



Line-of-Business Disclosures and Spin-Off Announcement Returns

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Abstract. We investigated disclosure decisions by identifying a circumstance, the spin-off of a segment, where the benefits of disclosure should outweigh the costs. We compared the valuation revisions associated with spin-off announcements of firms with previous line of business disclosures to valuation revisions of firms making spin-off announcements without these disclosures. We found significant stock price increases associated with the spin-off announcement regardless of prior segment disclosure history. We also found, however, that the stock price increases were temporary for firms without prior segment disclosures, while the valuation revisions for firms with previous line-of-business disclosure information persisted.

Key words: disclosure, divestiture, spin-off, segment, valuation, returns

1. Introduction

Do managers act in the best interests of investors when they choose not to disclose segment data? Especially in light of favorable price effects from making such disclosures (Ronen and Livnat, 1981)? Theoretical models generally indicate that greater levels of disclosure yield higher firm valuations. Managers, however, must balance the benefits of disclosure against the possibility of competitive impairment and/or against their own personal interests. We investigated this disclosure dilemma by identifying a circumstance, the spin-off of a business segment, where the benefits of disclosure should outweigh the costs, and we compared the valuation revisions associated with such spin-offs for firms with and without prior line-of-business disclosures. We found that in the absence of segment data, the announcement of a corporate spin-off sends a negative signal to investors, and that shareholder wealth declines as a result.

Theoretical models and empirical evidence generally indicate that greater levels of disclosure result in a lower cost of capital and thus higher firm valuations (Jensen and Meckling,

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1976; Choi, 1973a, 1973b; Botosan, 1997; Milgrom, 1981; Baiman and Verrecchia, 1996). We identify, however, four possible reasons why managers might elect not to make segment disclosures: (1) the operations of a segment are not sufficiently material to meet reporting guidelines; (2) managers conclude that the benefits of disclosure are outweighed by the potential competitive costs; (3) managers maximize their own utility functions by reaping the benefits associated with firm size, while concealing information regarding under-performing units of the company; or (4) the operations of the segment overlap with the operations of other segments to such a degree that line-of-business reporting is not feasible.

When we consider the four reasons for non-disclosure in light of a spin-off, the likelihood that reason #1 applies is diminished by the reality that the segment was spun-off as a different company. Reason #2 is even less likely, since the segment is soon to become a separate company and as such its operations are soon to be publicly revealed. The likelihood that Reason #3 applies is, on the other hand, a function of management's competency and/or veracity. Note that *under-performing* does not necessarily mean the segment is generating losses. Rather, the segment may contribute positively to the parent firm's earnings, but that contribution may be insufficient to justify the cost of capital implied in the firm's stock price. Maydew, Schipper and Vincent (1999) note that given managers' preference for firm size, the choice of a spin-off rather than a sell-off indicates that "managers believe the divested unit cannot be sold for its full value" (1999, 138). Alford and Berger (1999) also assert that managers focused on firm value rather than self-interest would tend to favor a sell-off over a spin-off. Reason #4, likewise, calls management's competency into question, because if the couplings between the spun-off unit and other operational units within the parent firm are so extensive that the operations cannot be segregated for financial reporting purposes, then how can the segment be spun off operationally? The above suggests that managers might, *ceteris paribus*, use a combination of non-disclosure and spin-off to divest under-performing business segments.

Managers make decisions regarding whether or not to release segment-data (within the constraints of generally accepted accounting principles) based on their assessment of the information conveyed by those data. Disclosure decisions are further complicated by the likelihood that line-of-business data, once disclosed, must continue to be disclosed, for failure to maintain such disclosures would surely send a negative signal to investors. Given these constraints, it seems likely that managers would choose to disclose segment data only when they expect it to convey positive information. Likewise, managers would avoid disclosures containing negative signals. Thus constrained, a manager wishing to divest an under-performing segment would likely utilize a spin-off rather than a sell-off and more importantly, would have previously elected not to disclose the operational data for the segment being spun-off.

We investigated the response of securities markets and, indirectly, the market's intuition regarding management quality, to the decision to disclose the operations of segments. We identified firms that did, and did not, disclose line-of-business information prior to the announcement of a spin-off, and compared their valuation revisions at the time of the spin-off announcement and over a time-period following the announcement. We found the persistence of the valuation revisions to be related to the existence of pre-announcement, line-of-business disclosures regarding the segment to be divested. The result was robust to

controls for the similarity/dissimilarity of the segment's line-of-business to that of the parent.

We concluded from these results, that when managers chose not to disclose line-of-business data for the object of a spin-off, they may be attempting to achieve the *inconspicuous* divestiture of an under-performing unit. We likewise conclude that this lack of disclosure conceals the value of the firm from investors. Consequently, we assert that managers would serve shareholder interests best, although perhaps not their own, by choosing to make more detailed line-of-business disclosures regarding their firms, regardless of the performance of the segments.

