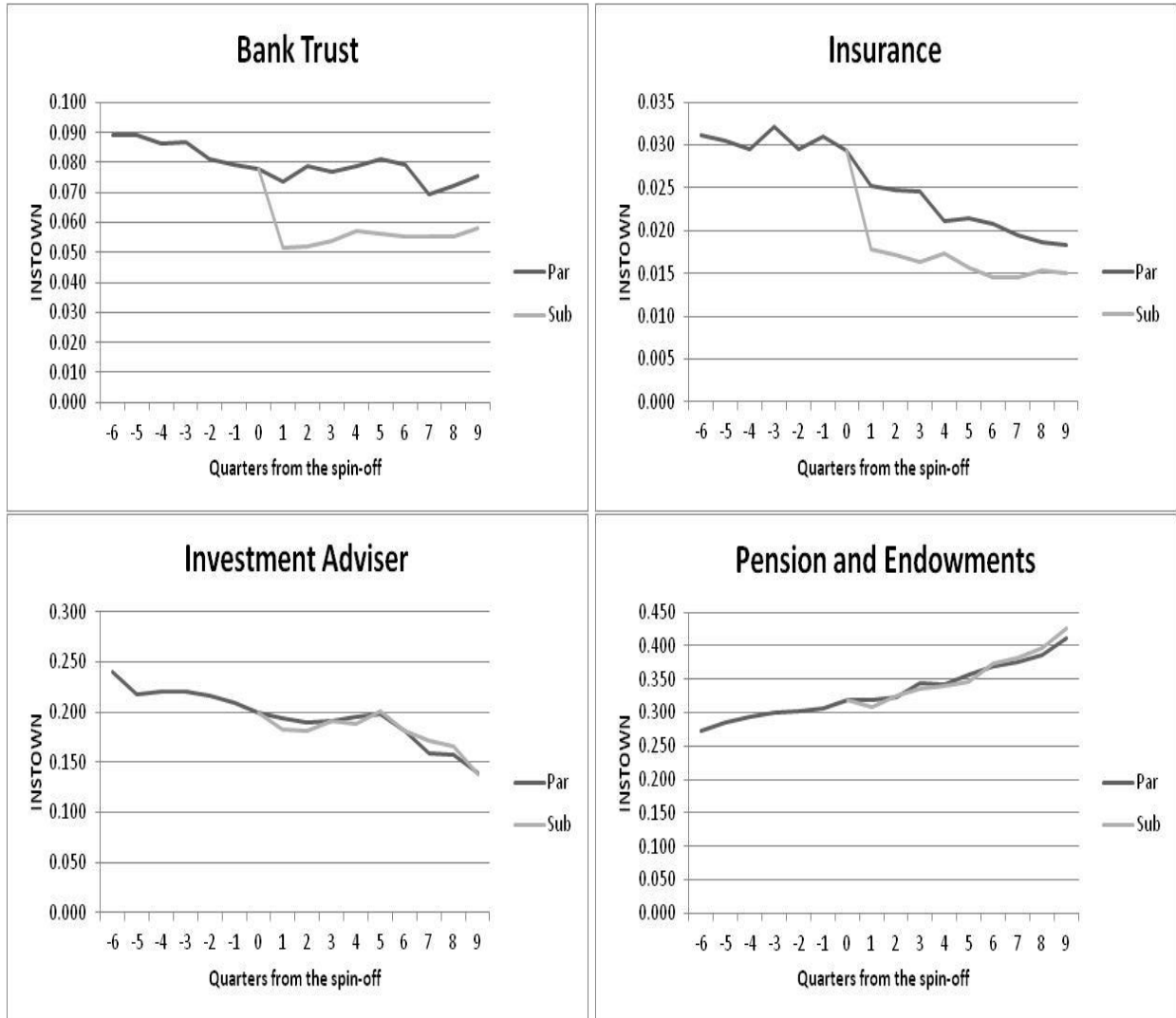
Panel A presents the average daily buy-and-hold abnormal returns on the subsidiaries where executives are ‘net buyers’ during the three-month period following the spin-off (N=52) and where executives are ‘net sellers’ (N=10) and where executives never trade during the same period (N=77). Panel B presents the average abnormal returns on the ‘net buyers’ subsidiaries separately based on whether their spin-off prospectuses have abnormally negative tone (N=29) or abnormally positive tone (N=23). Panel C presents the average abnormal returns on the ‘no trades’ subsidiaries separately based on whether their spin-off prospectuses have abnormally negative tone (N=38) or abnormally positive tone (N=39). Returns are adjusted for the size deciles that were formed for the CRSP NYSE/AMEX/NASDAQ file based on the market value of equity of each firm at the end of the year prior to the time period measured. Deciles are recalculated annually for each firm in the sample.

