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Sources of Hidden Value and Risk Within Tracking Stock

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Tracking stock for a unit of a firm presumably allows the market to value and monitor that unit independently of the rest of the firm. Announcement of the creation of tracking stock elicits an abnormal share price response of 2.17% on average over a two-day period. The share price response at the time of the announcement is more favorable: when the voting rights of the tracking stock are based on a market valuation; when the parent company's debt ratio is relatively low; when the parent's previous stock performance is relatively poor; and when the parent is not engaging in an acquisition. These results are consistent with reduction of agency problems. At the same time, firms that create tracking stock do not experience higher long-term valuations, suggesting that agency problems are not resolved with the creation of tracking stock.

"...go.com will unlock the value and potential of our combined Internet assets..."
- CEO Michael Eisner on Disney's announcement it would issue a tracking stock

A relatively recent form of financial engineering is tracking stock, which creates a class of common stock whose value is tied to a specific business unit of a corporation. Tracking stock follows on the popularity of carve-outs and spin-offs, seen as successful in creating value. Skeptics suggest that mere financial innovation does not add value. Tracking stock is distinct from carve-outs and spin-offs in that the unit remains completely controlled by the parent, posing special agency and information asymmetry implications. While tracking stock has some characteristics that may be able to reduce asymmetric information and agency costs, and thereby unlock "hidden value," these same characteristics can actually give rise to new types of information asymmetries and agency problems.

We seek to identify agency- and information-related sources of any hidden value that can be released with the creation of tracking stock and to test empirically whether the hidden value is conditioned on these sources. We also test for changes in risk upon issue of tracking stock, and examine whether any shift in risk is conditioned on information- and agency-related sources.

We find that announcement of the creation of tracking stock elicits a favorable market reaction. The market's initial revaluation is more favorable when: 1) the voting rights of the tracking stock are based on a market valuation; 2) the parent company's debt ratio is relatively low; 3) the parent's previous stock performance is relatively poor; and 4) the parent is not undergoing an acquisition. Each of these relationships is consistent with the idea that tracking stock reduces agency problems. We also find that firms issuing tracking stock under-perform comparable firms over a longer time horizon.

I. Background on Tracking Stock

Tracking stock is created when the board of directors proposes and the shareholders approve

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a new class of stock whose value is linked to a unit of the corporation. Upon shareholder approval, the parent corporation and the tracking unit file separate financial data with the Securities and Exchange Commission. The value of the tracking unit is related to the specific performance of the unit, which can pay dividends to shareholders independent of the parent corporation. If tracking stock represents merely the cash flows of the tracking unit, then the value of the parent corporation should be its value before issue of the tracking stock minus the value of the tracking stock.

While tracking stock has some features that resemble the stock of a spun-off unit, a tracking stock unit is completely controlled by the parent. There is no transfer of ownership of assets or cash flows to tracking stock shareholders. Furthermore, tracking stock is usually voted with parent shares as a single class, with no separate vote on the tracking unit's management. Voting rights of tracking stock differ by company, but generally allow either a fixed vote or variable voting power linked to the relative market valuation of the tracking unit. Variable voting rights guard against the possibility that holders would have bought relatively cheap voting stock with fixed voting rights.

Since tracking stock does not transfer ownership to assets, the creation of a tracking stock is tax-free. In spin-offs and carve-outs, there is a transfer of ownership and gains and losses on the sale of assets are realized. Firms with larger carry loss forwards can offset the cost of a spin-off. D'Souza and Jacob (2000) find that tracking stocks have smaller losses to carry forward than spin-offs, and taxes are a motivation for tracking stock issuance. Billet and Mauer (2000), who incorporate taxes into their model, find that taxes are not a major factor in the decision to create a tracking stock structure instead of some other form of corporate restructuring.

Tracking stock does not represent a share of the tracking unit, but rather a share of the parent corporation. While tracking stock performance should reflect performance of the unit, claims in the case of bankruptcy are on the assets of the corporation as a whole, not on the unit. Nor does a tracking stock unit have its own board of directors. Managers of the unit and managers of the parent corporation report to the same board, which could lead to conflicts of interest.

Finally, tracking stock can be issued in different ways: as a stock dividend that is distributed to the parent firm's shareholders, through an initial public offering, or through an acquisition. The IPO method is similar to an equity carve-out, except that there is no legal separation between the unit and the parent firm as there is in the case of an equity carve-out. In an IPO, cash flows generated by the sale of tracking stock go to the parent, not directly to the tracking unit.

II. Motivation for Tracking Stock Structure

The potential sources of value within tracking stock can occur through reducing 1) the diversification discount, 2) asymmetric information, and 3) agency costs.

By their very nature, firms that issue tracking stock are conglomerate, diversified firms. One motivation for the issue of tracking stock would be to reduce the diversification discount (estimated by Berger and Ofek (1995) at between 13% and 15%), by signaling the prospects of the unit, or by reducing information asymmetry and agency costs. To reduce or eliminate the diversification discount, the operating units within the firm must be identifiable and separated and valued independently.