2. Spin-off announcements and market reaction

Schipper and Smith (1983), Miles and Rosenfeld (1983), Hite and Owers (1983), Johnson et al. (1995), Allen et al. (1995), and Maydew, Schipper and Vincent (1999) provide evidence of significant positive abnormal returns accruing to parent firms around spin-off announcements. Others, notably Vijh (1994) and Copeland, Lemgruber and Mayers (1987), show that comparable abnormal returns are earned around spin-off ex-dividend dates. Still other research finds positive abnormal returns up to three years subsequent to a spin-off (Cusatis, Miles and Woolridge, 1993). Several explanations for the increases in firm value generally associated with the announcement of a spin-off have been hypothesized and tested. These include: wealth transfers from bondholders to shareholders, tax benefits, management efficiencies, corrections of prior acquisition mistakes, changes in governance and/or control practices, general contracting efficiencies brought about by the spin-off, investor psychology (over-optimism, improper weighting of information, weak market-efficiency), and the existence of investor clienteles (Vijh, 1994; Miller, 1977, 1978, 1989, 1995; Schnabel, 1992).

The *clientele* argument rests on the notion that share prices increase in response to a corporate divestiture, because different investor clienteles exist for each component of a diversified corporate entity. Guenther (1994), Jordan (1984), Litzenberger and Rolfo (1984), and Schaefer (1982) provide empirical evidence that investor clienteles do exist. The implication here is that if investors are aware of segment performance prior to the announcement of a spin-off, then share prices will remain constant or increase, regardless of whether the spin-off segment over-performs, under-performs, or generates *losses*. This *clientele theory* is of particular interest to our investigation, in that it may, when coupled with a general propensity to overreact to new information, explain the initial response of securities markets to spin-off announcements when segment disclosures are absent. It may also explain, if uncertainty is triggered by a lack of disclosure, why spin-off announcement valuation revisions may revert to pre-announcement levels in the post-announcement period.

Although some studies have found evidence to support specific explanations for the stock price increase associated with spin-off announcements, none have fully explained the market reaction. For example, Maxwell and Rao (2003) found that a transfer of wealth from bondholders to shareholders accounted for a portion of spin-off announcement valuation revisions, but neither Schipper and Smith (1983) nor Hite and Owers (1983) found evidence supporting that explanation.

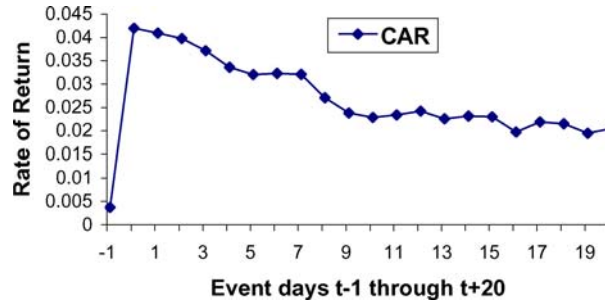


Figure 1. Cumulative abnormal returns (CAR) for firms announcing a spin-off, from 1 day prior to the announcement ($t - 1$) through 20 days subsequent to the announcement ($t + 20$).

(Notes: Abnormal Returns (ARs) are the CRSP reported *Excess Daily Returns* for each day of the event horizon. The event horizon extends from the day prior to the spin-off announcement through twenty trading days after the announcement. Cumulative abnormal returns (CARs) begin the day prior to the spin-off announcement day.)

There is, however, considerable evidence that securities markets overreact to *events* (DeBont and Thaler, 1985, 1987; Lee, Shleifer and Thaler, 1991; Lakonishok, Shleifer and Vishny, 1994, 1995; LaPorta, 1996), and the distinct possibility exists that security markets may overreact to spin-offs, particularly, when considered in light of market reactions to an event that has a good deal of similarity to a spin-off: initial public offerings (IPOs). Market reaction to IPOs is generally characterized by increases in price above the IPO offer price followed by a period of negative returns (Ritter, 1991; Levis, 1993; Loughran and Ritter, 1995; Brav and Gompers, 1997; Jain and Kini, 1994, Asquite, Jones and Kieschnick, 1998; Carter, Dark and Singh 1998; Penman, 2004). Why markets behave in this manner has been the subject of numerous studies, but to date the issue remains open to further study.

Given the valuation pattern documented in IPO studies, it should not be surprising that Hite and Owers (1983), Rosenfeld (1984) and Slovin, Suska and Ferraro (1995) found evidence of negative returns between the spin-off announcement date and the ex-dividend date, a phenomenon that we too observe (Figure 1 depicts the cumulative abnormal returns for a sample of spin-offs over the period beginning one day prior to the announcement of the spin-off through 20 days subsequent to that announcement). Not all of the evidence, however, is consistent with a pattern of negative returns subsequent to a spin-off announcement. Miles and Rosenfeld (1983) and Cusatis, Miles and Woolridge (1993), found some evidence of positive post announcement returns.