Figure 3. Average Institutional Ownership in the Parent and Subsidiary around Spin-off

Panel A. Total institutional ownership



Panel B. Decomposed institutional ownership



Panel A presents the average quarterly proportion of institutional ownership during the 16-month period around spin-off. Panel B presents the average quarterly proportions of ownership held by the sub-groups of institutions (bank trusts, insurance companies, investment advisor, pension & endowments) during the 16-month period around spin-off.

Table 1. Sample Selection Process

Spinoff Sample Selection process	N
SDC M&A database ex date 1995-2011	669
Exclude: Withdrawn or private parent	572
Exclude: Two-step spinoff	534
Exclude: Not tax-free spinoff (% of distributed < 80%)	469
Exclude: Regulated industry	466
Criteria 1) Exclude: Exact information about the spin-off transactions are not available in Press Release or the company's Web site/ An announcement date and ex date are not available	281
Criteria 2) Exclude: Other corporate events happen within a year around the spin-off	243
Criteria 3) Keep: SDC ex date is within 30 days of CRSP price start date	181
Keep: Spin-off prospectus available in the SEC Edgar Web site/ Historical accounting information available in the prospectus/ Post-spinoff subsidiary's accounting information available in Compustat	139
Year of spin-off completion	N
1995	1
1996	20
1997	15
1998	8
1999	13
2000	10
2001	10
2002	6
2003	8
2004	4
2005	4
2006	5
2007	9
2008	13
2009	4
2010	3
2011	6

Table 2. Classification of Insiders

Group Name	Description	N	
EXEC	Executives of post-spinoff subsidiary	225	H1
NONEXEC	Non-executive insiders of post-spinoff subsidiary	370	
EPAR	Executives of post-spinoff subsidiary who have been executives in the parent prior to the spin-off	164	H2a
NONEPAR	Executives of post-spinoff subsidiary who have not been executives in the parent prior to the spin-off	61	
TEPAR	Executives of post-spinoff subsidiary who have been CEO, CFO, or General Counsel in the parent prior to the spin-off	95	H2b
NONTEPAR	Executives of post-spinoff subsidiary who have been other executives (non CEO, CFO, General Counsel) in the parent prior to the spin-off	69	

This table presents the number of insiders in each group categorized by pre- and post-spin-off roles. Post-spin-off roles in the subsidiary company are identified from the SEC form 4. Pre-spin-off roles in the parent company are identified from each individual's background information available in the spin-off prospectus. First, the EXEC and NONEXEC groups are categorized based on the decomposition of full insider sample (N=595). Second, the EPAR and NONEPAR groups are decomposition of the EXEC group. Finally, the TEPAR and NONTEPAR groups are further decomposition of the EPAR group.

Table 3. Descriptive Statistics and Correlations

Panel A. Descriptive Statistics

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
<i>Tone of MD&A</i>						
TONE_SPIN	139	-0.381	0.515	-1.807	-0.288	0.910
TONE_PAR10K	139	-0.365	0.624	-1.703	-0.374	1.721
<i>Insider Trading (0-3 month)</i>						
VALUE_EXEC	139	1.472	3.319	-9.763	0	8.314
VALUE_NONEXEC	139	1.009	3.523	-9.668	0	8.612
SHARE_EXEC	139	0.805	2.009	-6.217	0	5.464
SHARE_NONEXEC	139	0.518	1.989	-6.356	0	6.112
<i>Controls</i>						
ROA _t	139	0.055	0.207	-0.757	0.076	1.021
ROA _{t-1}	137	0.055	0.311	-1.991	0.084	1.162
RET	139	-0.040	0.374	-0.818	-0.044	2.374
RETVOL	139	0.095	0.056	0.023	0.082	0.367
SG	139	0.130	0.299	-0.738	0.087	1.368
SIZE_PAR	139	12025.920	22912.070	35.289	3834.230	123955.890
SIZE_SUB	139	1855.130	3420.920	5.245	561.843	20295.390
RELSIZE	139	0.302	0.314	0.009	0.187	1.612
NSEG	139	1.784	1.147	1	1	6
EARNVOL	136	0.122	0.327	0.001	0.050	3.427
INSTOWN_PAR	139	0.627	0.210	0.097	0.648	1
INSTOWN_SUB	139	0.555	0.234	0.002	0.587	1
ΔINSTOWN	139	-0.071	0.159	-0.829	-0.044	0.378