Zuta (1999) presents a theory for tracking stock structure based on diversification discounts

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and finds the value of a tracking stock structure is higher than the diversified firm, but lower than a structure of two independent firms. Empirical tests support this theory. Billet and Mauer (2000) also consider a diversification discount motivation for tracking stock structure, but find that firms creating tracking stocks have lower diversification discounts than other diversified firms. In addition, they find no evidence that announcement effects of tracking stock creation are related to the diversification discount.

A related theory is a reduction in asymmetric information. A diversified corporate structure makes it more likely that information about the firm's prospects will be known by managers, but not observable in the market. Several authors acknowledge this theory of asymmetric information and offer examples of signals by managers to indicate value (see, for example, Jensen and Meckling, 1976; Leland and Pyle, 1977; Fama, 1980; and Grossman and Stiglitz, 1980). Signaling can be used to explain how managers of some firms respond to information asymmetries by engaging in stock repurchases when their shares are undervalued by the market (Vermaelen, 1981). Signaling can also explain how managers engage in stock offerings when their shares are overvalued by the market (see Myers and Majluf, 1984).

Tracking stock provides a structure to signal information about a unit and explicitly disseminate that information to the market. By segmenting the firm into distinct units, tracking stock presumably allows for a more precise valuation of a unit and parent than is possible when a unit is included within an opaque corporate structure. A measure of the amount of new information revealed in a tracking stock structure is analysts' coverage of the firm prior to and following the creation of tracking stock. Increased coverage by analysts (especially industry specialists) will help in this valuation and enhance information flow to the market.

The possibility that investors can more easily apply appropriate price multiples to the independent unit's operating performance may unlock hidden value. Kim and Ritter (1999) note that comparable firms are used as a means of determining a market value and acknowledge the potential difficulty in applying comparable price-multiples to multi-product firms that span several industries. A multi-product firm may enhance its value by providing investors with sufficient data to value a unit whose business is characterized by higher price-multiples. Since tracking stock forces analysts and investors to explicitly value a unit separately from the rest of the firm, it may allow for application of a higher price-multiple than if the unit's value were not separated from the rest of the firm.

Evidence related to the asymmetric information theory motivation is mixed. D'Souza and Jacob (2000) find no significant increase in the number of analysts covering firms following tracking stock issuance, while Zuta (1999) does find increased analyst coverage. Chemmanur and Paeglis (2000) indicate that while the number of analysts increases, there is no reduction in information asymmetry, as forecast errors increase following initiation of tracking stock structures. Tracking stock is subject to information asymmetry much like other forms of corporate restructuring. Billett and Vijh (2000) find that, for a three-year period following tracking stock creation, forecasts by analysts do not improve the transparency of firm earnings. Gilson, Healy, Noe, and Palepu (2001), however, find improved accuracy for non-specialists and specialist analysts following conglomerate stock breakups (but they only include three tracking stocks in their sample of 103 restructurings).

Timing of tracking stock issues is relevant. If tracking stock is issued when a unit's industry exhibits a temporarily relatively high multiple, longer-term valuation of the unit is likely to fall. Studies indicate that managers tend to time restructuring according to prevailing market valuations. Ritter (1991) suggests that managers time initial public offerings when industry share prices are perceived to be near their peak (high price multiples). Just as managers may decide to go public when they perceive the firm's market value to be high, they may issue

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tracking stock for a unit when the market valuation of the unit is promising. While tracking stock may allow for an increased valuation when price-multiples of unit-comparable firms are near their peak, valuations may decline when price-multiples of unit-comparable firms drop.

Agency benefits may occur with the creation of a tracking stock structure. Tracking stock may improve a unit's operating decisions, because the unit reports its performance separately from the rest of the firm, therefore, making managers more accountable. Second, since tracking stock provides a unit its own reported operating performance and share value, this allows for incentive plans that can tie unit manager compensation directly to reported unit operating performance or even to unit value.

These benefits of increased monitoring may be offset by new agency problems created by a tracking stock structure. Tracking stock may be a source of friction, as the parent's board of directors is responsible for maximizing the value of the entire firm, even at the expense of reducing one unit's value. While such conflicts may occur at any multiunit company, the friction may be exacerbated by the issue of tracking stock because of the same accountability features that make tracking stock desirable. When a unit's performance is publicly reported and valued separately, and managers of the unit are compensated in line with the unit's value, any wealth transfer from the unit to the rest of the firm diminishes the compensation of the unit's managers.

Wealth expropriation is another agency problem. Managers may decide to issue tracking stock simply to achieve a short-term increase in share price. The pressure on managers to focus on value in the short run, well documented by earnings management studies, is motivated by compensation incentives. Guidry, Leone, and Rock (1999) find that managers of business units use earnings management to maximize short-term bonuses. They document that internal contracting (incentive plans) can affect external reporting. Dechow and Skinner (2000) suggest that high stock valuations and the emergence of stock-based compensation encourage the management of earnings to maintain or improve stock valuations in the short run (see also Bushee, 2001).

Yet, a focus on reporting to improve short-term performance could have adverse implications on reported performance in the long run, especially if tracking stock issue is timed when the unit's industry is selling for relatively high price-multiples. Aggarwal and Rivoli (1990) find that long run performance of IPOs, for example, is negative, suggesting the firm expropriates wealth from new shareholders.