While much effort has been expended in attempts to explain announcement day excess returns, little has been done to investigate this post-announcement drift. Perhaps this is because the drift has not generally been found to be significant at traditional levels, or because the drift has not always been either positive or negative. Whatever the reason, no studies have heretofore related the behavior of post-announcement drift to conditions present at the time of the spin-off announcement.

Hearth and Zaima (1986) suggest that the announcement of a corporate divestiture creates three valuation uncertainties that lead to an under or over estimation of value: (1) the possibility a divestiture will be canceled; (2) the possibility that the terms of the divestiture

will change; and (3) a lack of evidence regarding the benefits of the divestiture. The first two of these elements can perhaps explain the positive valuation revisions associated with spin-off ex-dividend dates found by Vijn (1994) and Copeland et al. (1989). The last element, the absence of financial evidence regarding the benefits of a divestiture, coupled with evidence of market overreaction, may explain the phenomenon of post-announcement drift. Indeed, subsequent to the spin-off announcement, but prior to the ex-dividend date, shareholders have exactly the same claims on the enterprise that they held prior to the spin-off announcement. In the absence of disclosure regarding the spin-off segment, shareholders are unable to reevaluate the company's operations, and thus the firm's value should, at best, remain unchanged. This uncertainty, coupled with the potential that the spin-off is a *stealth* divestiture (the disposal of assets without an ex-ante determination of the transaction price), and any uncertainty about the quality of future disclosures triggered by a perceived lack of management honesty, is likely sufficient to dampen any positive speculation regarding the firm's future

3. Hypotheses

We expect that shareholders interpret the announcement of a spin-off differently depending on whether disclosures existed prior to the spin-off announcement. For those firms with prior disclosure information, clientele theory would suggest an increase in stock prices at the announcement, because shareholders will soon hold shares in two firms with different investor clienteles. Spin-offs without prior segment disclosures would, on the other hand, be interpreted as managers attempting to divest an under-performing segment without having to disclose a transaction price. We would thus expect spin-off announcement returns to be significantly higher for firms with prior segment disclosures than for firms lacking such disclosures. If the market is highly efficient we expect to see this occur on the day the spin-off is announced. If, however, the market reaction to spin-offs is similar to the market reaction to IPOs, then the effect may not be observable until after the announcement day.

Our first hypothesis is that spin-off announcement security returns are positively associated with the existence of line-of-business accounting disclosures at the time of the spin-off announcement:

$$H_{1A}: ACAR_{lj} > ACAR_{li}, \quad (1)$$

(where ACAR is the two-day cumulative abnormal return of the spin-off parent firm on the day before and day of the spin-off announcement date, l_i and l_j are the levels of accounting disclosure for firms i and j respectively, and $l_i < l_j$). If investor overreaction similar to market reaction to IPOs dominates, then it is anticipated that the effect will be short-lived and that the post spin-off announcement CARs will be positively associated with the existence of line-of-business accounting disclosures during the post announcement period:

$$H_{1B}: PCAR_{lj} > PCAR_{li}, \quad (2)$$

(where PCAR is the cumulative abnormal return from the day after the spin-off announcement day through four weeks of trading and l_j is as defined above).

We note, as above, that the existence of investor overreactions, or the positive impact of divesting a non-synergistic segment, may work against our finding results for this first hypothesis. While we have no mechanism for testing these various explanations directly, our results may provide some guidance as to which explanation has the stronger influence on announcement day returns. It should also be noted that “overreactions,” by their nature, are short-term phenomena. We therefore expect that any effect of these factors will be dissipated in the post announcement period, and thus not have an influential impact on our results.

4. Methodology

Our sample firms were distinguished by identifying firms with transactions coded as non-cash stock dividends from the *CRSP Daily Master File*, and firms paying dividends in the stock of another company from *Moody's Dividend Record*. Actual spin-offs were culled from the resulting list, by examining *Moody's Industrial Manual*, and searching the *Dow Jones News Wire*. A total of 160 Spin-offs announced during the period January 1, 1980 through December 31, 1993 were identified.

To be included in the sample, each of the spin-off units must have had a parent firm that was a NYSE/AMEX traded entity listed on the *CRSP Excess Daily Returns File* during the period of analysis (none of the spin-offs identified were excluded based on this data screen). In addition, each of the spin-offs: (1) must have been voluntary rather than directed by a regulatory agency (two transactions excluded); (2) could not be part of a liquidation or bankruptcy proceeding (six transactions excluded); (3) could not be announced coincident with earnings, dividends, or other major news announcements related to the parent firm (30 transactions excluded); and (4) the stock of the spun-off unit must have been free to trade separately and not paired for trading purposes with the stock of the parent (four transactions excluded).