This table presents descriptive statistics for tone measures, insider trading variables, and control variables.

Table 3 - Continued

Panel B. Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) TONE_SPIN	1	0.50	-0.20	-0.01	0.21	0.18	0.24	0.03	0.25	0.01	0.15	-0.14	0.09	-0.01	0.09	0.11	0.13	0.01	0.02
(2) TONE_PAR10K	0.51	1	-0.01	0.00	0.13	0.18	0.17	-0.10	0.13	-0.02	-0.04	-0.16	-0.06	0.01	0.11	-0.10	-0.02	0.14	-0.07
(3) VALUE_EXEC	-0.20	-0.05	1	0.48	-0.02	-0.06	-0.14	-0.10	-0.22	-0.21	-0.22	0.07	-0.04	0.14	-0.12	-0.02	0.00	-0.08	-0.02
(4) VALUE_NONEXEC	-0.03	-0.02	0.44	1	0.03	-0.05	0.00	-0.13	-0.14	-0.09	-0.22	-0.02	-0.05	-0.02	-0.16	-0.14	-0.13	-0.01	-0.10
(5) ROA _t	0.18	0.08	0.04	0.04	1	0.68	0.19	-0.37	0.13	0.30	0.20	-0.01	-0.13	0.14	0.28	0.04	0.16	0.15	0.15
(6) ROA _{t-1}	0.20	0.16	-0.06	-0.09	0.69	1	-0.15	-0.25	-0.04	0.19	0.09	-0.02	-0.27	0.07	0.19	0.07	0.15	0.12	0.12
(7) RET	0.28	0.24	-0.15	0.00	0.25	0.16	1	-0.13	0.22	0.04	0.01	-0.12	0.02	0.16	0.17	-0.01	0.15	0.14	0.00
(8) RETVOL	0.12	-0.03	-0.04	-0.10	-0.15	-0.06	-0.10	1	-0.03	-0.44	0.18	-0.13	0.25	-0.04	-0.16	0.17	0.01	-0.09	-0.08
(9) SG	0.30	0.18	-0.21	-0.04	0.13	0.19	0.14	0.02	1	0.14	0.24	-0.13	0.25	-0.03	-0.05	-0.04	0.06	-0.07	0.04
(10) SIZE	-0.01	-0.04	-0.22	-0.08	0.18	0.06	0.09	-0.44	0.15	1	0.17	0.27	-0.14	-0.01	0.35	-0.06	0.06	0.16	0.27
(11) RELSIZE	0.15	-0.04	-0.22	-0.22	0.20	0.09	0.01	0.18	0.24	0.17	1	-0.03	-0.07	-0.02	0.22	0.40	0.40	0.04	0.09
(12) NSEG	-0.14	-0.12	0.07	0.00	0.04	0.04	-0.09	-0.14	-0.08	0.22	0.10	1	-0.09	-0.04	0.05	0.03	0.13	0.02	0.12
(13) EARNVOL	-0.03	-0.03	0.01	-0.10	-0.14	-0.05	-0.15	0.28	-0.09	-0.20	-0.06	-0.10	1	0.08	-0.01	0.01	-0.11	-0.07	0.05
(14) ARI	-0.01	0.01	0.14	-0.02	0.14	0.07	0.16	-0.04	-0.03	-0.01	-0.02	-0.04	0.08	1	0.23	0.06	0.01	0.17	0.13
(15) ΔINSTOWN	0.09	0.11	-0.12	-0.16	0.28	0.19	0.17	-0.16	-0.05	0.35	0.22	0.05	-0.01	0.23	1	0.38	0.20	0.59	0.46
(16) ΔINSTOWN (Bank Trust)	0.11	-0.10	-0.02	-0.14	0.04	0.07	-0.01	0.17	-0.04	-0.06	0.40	0.03	0.01	0.06	0.38	1	0.28	0.15	0.06
(17) ΔINSTOWN (Insurance)	0.13	-0.02	0.00	-0.13	0.16	0.15	0.15	0.01	0.06	0.06	0.40	0.13	-0.11	0.01	0.20	0.28	1	0.11	-0.06
(18) ΔINSTOWN (Investment advisor)	0.01	0.14	-0.08	-0.01	0.15	0.12	0.14	-0.09	-0.07	0.16	0.04	0.02	-0.07	0.17	0.59	0.15	0.11	1	-0.23
(19) ΔINSTOWN (Pension, Endowments, etc.)	0.02	-0.07	-0.02	-0.10	0.15	0.12	0.00	-0.08	0.04	0.27	0.09	0.12	0.05	0.13	0.46	0.06	-0.06	-0.23	1