A problem common to all tracking stock structures is that tracking stock shareholders can enforce neither claims nor market control mechanisms. Potential conflicts and inter-firm wealth transfers between a unit and the rest of the firm can complicate interpretation of the unit's reported performance. Billet and Mauer (2000) find that firms with more efficient internal capital markets benefit more from a tracking stock structure than firms with inefficient internal markets.

With no legal separation of assets, tracking stock shareholders cannot rely on the market for corporate control to prevent agency problems. Furthermore, tracking stock shareholders cannot directly affect managerial decisions of the unit and have relatively little power to influence the parent corporation's management or to limit subsidization or wealth transfers between the parent and the tracking unit. D'Souza and Jacob (2000) find that the tracking stock valuations are linked to the parent corporation's return patterns rather than the unit's corresponding industry. Haushalter and Mikkelson (2001) find that a tracking stock corporate structure does not improve operating performance.

Studies of tracking stock so far find a positive share price reaction to creation of this corporate structure. Logue, Seward, and Walsh (1996) document a favorable market response

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to the limited sample of firms that issued tracking stock in the early 1990s. More recent studies by Zuta (1999), Chemmanur and Paeglis (2000), Elder and Westra (2000), and Haushalter and Mikkelson (2001) confirm a continued favorable market response to firms that issued tracking stock in more recent periods.

Stock price reactions have not been fully explained by the theories or confirmed in empirical tests. We believe that tracking stock announcement returns are related to the structure of the firm and the resolution of agency problems within the firm. Firms with higher agency costs will benefit more from tracking stock if the structure is implemented in a way that reduces other agency problems.

The published empirical work has focused so far on information asymmetry and diversification discounts, but there is conflicting empirical support for those theories. We find empirical support for agency motivations for tracking stock issuance in cross-sectional analyses.

III. Related Research on Corporate Restructurings

Research on carve-outs and spin-offs may offer some insight into the advantages or disadvantages of tracking stock, since carve-outs and spin-offs have features that are similar to those of tracking stock. There is also an expanding body of research on tracking stock as a result of the recent popularity of this stock structure.

Schipper and Smith (1986) find that equity carve-outs enhance the value of a firm. The separation of a subsidiary from a parent can mitigate the problem of asymmetric information between managers and investors, so that firms recognize the value of a subsidiary. In addition, the subsidiary is given an identity from a market perspective and can be monitored not only by the market, but also by the subsidiary's managers. These advantages also obtain for tracking stocks and may, therefore, allow parents to extract value.

Schipper and Smith (1986) also suggest that favorable returns to the parent firm from carve-outs may be attributable to a wealth transfer from bondholders. The carve-out eliminates assets of the carved-out unit as collateral and shifts wealth from bondholders to shareholders. This characteristic does not apply to tracking stocks, because the assets of the tracking unit are still legally owned by the parent firm, and, therefore, are subject to confiscation by creditors if the parent were unable to make debt payments.

Studies by Hite and Owers (1983), Miles and Rosenfeld (1983), Schipper and Smith (1983), and Cusatis et al. (1993) find evidence of a favorable market response to the announcements of corporate spin-offs. Such results suggest that investors might see value in separating a subsidiary from the parent, particularly if the subsidiary had its own identity in the market, which would allow for improved management incentives. A subsidiary would be easier to monitor for both the market and managers. Furthermore, a spin-off would be subject to takeover if it did not perform as well as expected. The identity advantage of the spun-off unit is applicable as well to a tracking stock unit. The subsidiary's increased exposure to takeover following the spin-off is not applicable to the tracking stock unit.

Seifert and Robin (1989) find that spun-off units experience negative abnormal returns once they are traded, a puzzling result in terms of the semistrong efficiency hypothesis. Michaely and Shaw (1995) find that the choice between spin-offs and carve-outs is dependent upon the firms' access to the capital market and firms with greater access to capital markets choose to carve-out units. They find, however, that neither method provides greater returns than comparable firms.

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IV. Hypotheses and Investigative Questions

There are compelling reasons that can explain how the creation of tracking stock could benefit or harm a firm's shareholders. The ultimate impact of the creation of tracking stock on shareholders depends on managerial intentions. If managers use tracking stock as a means of improved monitoring and motivation of unit employees (reduce agency costs), then shareholders may benefit. If managers use tracking stock to create a false impression that conditions will improve and to take advantage of market conditions, however, then this would not take advantage of the tracking stock mechanism and any potential benefits would be more than offset, adversely affecting shareholders.

Researchers have found a positive return surrounding announcements of creation of tracking stock, indicating an expectation for reduction in diversification discounts, asymmetric information, and agency costs. We expect to find a positive announcement effect for our larger sample of tracking stocks issued over a longer period than in other studies. The reduction in agency costs and asymmetric information should be associated as well with an expectation of lower risk following the creation of tracking stock.

We also test whether the effects of tracking stocks elicit a more favorable market response when issuer-specific and tracking stock-specific characteristics exhibit more potential for a reduction in agency problems. These same characteristics are also tested to explain the variation in risk shifts following the creation of tracking stock. The effects of tracking stock on the issuing firms are hypothesized to be a function of 1) firm characteristics that differentiate the level of agency costs among firms and 2) tracking stock characteristics that differentiate the ability to prevent agency problems among tracking stocks.