The resulting sample consists of one-hundred-eighteen spin-offs, divested by 114 different parent companies. All of the spin-offs were tax-free transactions. The size of the spin-off units (as measured by the proportion of equity value spun-off) was widely dispersed, with values ranging from 0.3 percent to 84 percent. The median size of the spin-offs was 13.9 percent. The spin-offs were also diverse with respect to industry representation, with the largest group (eight spin-offs) falling within the crude oil and natural gas classification (SIC 1311).

Spin-offs usually involve more than one announcement. Typically, the announcement of an intention to spin-off part of a firm is followed by an announcement of the transaction's completion. In all such cases, the first announcement is taken to be the event date, hereafter referred to as $t = 0$.

The announcement/effective date of the transaction is taken from *Dow Jones News Wire and the Broadtape Transcripts*. This service provides the date and time of the announcement, making it possible to verify whether the announcement was made after the market's closing. If such an announcement was made after closing or on a non-trading day, the event date is defined as the next trading day.

Schipper and Smith (1983), Hite and Owers (1983), and Miles and Rosenfeld (1983) used long event periods to be certain they captured the market's reaction to spin-offs, in

their respective studies. Their results indicate that the response of equity markets to spin-off announcements is concentrated on the announcement day. Since one of our hypotheses focuses on the post announcement period, we employ a somewhat longer period—one month of trading days—with tests broken into daily and weekly increments.

Some of the spin-offs identified, however, were announced and completed within even this brief an event window. Since prior research has shown an ex-dividend day response equal to or greater than the spin-off announcement response (Copeland, Lemgruber and Mayers, 1987; Vijh, 1994), those firms completing their divestiture within the four-week period were removed from the sample. Imposition of this data screen resulted in the loss of six observations, for a base sample of 112 announcements.

Some firms had missing data for specific trading dates, which limited our ability to compute cumulative returns for all sample observations in each period analyzed. All 112 observations (above) are included in tests on announcement-day, and one-week cumulative returns. One observation is excluded from the sample beginning in week 2. Two more observations are excluded from the sample beginning in week 3. Three additional observations are excluded from the sample for week 4 only. Thus, our tests are conducted on samples of 112, 111, 109 and 106 observations for the one, two, three and four week periods respectively. The result of these exclusions was a reduction of two observations in each of the three disclosure groups.

Miles and Rosenfeld (1983) found a positive relation between the relative size of the spin-off component and spin-off announcement returns, hence we control for size effects by including relative size in our explanatory model. As in Hite and Owers (1983), the proxy for the portion of the parent's equity value spun-off [SIZE] is:

$$SIZE = \alpha P_s / (P_p + \alpha P_s), \quad (3)$$

where α is the number of spin-off unit shares issued per original parent share, P_s is the distribution value of each share of the spin-off unit which must be established by the board of directors as of the ex-dividend date, and P_p is the ex-dividend value of the parent company shares.

Classification of pre spin-off level of disclosure (LODI) was undertaken by examining all segment disclosures (including the *Management Discussion and Analysis*) in the parent companies' annual reports immediately preceding the spin-off announcements. Other documents filed by parent firms with the SEC (i.e., 10-Qs, 8-Ks) were also examined for disclosure information.

In the process of checking the aforementioned sources for the availability of pre-spin-off accounting information, three natural disclosure levels surfaced:

1. Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14 (39 spin-offs), hereafter LODI₁.
2. Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement (44 spin-offs), hereafter LODI₂.
3. Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements (29 spin-offs), hereafter LODI₃.

More specifically, $LODI_1$ is defined as: no specific accounting data for the segment was disclosed prior to the spin-off announcement, or existing accounting data related to the spin-off unit could not be distinguished from two or more segments in the annual reports and/or other SEC documents. This is not meant to suggest that $LODI_1$ firms failed to comply with generally accepted accounting principles (GAAP). Rather, these firms may have: (1) considered the firms' activities to be a single line-of-business (i.e., they reported no segments); (2) combined data for the spin-off segment with another segment of the enterprise (i.e., the segment disclosures were not *sufficiently fine* to reveal information about the spin-off segment); or (3) the spin-off segment may not have met the threshold requirements of SFAS 14 (e.g., 10% of sales).

$LODI_2$ is defined as: the five financial items required by SFAS 14 (revenues, operating income, identifiable assets, depreciation expense, and capital expenditures) were the only items reported for the spin-off segment(s) prior to the spin-off announcement. $LODI_3$ is defined as: the pre-spin-off data for the spin-off unit exceeds that required by SFAS 14, including (but not constrained to), complete financial statements. The preponderance of $LODI_1$ and $LODI_2$ firms is consistent with Gilson et al. (1997) who found that a relatively low incidence of firms providing detailed segment disclosures prior to a spin-off.