This table presents Pearson correlations above the diagonal and Spearman correlations below the diagonal. All insider trading variables are based on trades during the zero to three-month period following the spin-off. Correlations in bold are significantly different from zero at the 5% level.

Table 4: Long Term Performance of Insider Trading in the Spun-off Firm

Dependent Variable: 1-Year (254 Trading Days) BHAR		
	(1)	(2)
VALUE_EXEC	0.045** (2.30)	0.057** (2.07)
VALUE_EXEC*ABPOSTONE		-0.038 (-0.99)
ABPOSTONE		-0.072 (-0.60)
ROA	-0.321 (-1.18)	-0.238 (-0.85)
SIZE	0.046 (1.39)	0.041 (1.22)
SG	0.121 (0.67)	0.108 (0.59)
Intercept	-0.289 (-1.32)	-0.222 (-0.97)
Year FE	Yes	Yes
Obs.	137	134
Adjusted R ²	0.021	0.015
F-Test (H₀: β₁ + β₂ = 0)		
Coefficient		0.019
F-Stat		0.47
P-Value		0.496

(1) $1\text{-Year BHAR} = \alpha + \beta_1 \text{VALUE_EXEC} + \text{Controls}$

(2) $1\text{-Year BHAR} = \alpha + \beta_1 \text{VALUE_EXEC} + \beta_2 \text{VALUE_EXEC} * \text{ABPOSTONE} + \beta_3 \text{ABPOSTONE} + \text{Controls}$

1-Year BHAR is the 254 trading day size-adjusted buy-and-hold abnormal returns of the spun-off firm commencing from the spin-off distribution date. Returns are adjusted for the size deciles that were formed for the CRSP NYSE/AMEX/NASDAQ file based on the market value of equity of each firm at the end of the year prior to the time period measured. Deciles are recalculated annually for each firm in the sample. *ABPOSTONE* is an indicator variable that is equal to one if the predicted value from the following regression is greater than zero:

$$\text{TONE_SPIN} = \alpha + \beta_1 \text{TONE_PAR10K} + \beta_2 \text{ROA}_{t-1} + \beta_3 \text{RET} + \beta_4 \text{SG} + \beta_5 \text{LSIZE} + \beta_6 \text{ROA}_t + \beta_7 \text{RETVOL} + \beta_8 \text{EARNVOL} + \beta_9 \text{NSEG} + \text{IndustryDummies} + \varepsilon$$

VALUE_EXEC is the log-transformation of net trading value. The trades are made by executives of the subsidiary during the three-month period following the spin-off. All other control variables (*ROA_t*, *SIZE*, *SG*) are described in the Appendix I. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 5. Univariate Tests of Mean Differences of Tone Measures

<i>EXEC</i>	Purchase (N=52)	Sale (N=10)	Difference
	(1)	(2)	(1)-(2)
TONE_SPIN	-0.470	0.053	-0.523*** (0.00)
%POS	0.797	0.736	0.061 (0.60)
%NEG	1.267	0.683	0.584*** (0.00)