Firms exhibiting characteristics that result in higher agency costs include larger firms and firms with less financial leverage (less monitoring by debtholders). Poor past and current market performance also is indicative of firms with higher agency costs. Poor performance is caused in part by poor managerial incentives and monitoring by the market. Firms with higher agency costs, poor past performance, and lower market values should benefit from tracking stock creation.

Tracking stock characteristics that affect agency relationships are also determined by the unit that is to be tracked and the rights and method of tracking stock distribution. The way tracking stock is distributed can affect agency relationships, whether distribution as a stock dividend to current shareholders or distribution through a public offering. A stock dividend distribution maintains existing cash flow streams and claims for current shareholders. This distribution also allows for additional monitoring and reduction in asymmetric information.

An initial public offering distribution has the tendency to create additional agency problems. First, an IPO creates free cash flow that is retained by the parent and not necessarily distributed to the tracking unit. Creation of additional free cash flow creates an agency problem, and allocation of funds within a firm's internal capital market also creates agency problems within the firm (Billet and Mauer, 2000). Secondly, a public offering distribution can transfer wealth between current and new shareholders. If tracking unit shares are timed effectively and overvalued by the market, a frequent occurrence in the IPO market, then wealth is transferred from new shareholders to existing shareholders of the firm. If tracking unit shares are undervalued, then wealth is transferred to tracking stock shareholders if the parent company's managers distribute cash flow equitably. In either case, a public offering creates additional agency problems and should have a negative effect on share value.

A third means of distribution is creation of shares through an acquisition, such as General Motors H class and E class when GM acquired Hughes and EDS. When tracking stock is

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created to facilitate an acquisition, the target becomes a separate independent market-monitored unit under the control of the acquirer. Target shareholders can receive the acquirer's stock or a cash payment along with tracking stock that represents the target. Thus, target shareholders can possibly benefit from the future performance of their original investment.

Since acquiring firms generally experience unfavorable share price responses upon acquisition of targets, this may adversely affect the valuation of a parent at the time tracking stock is created. In addition, shareholders receive only a fraction of a claim in the new tracking unit. The acquirer is subject to any possible overpayment for the target and faces the difficulty in merging two employee cultures (as with any acquisition) and acquirers may still experience a negative market stock price response. Valuation effects for parents that create tracking stock are expected to be less favorable when the firm is simultaneously engaged in an acquisition. The acquisition admittedly may provide for potential diversification benefits and should reduce risk following the acquisition and issuance of tracking stock.

Another agency problem associated with tracking stock is voting rights. Voting rights on tracking stock can be assigned on a fixed basis, or linked to market valuation and performance in relation to the parent's valuation. Market-weighted voting rights prevent investors from obtaining relatively cheap voting stock with fixed voting rights in the event that the tracking unit under-performs the parent, and, thus, protect existing shareholders. Fixed voting rights would potentially create agency problems.

Therefore, valuation effects upon the creation of tracking stock should be more favorable when voting rights are linked to the market valuation. With a variable voting rights structure, control and relative voting power will change as a result of market performance. The unit's potential to outperform subjects parent firm shareholders to a possible loss of some control when the voting stock is assigned on a market-value basis, which, in turn, causes an increase in risk.

There are two tracking unit characteristics that are related to agency problems. The first is the relative size of the tracking unit. The larger the size of the unit to be tracked, the greater the proportion of future cash flows to be allocated to the tracking unit shares. This change in cash flows from current shareholders to tracking stockholders will have a negative effect on the value of the firm to current shareholders. And the greater the change in cash flows, the riskier the tracking stock structure becomes to current shareholders, although this negative impact may be offset by the additional monitoring of a larger unit that is responsible for a greater portion of cash flows and return.

The second unit characteristic that may be important in explaining tracking stock return is the tracking unit's industry. Firms that assign tracking stock to internet units may be using tracking stock as a way to time the market in order to create wealth for the firm from new stockholders, because, prior to 2000, internet businesses tend to have higher valuations measured as multiples of earnings or other financial characteristics. Firms that create tracking stocks for internet units may, therefore, experience more favorable initial valuation effects than firms that create tracking stocks for other types of units. This is supported by the percentage of tracking stocks that are internet-related. Of the 13 tracking stocks issued (or 25 announced) in 1998 and 1999, 8 or 62% (12 or 48%) relate to internet units.

Initial reaction to the creation of tracking stocks is attributable to changes in expectations. More specifically, tracking stocks are expected to reduce current agency costs and resolve agency problems more than they might increase such costs. For tracking stock to be effective in the long run, these expectations must be realized.

There is substantial evidence, however, that initial expectations and valuations are not fully realized. In the public offering literature, Ritter (1991) and Loughran and Ritter (1995)

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find delayed valuation effects following the offering. Agrawal, Jaffe, and Mandelker (1992), Cusatis et al. (1993), and Ikenberry, Lakonishok, and Vermaelen (1995) find significant delayed reaction or underreaction in corporate restructuring activities such as acquisitions, spin-offs, or stock repurchases. Given these findings for well-known corporate activities, there is reason to test whether there are long-term effects from creation of tracking stock that are not captured by the initial market reaction. We test the long-term performance of tracking stocks to determine if any benefits from agency cost reduction are permanent or temporary in nature.