Abnormal returns (AR_{it}) are extracted from the *CRSP Excess Daily Returns File* for the sample firms for each day of the event horizon. The event horizon extends from the day prior to a spin-off announcement through twenty trading days after the announcement. A two-day excess-return ($ACAR_{i,T}$) on days $-1,0$ is used to test our first hypothesis. Our second hypothesis is tested using cumulative abnormal returns ($PCAR_{i,T}$) beginning the day after the spin-off announcement, through T equal to 5, 10, 15, and 20 days subsequent to the announcement.

We employ analysis of variance to test our hypotheses. Specifically, we compute least-squares means [LSM] for the abnormal returns at each level of disclosure using the *SAS General Linear Model* [GLM] procedure. Least-squares means are "estimates of the marginal means that would be expected had the design been balanced" (SAS, 908). This procedure was chosen because the numbers of observations in each of our classification groups ($LODI$) were not equal. We then test the hypotheses, $H_0: LSM_{(i)} = 0$ and $H_0: LSM_{(i)} = LSM_{(j)}$ for announcement-day, one-week, two-week, three-week and four-week CARs. The variable $SIZE$ is treated as a covariate in the model.

5. Results

Descriptive statistics for the $SIZE$ variable are presented in Table 1. The mean proportion divested is 24.7 percent, with a range of .3 to 84.4 percent. The means and range are nearly equal across each of the sample partitions.

ACARs and PCARs for the sample are presented in Table 2. The CARs from one day prior to the announcement day are graphed in Figure 1. The results are consistent with prior research in that there is a significant, positive price response at the spin-off announcement, followed by a negative post-event drift. Fifteen of the 112 post announcement excess returns are negative, only one of them significantly different from zero. Over the entire four-week window however, the total return remains positive ($CAR = 0.015$).

Table 1. Descriptive statistics for the size of the segment being spun-off by parent firms (i.e. proportion divested), by the level of pre spin-off announcement segment disclosures

Level of disclosure	Mean	Range	Standard deviation
All sample firms	0.247	0.844–0.003	0.234
No disclosure specific to spin-off(s): LODI ₁	0.246	0.810–0.003	0.226
Disclosures consistent with SFAS 14: LODI ₂	0.213	0.806–0.015	0.213
Disclosures consistent with SFAS 131: LODI ₃	0.304	0.844–0.005	0.274

Notes: $SIZE = \alpha P_s / (P_p + \alpha P_s)$, where α is the number of spin-off unit shares issued per original parent share, P_s is the distribution value of each share of the spin-off unit which must be established by the board of directors as of the ex-dividend date, and P_p is the ex-dividend value of the parent company shares. LODI₁ = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI₂ = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI₃ = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.

Table 2. Abnormal returns (AR) and cumulative abnormal returns (CAR) for sample firms over selected trading days surrounding the announcement of a spin-off

Day	Average AR	t AR = 0 (p-value)	CAR	t CAR = 0 (p-value)
-1	0.004	1.699 (.092)		
Spin-off announcement	0.037	6.849 (.000)	0.040	7.248 (.000)
+1	-0.002	-0.619 (.537)		
+2	-0.001	-0.328 (.743)	-0.002	-.645 (.520)
+3	-0.003	-1.383 (.169)	-0.005	-1.354 (.178)
+4	-0.003	-1.298 (.197)	-0.008	-1.887 (.062)
+5	-0.002	-0.917 (.361)	-0.010	-2.081 (.040)
End of week two	-0.003	-1.544 (.125)	-0.019	-3.044 (.003)
End of week three	-0.000	-0.494 (.621)	-0.022	-2.701 (.008)
End of week four	-0.002	-1.128 (.261)	-0.026	-2.989 (.004)

Notes: Abnormal Returns (ARs) are the CRSP reported Excess Daily Returns for each day of the event horizon. The event horizon extends from the day prior to the spin-off announcement through twenty trading days after the announcement. Post announcement cumulative abnormal returns (CARs) begin the day after the announcement day.

Announcement CARs for parent firms for the three different levels of disclosure (LODI), are summarized in Panel A, of Table 3. All three of the ACARs are positive and significantly different from zero. The average announcement-day, abnormal return is .037. This is consistent with the prior spin-off literature (Hite and Owers, 1983; Daley, Mehrotra and Sivakumar, 1997). No differences are discernible between the ACARs of the three LODI groupings.

Post announcement CARs, however, tell another story. The PCARs for LODI₁ firms have a negative drift. This negative drift becomes significantly different from zero by day five. A complete reversal of the significant, positive, announcement-day excess return takes place by about day ten. PCARs for LODI₂ firms also exhibit a negative drift. That drift becomes marginally significant by day 15. LODI₃ firms, however, experience no negative drift in excess returns.