This table presents the average values of tone measures of the MD&A in the spin-off prospectus across subsidiary groups classified based on executives net trading value during the zero to three-month period following the spin-off. “%POS”, “%NEG” variables are percentage of positive, negative words in the MD&A in the spin-off prospectus, respectively. The “Purchase” group includes subsidiaries with net trading value is greater than zero, the “Sale” group includes subsidiaries with net trading value is less than zero. Mean differences and t-statistics (in parenthesis) are reported in the rightmost column. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 6. Multivariate Regressions, Tone Measure on Net Trades of Executives

Panel A. Regressions of the tone of the MD&A in the spin-off prospectus on the executives' trading value

		Dependent Variable: TONE_SPIN								
Trading Window:	0-3 month				0-filing month					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VALUE_EXEC	-0.033** (-2.55)	-0.024** (-2.05)	-0.027** (-2.27)	-0.028** (-2.11)	-0.037** (-2.55)	-0.037** (-2.45)	-0.027** (-2.04)	-0.038*** (-2.71)	-0.038** (-2.53)	-0.044*** (-2.77)
VALUE_NONEXEC					0.019 (1.48)					0.016 (1.22)
TONE_PAR10K		0.359*** (5.85)	0.314*** (5.07)	0.330*** (5.19)	0.340*** (5.35)		0.355*** (5.78)	0.312*** (5.10)	0.329*** (5.24)	0.333*** (5.30)
ROA _{t-1}		0.211* (1.68)	0.284** (2.22)	0.224 (1.25)	0.253 (1.41)		0.218* (1.74)	0.287** (2.28)	0.243 (1.38)	0.270 (1.52)
RET		0.191* (1.84)	0.176* (1.71)	0.162 (1.45)	0.162 (1.46)		0.191* (1.84)	0.169* (1.66)	0.157 (1.42)	0.167 (1.51)
SG		0.240* (1.86)	0.147 (1.13)	0.056 (0.39)	0.070 (0.49)		0.262** (2.05)	0.161 (1.27)	0.078 (0.55)	0.100 (0.70)
SIZE		-0.018 (-0.81)	-0.032 (-1.42)	-0.031 (-1.09)	-0.030 (-1.07)		-0.021 (-0.93)	-0.038* (-1.68)	-0.039 (-1.36)	-0.037 (-1.33)
ROA _t				0.281 (1.01)	0.207 (0.74)				0.247 (0.90)	0.177 (0.63)
RETVOL				0.445 (0.54)	0.587 (0.72)				0.325 (0.40)	0.447 (0.55)
EARNVOL				0.157 (1.33)	0.184 (1.55)				0.163 (1.40)	0.182 (1.55)
NSEG				0.016 (0.44)	0.018 (0.51)				0.020 (0.56)	0.021 (0.58)
Intercept	-0.332*** (-7.08)	-0.143 (-0.97)	-0.061 (-0.41)	-0.154 (-0.69)	-0.180 (-0.81)	-0.331*** (-6.96)	-0.128 (-0.86)	-0.015 (-0.10)	-0.092 (-0.41)	-0.122 (-0.54)
Industry FE	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Obs.	139	137	137	136	136	139	137	137	136	136
Adjusted R ²	0.038	0.312	0.489	0.484	0.490	0.035	0.312	0.500	0.494	0.497

Table 6 – Continued

Panel B. Regressions of the tone of the MD&A in the spin-off prospectus on the number of shares traded by executives