A tracking stock structure should allow the firm to increase monitoring and to reduce current agency costs. If these expectations are realized and agency costs are resolved, then there should be long-term benefits. Billett and Vijh (2000) and Haushalter and Mikkelson (2001) find that long-run return and operational performance do not improve and even became negative following the creation of tracking stocks, indicating that agency benefits are not realized.

V. Sample Selection and Descriptive Statistics

The sample consists of all announcements of US firms that created tracking stocks as reported on Lexis/Nexis that include press releases and announcements on that date. The first reported announcement was in 1984, with the creation of GMH shares when General Motors acquired Hughes Electronics. The sample ends with the last announcement of 1999.

There are a total of 51 firms that qualify for inclusion. Of these 51, 33 firms had completed the tracking stock issuance by June 2000; we have complete information on the tracking stock structure, including voting rights and the distribution of shares. Of the 33 firms that issued tracking stock, complete information for the cross-sectional models is available for 31.

Table I shows the number of firms that announced the creation of tracking stocks between 1984 and 1999. Notice how the popularity of tracking stocks has increased. Eighteen of the 51 firms in the sample created tracking stocks in 1999. The increasing popularity of tracking stock may be partially attributed to the higher valuation multiples that the technology businesses receive. Firms may have been motivated to extract hidden value from their internet and technology units.

Descriptive statistics for firms in the sample are identified in Table II. Data are compiled from proxy statements and registration filings on the method of issuing tracking stocks, voting rights details, and operating ratios of the unit to be tracked and the parent corporation. The sample is partitioned according to whether firms had completed the issuance of the stock by June 2000.

Firms that issued tracking stock have a smaller amount of assets on average, but have a similar level of sales. Firms in our sample tend to experience weak performance before they create tracking stock, which is consistent with the findings by Billett and Vijh (2000). This poor stock price performance is a finding consistent with firms that have higher agency costs and suggests that tracking stock may serve as a motive to reduce agency costs by increasing market monitoring and introducing incentive-based compensation. To gain further insight into the stock performance of firms before they issued tracking stock, an excess return for the firm issuing tracking stock is derived by comparison to an industry- and size-matched firm for periods up to 36-months prior to the announcement.

The average matched firm abnormal return (MFAR) is derived as follows:

$$\overline{MFAR}_T = \frac{\sum_{i=1}^{N} \left[R_{i,T} - R_{i,T}^m \right]}{N} \quad (1)$$

where $R_{i,T}^m$ is the matched firm return. The mean MFAR for 36 months prior to tracking stock

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Table I. Number of Announcements of Tracking Stock Issues by Year

Timeline of the development of tracking stock and acceptance by US firms. Announcement dates are those found in newspapers or company press releases on Lexis/Nexis.

Year	Number Announced
1984-1990	2
1991	1
1992	1
1993	3
1994	5
1995	4
1996	5
1997	5
1998	7
1999	18
Total	51

Table II. Descriptive Statistics of Sample Firms

Descriptive statistics of sample firms by completion of the tracking stock issue by June 2000 (issued) or not.† Relative Size is the size of the tracking unit in relation to the parent based on sales. Vote indicates the tracking unit has market-weighted votes. Acquisition is the number of tracking stocks issued as part of an acquisition. STKDIV is the number of tracking units issued as a stock dividend, and Internet is the number of internet tracking units.

	Issued (N = 33)		Did Not Issue (N = 18)		Full (N = 51)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Assets (in millions of $)	13,439	19,364	23,058	25,047	16,304	21,399
Sales (in millions of $)	11,031	20,300	12,731	10,992	11,537	17,929
Debt/Equity	2.484	4.182	2.481	2.859	2.483	3.796
MKBK	4.494	4.393	4.647	8.832	4.545	6.134
Beta	1.296	0.571	1.314	0.730	1.302	0.625
$MFAR_{36}$	–23.17%	70.61%	–21.42%	46.58%	–22.06%	63.22%
Relative Size	20.14%	25.02%				
	Number of Occurrences					
Vote	21					
Acquisition	9					
STKDIV	16					
Internet	8					

†Assets, Sales and Debt/Equity ratio are missing for 4 firms that did not issue tracking stock.

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announcement is –22.60%, which is statistically significant at the 5% level.[1] This indicates that firms that issued tracking stocks underperformed comparable firms for the previous three years. Such a finding is not sufficient to make inferences about how performance is affected as a result of creating tracking stock. Some firms that had performed poorly may view tracking stock as a way they can improve their performance.

VI. Methods and Models

To analyze tracking stock effects, we must identify the "hidden value" that is unlocked as a result of the creation of tracking stock. We measure this as the abnormal share price adjustment at the time the firm announces its creation of tracking stock. Abnormal returns are estimated using the market model to measure expected returns. The 200-day estimation period ranges from t –214 to t –15. The abnormal returns are tested with the z-statistic, following Mikkelson and Partch (1988). The cumulative abnormal returns (CARs) are computed over various return windows, up to 60 trading days following the announcement.