Table 3. Cumulative abnormal returns (CAR) for sample firms over selected trading periods surrounding the announcement of a spin-off, by level of disclosure

LODI	Day	Average CAR	N	t value (CAR = 0)	p-value
	Panel A			Announcement CARs	
LODI ₁	Two	+0.044	39	+3.893	.000
LODI ₂	Day CAR	+0.046	44	+4.358	.000
LODI ₃	-1,0	+0.041	29	+5.218	.000
	Panel B			Post announcement day CARs	
LODI ₁	End of week one	-0.026	39	-2.253	.030
LODI ₂		-0.006	44	-0.743	.406
LODI ₃		+0.000	29	+0.058	.955
LODI ₁	End of week two	-0.039	38	-3.547	.001
LODI ₂		-0.009	44	-0.880	.384
LODI ₃		-0.004	29	-0.473	.640
LODI ₁	End of week three	-0.046	37	-3.298	.002
LODI ₂		-0.024	44	-1.817	.076
LODI ₃		+0.018	28	+1.281	.212
LODI ₁	End of week four	-0.044	36	-3.147	.003
LODI ₂		-0.022	42	-1.547	.130
LODI ₃		+0.007	28	+0.467	.644

Notes: Abnormal Returns (ARs) are the CRSP reported *Excess Daily Returns* for each day of the event horizon. The event horizon extends from the day prior to the spin-off announcement through twenty trading days after the announcement. Post announcement cumulative abnormal returns (CARs) begin the day after the announcement day. Each "Week" consists of five trading days. LODI₁ = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI₂ = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI₃ = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.

The CARs of LODI₁ firms are of considerable significance to the implications of our study. Not only are the CARs for this group negative and significantly different from zero over each of the event windows, the firms in this group are in fact worth less at the end of the four-week period than they were prior to the announcement of the spin-off. This finding is consistent with our conjecture that managers will be perceived as having concealed—through their lack of disclosure—an under-performing segment of the firm.

The relation between CARs over the total event window and the three levels of spin-off segment disclosures (LODI₁, LODI₂ and LODI₃) is depicted in Figure 2. Again, it is evident that while initial LODI₃ returns (those associated with the spin-off announcement), persist over the study's four-week announcement window, initial returns for LODI₂ and LODI₁ firms exhibit negative drift in the post announcement period.

To test the relation between level of disclosure and CAR (ACAR and PCAR) for statistical significance, and to control for the influence of spin-off size on announcement returns, CARs are modeled as the dependent variable in the following general linear model:

$$A(P)CAR = f(\text{LODI} | \text{SIZE}) \quad (4)$$

Tests of the equality of the mean CARs (by each level of disclosure) were conducted. The results of these tests are presented in Table 4. The data in Table 4, columns 4 through 6, are

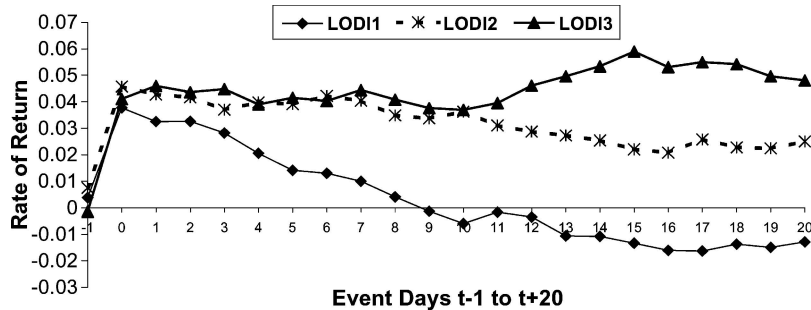


Figure 2. Cumulative abnormal returns for firms announcing a spin-off, from 1 day prior to the announcement through 20 days subsequent to the announcement, by level of disclosure (LODI). (Notes: Abnormal Returns (ARs) are the CRSP reported Excess Daily Returns for each day of the event horizon. The event horizon extends from the day prior to the spin-off announcement through twenty trading days after the announcement. Cumulative abnormal returns (CARs) begin the day prior to the spin-off announcement day. LODI₁ = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI₂ = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI₃ = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.)

presented in much the same fashion as a correlation matrix, however instead of correlations, probabilities associated with the equality of means are presented.

Tests of the equality of means shows that announcement CARs (ACARs) do not differ across LODI groupings. By the end of week one, however, we see a significant difference in post-announcement CARs (PCARs) between firms with ex-ante SFAS 131 type (line-of-business) disclosures and firms with no ex-ante disclosures concerning the unit to be spun-off. This difference persists throughout the time period. There is also some indication that post announcement CARs behave differently for firms with SFAS 14 type disclosures than for firms with disclosures more in line with those called for in SFAS 131. SIZE is a significant explanatory variable when the dependent variable is ACAR, the larger the size of the spun-off unit the greater the announcement excess return. SIZE does not, however, provide explanatory power for any of the PCAR dependent variables.