Trading Window:	Dependent Variable: TONE_SPIN			
	0-3 month		0-filing month	
	(1)	(2)	(3)	(4)
SHARE_EXEC	-0.050** (-2.23)	-0.063*** (-2.61)	-0.069*** (-2.66)	-0.074*** (-2.82)
SHARE_NONEXEC		0.031 (1.40)		0.026 (1.09)
TONE_PAR10K	0.329*** (5.19)	0.338*** (5.34)	0.329*** (5.25)	0.333*** (5.32)
ROA _{t-1}	0.225 (1.25)	0.247 (1.38)	0.239 (1.36)	0.259 (1.47)
RET	0.158 (1.41)	0.159 (1.42)	0.149 (1.34)	0.158 (1.42)
SG	0.059 (0.41)	0.075 (0.52)	0.082 (0.58)	0.102 (0.72)
SIZE	-0.034 (-1.22)	-0.033 (-1.15)	-0.044 (-1.53)	-0.042 (-1.44)
ROA _t	0.266 (0.96)	0.194 (0.69)	0.237 (0.87)	0.176 (0.63)
RETVOL	0.360 (0.44)	0.480 (0.58)	0.196 (0.24)	0.341 (0.41)
EARNVOL	0.161 (1.36)	0.187 (1.57)	0.166 (1.42)	0.183 (1.55)
NSEG	0.018 (0.50)	0.020 (0.54)	0.021 (0.59)	0.022 (0.62)
Intercept	-0.127 (-0.56)	-0.156 (-0.69)	-0.049 (-0.21)	-0.089 (-0.38)
Industry FE	Yes	Yes	Yes	Yes
Obs.	136	136	136	136
Adjusted R ²	0.486	0.492	0.498	0.499

TONE_SPIN is the level of optimistic tone of the MD&A section in the spin-off prospectus. *VALUE_EXEC* (Panel A) or *SHARE_EXEC* (Panel B) is the log-transformation of net trading value or the number of shares traded, respectively. The trades are made by executives of the subsidiary either during the three-month period following the spin-off or during the zero to the first periodic filing month. *VALUE_NONEXEC* and *SHARE_NONEXEC* are same measures except for that the trades are made by non-executive insiders. “Executives” and “Non-executive insiders” are defined in Table 2. All other variables are described in the Appendix I. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 7. Multivariate Regressions, Tone Measure on Net Trades of Sub-samples of Executives of Spun-off Subsidiary

Panel A. Regressions of the tone of the MD&A in the spin-off prospectus on the trading value of pre-spin-off executive group (EPAR)

Trading Window:	Dependent Variable: TONE_SPIN					
	0-3 month			0-filing month		
	(1)	(2)	(3)	(4)	(5)	(6)
VALUE_EPAR	-0.031** (-2.25)		-0.031** (-2.21)	-0.044*** (-2.80)		-0.043*** (-2.68)
VALUE_NONEPAR		-0.010 (-0.38)	0.005 (0.20)		-0.028 (-0.85)	-0.013 (-0.40)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	136	136	136	136	136	136
Adjusted R ²	0.487	0.458	0.481	0.502	0.462	0.497

Panel B. Regressions of the tone of the MD&A in the spin-off prospectus on the trading value of pre-spin-off CEO, CFO, or General Counsel group (TEPAR)

Trading Window:	Dependent Variable: TONE_SPIN					
	0-3 month			0-filing month		
	(1)	(2)	(3)	(4)	(5)	(6)
VALUE_TEPAR	-0.036** (-2.38)		-0.034** (-2.08)	-0.052*** (-3.00)		-0.047** (-2.50)
VALUE_NONTEPAR		-0.022 (-1.13)	-0.006 (-0.28)		-0.041* (-1.72)	-0.017 (-0.68)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	136	136	136	136	136	136
Adjusted R ²	0.490	0.465	0.485	0.508	0.475	0.505

TONE_SPIN is the level of optimistic tone of the MD&A section in the spin-off prospectus. In Panel A, *VALUE_EPAR* is defined as the log-transformation of net trading value, where trades are made by executives of the subsidiary who have been executives in the parent prior to the spin-off. *VALUE_NONEPAR* is the same measure except for that the trades are made by executives of the subsidiary who have NOT been executives in the parent prior to the spin-off (e.g., lower level officers, outsiders). In Panel B, *VALUE_TEPAR* is defined as the log-transformation of net trading value, where trades are made by executives of the subsidiary who have been CEO, CFO, or General Counsel in the parent prior to the spin-off. *VALUE_NONTEPAR* is the same measure except for that the trades are made by executives of the subsidiary who have been other executives in the parent prior to the spin-off (e.g., COO, President, and EVP). The trades are made either during the zero to three-month period following the spin-off or during the zero to the first periodic filing month. Detailed definition of the insider groups are presented in Table 2. Control variables included in the model are identical to those included in Table 5. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 8: The Effect of Information Environment on the Relation between Tone and Insider Trading