Once the CARs are computed, we test measures of potential agency cost reductions from the creation of tracking stocks. The cross-sectional analysis examines the valuation effect at the time of the announcement, CAR (–1, 0). The cross-sectional model is:

$$CAR = \beta_0 + \beta_1 STKDIV + \beta_2 ACQ + \beta_3 VOTE + \beta_4 SIZE + \beta_5 DEBT + \beta_6 MKBK + \beta_7 RELSIZE + \beta_8 NET + \beta_9 MFAR_{-T} + \varepsilon_i \quad (2)$$

where: STKDIV = 1 if the tracking stock were issued as a stock dividend, and 0 otherwise;
ACQ = 1 if the tracking stock is part of an acquisition, and 0 otherwise;
VOTE = 1 if the tracking stock's voting rights are based on the market valuation of the tracking stock, and 0 otherwise;
SIZE = log of the parent company's sales in the year before the tracking stock was issued;
DEBT = debt-to-equity ratio of the parent company in the year before the tracking stock was issued;
MKBK = market-to-book ratio of the parent company in the year before the tracking stock was issued;
RELSIZE = relative size of the tracking unit to the parent company based on assets;
NET = 1 if the tracking unit is an internet division of the parent corporation or is relying on internet technology, and 0 otherwise; and
$MFAR_{-T}$ = the matched firm adjusted return for T months prior to the announcement of tracking stock issuance.

The cross-sectional models are estimated using White's (1980) heteroskedastic-consistent covariance matrix.

Consistent with agency motivations for tracking stock, we expect to find a positive relationship between the abnormal return and size, stock dividend issuance, market-weighted voting rights, and internet-related tracking units. We also expect an inverse relationship to tracking characteristics that limit the reduction in agency costs such as high debt levels and poor past performance, or characteristics that would tend to increase agency problems such as public offerings, acquisition distributions, and relative size of the unit.

[1]The MFAR is also negative and significant for the preceding 3-month, 12-month, and 24-months periods.

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While the creation of a tracking stock may unlock hidden value through agency problem reductions, it can also change risk. Since tracking stock essentially removes the performance of a unit from the performance of the rest of the firm, the parent's performance may be more volatile after the creation of tracking stock. The risk of the parent could increase following the creation of tracking stock. To test for risk shifts of parent firms that issued tracking stock, we apply an adjusted market model to the returns of each individual parent firm surrounding the tracking stock announcement:

$$R_i = \beta_0 + \beta_1 R_m + \beta_2 DR_m + \varepsilon \tag{3}$$

where R_i = return of the parent firm i;
R_m = return on the market;
D = dummy variable assigned a value of zero before the announced issuance of tracking stock, and assigned a value of 1 after the announcement date; and
ε = error term.

The coefficient β_1 measures the beta, while the coefficient β_2 measures the shift in the parent firm's risk following the issuance of tracking stock. A period of 180 (–95 to –6 and +6 to +95) days surrounding the announcement date is assessed for each parent firm separately.

The shift in risk of any particular parent firm as a result of creating tracking stock may be dependent on the firm's unique characteristics. For this reason, the risk shift estimates for all firms are assessed on a cross-sectional basis:

$$\hat{\beta}_2 = \alpha_0 + \alpha_1 STKDIV + \alpha_2 RELSIZE + \alpha_3 VOTE + \alpha_4 DEBT + \alpha_5 MFAR_{-T} + \varepsilon \tag{4}$$

where the independent variables are all as described following Equation (2).

While the announcement effects should signify a favorable market response to the creation of tracking stock, the full impact of the change in agency relationships should include the assessment of long-term effects. Following the methodology of Cusatis et al. (1993), we measure long-run performance by computing raw returns on a portfolio of the parent corporation and the tracking unit for up to a three-year horizon. The portfolio is weighted by the market value of the shares at the close of the first day of trading.

Returns for the buy-and-hold strategy are computed as:

$$R_{i,T} = \left[\prod_{t=1}^{T}(1+r_{i,t})\right] - 1 \tag{5}$$

where $r_{i,t}$ is the total monthly return for firm i at time t. The mean return for all firms in the sample for T periods is:

$$\overline{R}_T = \frac{\sum_{i=1}^{N} R_{i,T}}{N} \tag{6}$$

If the firm stops trading (or no return information is available for some reason), we drop the firm from the sample for the longer time periods, but include it in the sample for the time period available.

We compute returns for a sample of firms matched by four-digit SIC code and market value

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and for the same time period as the tracking stock portfolio firms. A matched firm adjusted return (MFAR) is computed for each holding period for the sample, as in equation (1). If there is no long-term effect from the issuance of tracking stock, then the difference should be zero. If, as claimed, the benefits of tracking stock are greater than the costs, then we would expect a positive MFAR. We test the MFAR using:

$$t = \frac{\overline{MFAR_T}}{s/\sqrt{N}} \tag{7}$$

where s is the standard deviation in the MFARs for the N firms in the sample for the holding period.

VII. Results

We discuss announcement effects first and then tests of shifts in risk and long-term effects. The valuation effects of parent firms in response to the announced creation of tracking stock are shown in Table III. The mean CAR (–1, 0) for the 51 firms that created tracking stocks is 2.17%, significant at the 0.01 level. Sixty-five percent of the firms experienced a positive valuation effect over this two-day period. The market reaction for the entire sample is most pronounced within this period, and the CARs over extended periods beyond day 1 are not statistically significant.