Given the relatively long test period (1980–1993), it may be the case that our results are biased by changes in disclosure patterns over time: e.g., LODI₁ spin-offs could be predominately in the 1980s while LODI₃ spin-offs could be predominately in the 1990s. We investigated this possibility by examining the frequencies of our classifications by year. Table 5 presents these frequencies over five intervals. A Chi-square test indicates that there are no statistically significant differences in the distribution of our classifications by period (*p-value* 0.319).

Table 6 presents descriptive statistics for pre-announcement market capitalization by LODI. The LODI₁ and LODI₃ groups are virtually identical in terms of mean, median, range and dispersion. The LODI₂ group firms, however, appear to be somewhat smaller than the other two, both in terms of total market capitalization and in the dispersion of observations.

Table 4. Tests of our hypothesis that cumulative spin-off announcement security returns (CAR) are positively associated with the existence of line-of-business accounting disclosures (LODI), controlling for the proportion of the firm divested (SIZE)—i.e., equality of mean CARs, by LODI in the Model: $CAR = f(\text{LODI} | \text{SIZE})$

Ending day of CAR	LODI	Least squares mean	Pr ^a > t		
			1	2	3
Spin-off announcement	1	0.044		0.755	0.598
	2	0.049	0.755		0.421
	3	0.036	0.598	0.421	
End of week one	1	-0.021		0.136	0.135
	2	-0.003	0.136		0.847
	3	-0.001	0.135	0.847	
End of week two	1	-0.039		0.047	0.032
	2	-0.010	0.047		0.675
	3	-0.001	0.032	0.675	
End of week three	1	-0.047		0.227	0.003
	2	-0.010	0.227		0.046
	3	0.018	0.003	0.046	
End of week four	1	-0.048		0.191	0.016
	2	-0.025	0.191		0.187
	3	0.009	0.016	0.187	

Notes: $\text{SIZE} = \alpha P_s / (P_p + \alpha P_s)$, where α is the number of spin-off unit shares issued per original parent share, P_s is the distribution value of each share of the spin-off unit which must be established by the board of directors as of the ex-dividend date, and P_p is the ex-dividend value of the parent company shares. Abnormal Returns (ARs) are the CRSP reported *Excess Daily Returns* for each day of the event horizon. The event horizon extends from the day prior to the spin-off announcement through twenty trading days after the announcement. Post announcement cumulative abnormal returns (CARs) begin the day after the announcement day. Each "Week" consists of five trading days. LODI_1 = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI_2 = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI_3 = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.

In order to control jointly for the size of the entity prior to the spin-off announcement (market capitalization), and the portion of the entity being spun-off, the data were modeled:

$$\text{CAR} = f(\text{LODI} | \text{SIZE}, \text{Market Capitalization}) \quad (5)$$

where market capitalization is the pre-announcement price per share of common stock times the pre-announcement number of common shares outstanding. To further control for potential interactions between the portion of the firm being spun-off and the level of disclosure made for the segment, the data were also modeled:

$$\text{CAR} = f(\text{LODI} | \text{SIZE}, \text{LODI} * \text{SIZE}) \quad (6)$$

The results were substantially identical to those presented in Table 4 for each of these alternative specifications.

Sub-samples of 48 spin-offs for which information regarding the taxability of spin-off dividends to recipients was revealed coincident with the spin-off announcement, and 59

Table 5. Frequencies of the sample spin-off segments' levels of disclosure (LODI) by year, and chi-square tests of differences in those frequencies by year

Frequency percent row percent column percent	LODI ₁	LODI ₂	LODI ₃	Total
1979–1980	3	5	5	13
	2.68	4.46	4.46	11.61
	23.08	38.46	38.46	
	7.69		11.36	17.24
1981–1983	12	15	4	31
	10.71	13.39	3.57	27.68
	38.71	48.39	12.90	
	30.77	34.09	13.79	
1984–1986	8	12	7	27
	7.14	10.71	6.25	24.11
	29.63	44.44	25.93	
	20.51	27.27	24.14	
1987–1989	12	7	6	25
	10.71	6.25	5.36	22.32
	48.00	28.00	24.00	
	30.77	15.91	20.69	
1990–1992	4	5	7	16
	3.57	4.46	6.25	14.29
	25.00	31.25	43.75	
	10.26	11.36	24.14	
<i>Statistic</i>		<i>DF</i>	<i>Value</i>	<i>Prob</i>
Chi-square		8	9.2793	0.3193
Likelihood ratio chi-square		8	9.3471	0.3139
Mantel-haenszel chi-square		1	0.1539	0.6949

Notes: LODI₁ = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI₂ = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI₃ = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.

spin-offs for which stated reasons for the divestiture (e.g., contracting efficiency, financing, or valuation enhancement) were analyzed. Neither grouping helped explain variation in the spin-off announcement day return, or the post-announcement reaction.