INFO_Dummy =	Dependent Variable: TONE_SPIN					
	Trading Window: 0-3 month					
	Panel A. Industry Relatedness		Panel B. Relative Size		Panel C. Analyst Following	
	RELATE		BIGUNIT		HIGHANAL	
	(1)	(2)	(3)	(4)	(5)	(6)
VALUE_EXEC	-0.047*** (-2.74)		-0.040** (-1.97)		-0.033* (-1.73)	
VALUE_EXEC*INFO_Dummy	0.028 (1.20)		0.015 (0.62)		-0.006 (-0.26)	
VALUE_EPAR		-0.040** (-2.39)		-0.057** (-2.51)		-0.037* (-1.75)
VALUE_EPAR*INFO_Dummy		0.024 (0.97)		0.044* (1.73)		0.010 (0.38)
INFO_Dummy	-0.095 (-1.022)	-0.105 (-1.133)	0.187** (2.101)	0.140 (1.636)	0.069 (0.81)	0.050 (0.58)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	136	136	136	136	136	136
Adjusted R ²	0.490	0.480	0.522	0.521	0.482	0.473
F-Test (H₀: β₁ + β₂ = 0)						
Coefficient	-0.019	-0.016	-0.025	-0.013	-0.039	-0.027
F-Stat	0.89	0.56	2.24	0.72	4.58	2.60
P-Value	0.348	0.457	0.139	0.400	0.035	0.111

(1) $TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_EXEC*RELATE + \beta_3 RELATE + Controls$

(2) $TONE_SPIN = \alpha + \beta_1 VALUE_EPAR + \beta_2 VALUE_EPAR*RELATE + \beta_3 RELATE + Controls$

(3) $TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_EXEC*BIGUNIT + \beta_3 BIGUNIT + Controls$

(4) $TONE_SPIN = \alpha + \beta_1 VALUE_EPAR + \beta_2 VALUE_EPAR*BIGUNIT + \beta_3 BIGUNIT + Controls$

(5) $TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_EXEC*HIGHANAL + \beta_3 HIGHANAL + Controls$

(6) $TONE_SPIN = \alpha + \beta_1 VALUE_EPAR + \beta_2 VALUE_EPAR*HIGHANAL + \beta_3 HIGHANAL + Controls$

RELATE is an indicator variable that is equal to one if the spun-off subsidiary's 2-digit SIC code is equal to the parent's 2-digit SIC code and is equal to zero otherwise. *BIGUNIT* is an indicator variable that is equal to one if the *RELSIZE* measure is greater than or equal to the median value and is equal to zero otherwise. The *RELSIZE* is the ratio of the size of the spun-off subsidiary to the size of the parent. *HIGHANAL* is an indicator variable that is equal to one if the number of analyst following is greater than or equal to the median value and is equal to zero otherwise. The tone variable (*TONE_SPIN*), insider trading variables (*VALUE_EXEC*, *VALUE_NONEXEC*, *VALUE_EPAR*, *VALUE_NONEPAR*), and control variables included in the model are identical to those included in Table 6 and 7. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 9. The Effect of Institutional Selling on the Relation between Tone and Insider Trading

	Dependent Variable: TONE_SPIN									
	Trading Window: 0-3 month									
	All Institutions		Bank Trust		Insurance		Investment Advisor		Pension, Endowments	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VALUE_EXEC	-0.038**		-0.034**		-0.038**		-0.038***		-0.038***	
	(-2.49)		(-2.01)		(-2.43)		(-2.59)		(-2.60)	
VALUE_EXEC*ΔINSTOWN	0.025		0.265		-0.064		-0.058		-0.001	
	(0.27)		(0.57)		(-0.10)		(-0.47)		(-0.01)	
VALUE_EPAR		-0.033**		-0.024		-0.031**		-0.034**		-0.031**
		(-2.15)		(-1.46)		(-2.03)		(-2.32)		(-2.19)
VALUE_EPAR*ΔINSTOWN		-0.005		0.483		0.183		-0.070		-0.030
		(-0.05)		(0.97)		(0.26)		(-0.53)		(-0.21)
ΔINSTOWN	0.540**	0.502**	2.524**	2.296**	4.486**	4.093**	0.248	0.306	0.363	0.280
	(2.27)	(2.09)	(2.33)	(2.17)	(2.38)	(2.16)	(0.69)	(0.86)	(1.05)	(0.84)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	136	136	136	136	136	136	136	136	136	136
Adjusted R ²	0.510	0.495	0.523	0.513	0.518	0.507	0.482	0.475	0.487	0.473