Valuation effects for the subsample of firms that subsequently completed the issue of tracking stocks are also shown in Table III. The CAR (–1, 0) for the subsample is 2.40%, significant at the 0.01 level. Sixty-four percent of the firms in this subsample experienced a positive valuation effect over this period.

The results of the cross-sectional analysis of abnormal returns to test agency motivations for tracking stock creation are displayed in Table IV. Most of the explanatory variables have the hypothesized sign. One version of the model uses a dummy variable for IPO as the means of issue instead of stock dividend.

Neither of the variables denoting the means of issuance, STKDIV and IPO, is significant. The ACQ variable exhibits a negative coefficient and is significant in both models. This result suggests that agency costs from the creation of tracking stock increase when the parent firm is engaged simultaneously in an acquisition. The coefficient of the ACQ variable suggests a 9.23 percentage point differential in value released through the creation of tracking stock.

The VOTE variable exhibits a positive coefficient, as predicted, but is not significant in either model. The DEBT variable has a negative coefficient in the models and is significant in both models. Thus, there is evidence that firms with monitoring mechanisms in place do not benefit as much from a reduction in agency costs, and less value is created through a tracking stock.

Measures of the size of the parent corporation and the size of the tracking unit relative to the parent corporation are significant in both models. The coefficient of the SIZE variable is positive and significant, as expected. RELSIZE is negative and significant, which supports the hypothesis that a greater proportion of cash flows go to the tracking unit and no longer represent a claim of the parent corporation's shareholders.

The measure of previous performance, MFAR, is negative and significant in both models. This is consistent with the hypothesis that more poorly performing firms are expected to benefit the most initially from issuing tracking stock. Current relative market value, MKBK,

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Table III. Cumulative Abnormal Returns (CARs) for Entire Sample and for Firms that Completed Tracking Stock Issues

CARs computed using the market model with a 200-day estimation period ending 15 days before the announcement date.

	All Announcements (N = 51)			Issuing Firms Only (N = 33)		
Window	**CAR %**	**z-stat.**	**% Pos.**	**CAR %**	**z-stat.**	**% Pos.**
(-1,0)	2.17	4.85***	65	2.40	4.89***	64
(0)	1.16	4.55***	57	1.20	4.49***	55
(-1,+1)	1.59	3.04**	65	2.28	4.22***	70
(0,+10)	0.53	0.72	59	3.31	2.44*	70
(0,+20)	-0.19	0.13	49	2.32	1.58	64
(0,+60)	2.00	0.23	51	6.00	1.30	61

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

Table IV. Regression Results Explaining Cumulative Abnormal Returns of Firms Issuing Tracking Stock

STKDIV is a dummy variable equal to 1 if the tracking stock was issued as a stock dividend, 0 otherwise (usually as an IPO). ACQ is a dummy variable equal to 1 if the tracking stock were issued as part of an acquisition, 0 otherwise. VOTE is a dummy variable equal to 1 if the tracking stock's voting rights are based upon market valuation of the tracking stock, 0 otherwise. SIZE is a proxy for size and the log of the parent company's sales in the year prior to issuing the tracking stock. DEBT is the debt-to-equity ratio of the parent company in the year prior to issuing the tracking stock. MKBK is the year-ending market-to-book ratio of the parent company in the year prior to issuing the tracking stock. RELSIZE is the relative size of the tracking unit compared to the parent based on assets. NET is a dummy variable equal to 1 if the tracking stock is internet-related or relies on internet technology, 0 otherwise. MFAR is the matched-firm adjusted return for the 36 months prior to the announcement.

	Dependent Variable, CAR (–1, 0)			
Variable	**Estimated Coefficient**	***t*-statistic**	**Estimated Coefficient**	***t*-statistic**
Intercept	-0.0068	-0.208	-0.0130	-0.425
STKDIV	-0.0114	-0.978		
IPO			0.0064	0.492
ACQ	-0.0923	-4.849***	-0.0886	-5.350***
VOTE	0.0198	1.402	0.0168	1.086
SIZE	0.0097	3.525***	0.0099	3.760***
DEBT	-0.0062	-4.124***	-0.0065	-3.768***
MKBK	-0.0027	-1.195	-0.0030	-1.254
RELSIZE	-0.0802	-2.672**	-0.0900	-2.989***
NET	0.0446	2.061*	0.0487	2.213**
MFAR	-0.0209	-2.244**	-0.0097	-2.070*
N	27		27	
R^2	0.649		0.648	
Adj. R^2	0.464		0.461	

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

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is also negative as predicted, but not significant. Investors view tracking stock issue by these firms as a signal of improved future performance and future reduction of agency costs.

Overall, results of the cross-sectional analysis suggest that valuation effects depend on the perceived motive behind the creation of tracking stock, including increased monitoring, the type of tracking unit offered, and if the tracking unit was created as part of an acquisition.