Prior research has suggested that variations in spin-off announcement-day returns and post spin-off announcement drift may be related to the extent to which firms divest themselves of segments in diverse industries (i.e., those with no readily apparent synergies). Daley, Mehrotra and Sivakumar (1997) found that spin-offs in which the parent and the spun-off unit have different two digit industry codes have greater announcement day excess returns than do firms in the same industry. Three of the spin-off units in our sample had the same four-digit SIC code as the parent. Eleven had equal three-digit SIC codes, and four had equal two-digit codes. Thus, Daley, Mehrotra and Sivakumar (1997) would consider eighteen of our firms as same industry spin-offs. We tested for differences between the two relatedness

Table 6. Descriptive statistics for pre-announcement market capitalization by level of disclosure (LODI)

	LODI ₁	LODI ₂	LODI ₃	Total
<i>N</i>	39	44	29	112
Mean	1,743,611	679,353	1,836,799	1,388,908
Median	750,809	133,803	748,136	399,534
Std Dev	2,761,322	1,235,746	3,052,931	2,423,464
Skewness	3.15	2.71	2.93	3.41
Range	14,308,339	5,735,976	13,022,547	14,345,337
Interquartile range	1,712,799	487,352	1,816,079	1,564,108

Notes: LODI₁ = Available accounting information for the spin-off unit prior to the spin-off announcement is less than the items listed in SFAS 14. LODI₂ = Only the five items required by SFAS 14 are reported for the spin-off segment prior to the spin-off announcement. LODI₃ = Available accounting information for the spin-off unit prior to the spin-off announcement exceeds SFAS 14 requirements.

groups and found no significant difference. The average announcement day excess return was .0423 for same industry spin-offs and .0369 for cross industry excess returns.

We tested for observations that might be overly influential by calculating Dffits and Rstudents statistics for each observation in each regression. Observations with a Dffits score (absolute value) greater than 0.5, and/or an Rstudents statistic (absolute value) greater than 2.0 were deleted from the sample for that regression. The number of observations deleted due to these criteria were: 2, 2, 1, 1 and 1 for the announcement window, one-week window, two-week window, three-week window and four week windows respectively. The regressions (both with and without the dummy indicator variable for (Dis)Similar industry) were then re-run without these observations. The dummy variable for (Dis)Similar SIC code was again not significant in any of the regressions, and the results were substantially identical to those reported in Table 4.

6. Summary and conclusions

Consistent with prior research, and with what some refer to as market “over reaction,” the results of this study show a four-percent, announcement day reaction for a sample of 112 voluntary spin-offs. Our first hypothesis was not supported, in that no significant differences were found between the announcement CARs for different levels of pre-spin-off segment disclosure. This is not particularly surprising given the paucity of support for various explanations of the announcement day phenomenon. Our results do indicate, however, that whatever the underlying cause of the reaction (wealth transfers, taxes or overreactions), it has a greater influence on announcement day returns than does the existence of prior financial data.

Our second hypothesis, that the post-announcement drift would be negatively associated with ex-ante disclosures concerning the unit being spun-off, was supported. Those firms whose managers chose not to make ex-ante segment disclosures about the operating unit

they intended to divest experienced not only a reversal of the announcement reaction, but a net decline in firm value. These findings are consistent with information about the spin-off segment being impounded into price over the period between the announcement of the spin-off and the ex-dividend date. When segment information is not disclosed in prior financial statements, managers may be perceived as having concealed an under-performing segment through their lack of disclosure. In contrast, the post announcement drift for those firms whose managers chose to make line-of-business segment disclosures prior to the divestiture announcement was essentially flat. For those firms, announcement day price revisions persisted, and the firms ended the period with an increase in value.

Taken together, these results illuminate how financial disclosures impact the phenomena of divestiture-related stock returns. They provide guidance for managers, in that attempts at *inconspicuous* divestiture will be punished through lower stock prices. Further, they provide guidance for stakeholders in assessing managerial performance through the existence/non-existence of line-of-business disclosures, and making post-divestiture-announcement investment decisions. An interesting extension of this study might be a market micro-structure examination of trading patterns over the minutes and hours following a spin-off announcement. Such a study could investigate the relative efficiency of the security markets' response to the spin-offs of undisclosed segments by more precisely measuring the lag between announcement and negative drift, as well as charting the types (odd-lot, round-lot or block), volume and patterns of trading following the announcement.

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