$$TONE_SPIN = \alpha + \beta_1 VALUE_EXEC + \beta_2 VALUE_EXEC * \Delta INSTOWN + \beta_3 \Delta INSTOWN + Controls$$

$$TONE_SPIN = \alpha + \beta_1 VALUE_EPAR + \beta_2 VALUE_EPAR * \Delta INSTOWN + \beta_3 \Delta INSTOWN + Controls$$

$\Delta INSTOWN$ is the change of institutional ownership around spin-off, which is calculated by the institutional ownership of the parent company prior to the spin-off and the institutional ownership of the spin-off subsidiary after the spin-off. Models (1) and (2) use total institutional ownership, while models from (3) to (10) use ownership data of sub-samples of institutions (bank trust, insurance, investment advisor, and pension & endowments). The tone variable ($TONE_SPIN$), insider trading variables ($VALUE_EXEC$, $VALUE_EPAR$), and control variables included in the model are identical to those included in Table 5 and 6. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 10. The Effect of Institutional Selling on the Short-term Market Reaction to Spin-off

	Dependent Variable: AR1					
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta INSTOWN$	0.144 (1.62)					
$\Delta INSTOWN$ (Bank Trust)		0.339 (0.92)				0.209 (0.53)
$\Delta INSTOWN$ (Insurance)			0.206 (0.36)			0.072 (0.12)
$\Delta INSTOWN$ (Investment advisor)				0.112 (0.89)		0.156 (1.12)
$\Delta INSTOWN$ (Pension, Endowments, etc.)					0.101 (0.95)	0.143 (1.23)
ROA_{t-1}	0.119** (2.51)	0.130*** (2.74)	0.130*** (2.73)	0.126*** (2.64)	0.124*** (2.60)	0.118** (2.43)
SIZE	-0.006 (-0.71)	-0.004 (-0.42)	-0.005 (-0.54)	-0.005 (-0.55)	-0.005 (-0.62)	-0.006 (-0.65)
SG	-0.011 (-0.24)	-0.012 (-0.27)	-0.006 (-0.14)	-0.007 (-0.15)	-0.011 (-0.24)	-0.012 (-0.26)
Intercept	0.052 (0.93)	0.035 (0.64)	0.034 (0.62)	0.035 (0.64)	0.037 (0.68)	0.050 (0.88)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	137	137	137	137	137	137
Adjusted R ²	0.038	0.024	0.018	0.024	0.024	0.016

$$ARI = \alpha + \beta 1 \Delta INSTOWN + \beta 2 ROA_{t-1} + \beta 3 SIZE + \beta 4 SG + Year\ fixed\ effects$$

ARI is the monthly size-adjusted abnormal returns of the subsidiary during the first month following the spin-off. All other variables included in the model are identical to those included in Table 5 and 9. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.

Table 11. The Effect of Institutional Selling on Insider Trading Following Spin-off

Dependent Variable: VALUE_EXEC	
$\Delta INSTOWN$	1.710 (0.85)
ROA_{t-1}	-0.463 (-0.43)
SIZE	-0.459** (-2.44)
SG	-1.716 (-1.60)
TONE_SPIN	-1.574** (-2.09)
Intercept	4.131*** (3.41)
Industry FE	Yes
Obs.	137
Adjusted R ²	0.129

$$VALUE_EXEC = \alpha + \beta 1 \Delta INSTOWN + \beta 2 ROA_{t-1} + \beta 3 SIZE + \beta 4 SG + \beta 5 TONE_SPIN + \text{Industry fixed effects}$$

The insider trading variables (*VALUE_EXEC*), tone variable (*TONE_SPIN*), and control variables included in the model are identical to those included in Table 5 and 9. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. T-statistics are reported in parenthesis.