Changes in risk are described in Table V. The mean shift in risk is 0.118, indicating increased risk due to tracking stock ownership structures. The t-statistic indicating whether the mean of estimates is significantly different from zero is 0.976, suggesting that the mean risk shift estimate is not significant. Nonparametric tests also indicate that the shift in risk is not significant, but the two types of test differ on the direction of the shift in risk. The standard t-test indicates that risk tends to increase following tracking stock announcements; the nonparametric tests indicate a decline in risk.[2] These results can be explained by the substantial variation in risk shift estimates among parent firms.

Results of the cross-sectional analysis of risk shifts appear in Table VI. The STKDIV variable is negative and significant. This indicates that the stock dividend means of tracking stock issuance increases monitoring by the market without redistributing ownership claims or wealth unless the shareholder chooses to sell either the tracking stock or the parent corporation's stock. An additional explanation is that IPOs and acquisitions are much riskier ventures for a firm than stock dividends and create additional agency problems. When the ACQ variable is included in the second model, it is not significant.

The VOTE variable is positive in both models and significant in the first model. Market-weighted voting power creates uncertainty about the control of the firm in the future and adds additional risk for shareholders. Finally, DEBT, the measurement of financial leverage, is positive and significant in both models, as hypothesized. Firms with higher financial leverage are more sensitive to changes in cash flows and changes in claims on cash flow. While creditors do not lose claim to the assets or cash flows of the company and its tracking unit, the potential changes in cash flow from another claimant may diminish the firm's ability to meet its financial obligations.

The firm's past performance, MFAR, has an inverse relationship with shift in risk as a result of announcing tracking stock.[3] The poorest-performing firms had increased levels of risk, while firms performing better saw less increase in risk (or a decrease). This indicates that the market evaluates motives for issuing tracking stocks in terms of a firm's past performance. Market participants perceive that underperforming firms are looking for a way to increase return through increasing risk, not by making any real change in operating performance.

The results for the long-term performance of the portfolio of tracking stock and parent stock and the matched firm adjusted sample for holding periods of three months to three years are presented in Table VII. Data for this analysis are available for 22 firms for the shortest holding period. Given that almost half the announcements occur in the final two years of the sample period, many firms do not provide the data for this analysis. For the longest holding period, the sample is further reduced by almost half.

Panel A of Table VII presents results in terms of raw returns for the portfolio of parent and tracking stocks. On average, the sample experiences significant positive returns over the entire period. The matched firm adjusted returns are not significantly different from zero for

[2]The Kolmogorov-Smirnov test of normality of the shift risk variable indicates the distribution of the estimated coefficient is not significantly different from a normal distribution for those beta coefficients used in the subsequent regression.

[3]The MFAR used in this test is for a 12-month measure in order to augment sample size. Size and significance levels are consistent for other time periods of MFAR.

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Table V. Changes in Risk Following Tracking Stock Creation Announcement

Measurements of a shift in risk (Beta) pre- (-95, -6) and post- (+6, +95) announcement periods. Shift is the average β_2 for the model $R_i = \beta_0 + \beta_1 R_m + \beta_2 D * R_m + \varepsilon$ where D is 0 prior to the announcement and 1 in the period following the announcement. The percentage negative is the percentage of firms whose beta decreased following the announcement. Sign is the Wilcoxon sign rank value for the sample based on the differences in pre- and post-announcement betas.

	Full (N = 44)		Issued (N = 31)		Not Issued (N = 13)	
	Mean	*t*-statistic	Mean	*t*-statistic	Mean	*t*-statistic
Regression Test						
Shift	0.1181	0.976	0.0637	0.480	0.2478	0.932
Sign Test						
% Negative	54.55%	0.604	54.84%	0.539	53.85%	0.278
Wilcoxon Test						
Sign Rank	–24	–0.140	2	0.019	–9	–0.314

Table VI. Cross-Sectional Analysis of Changes in Risk Following Announcement

Estimates of the equation $\hat{\beta}_2 = \alpha_0 + \alpha_1 STKDIV + \alpha_2 RELSIZE + \alpha_3 VOTE + \alpha_4 DEBT + \alpha_5 MFAR_T + \varepsilon$ to explain the variation for a shift following the announcement of the intention to issue tracking stock. STKDIV is a dummy variable equal to 1 if the firm issued tracking stock as a stock dividend, 0 otherwise. RELSIZE is the tracking unit's assets divided by the parent's assets. VOTE is a dummy variable equal to one if the tracking stock has market weighted voting power, 0 otherwise. DEBT is the debt-to-equity ratio of the parent company in the year prior to issuing the tracking stock. ACQ is a dummy variable equal to one if the tracking stock was created as part of an acquisition. MFAR is the matched firm adjusted return prior to tracking stock creation.

	Estimated Coefficient	*t*-statistic	Estimated Coefficient	*t*-statistic
Intercept	-0.3737	-2.386**	-0.0961	-0.109
STKDIV	-0.7169	-2.514**	-0.7982	-3.118***
RELSIZE	0.7414	2.152**	0.6841	2.118**
VOTE	0.4695	1.847*	0.4708	0.845
DEBT	0.0649	2.737**	0.0562	1.611
ACQ			-0.5253	-1.102
MFAR	-0.7502	-2.072*	-0.7614	-2.412**
N		28		28
R^2		0.315		0.381
Adj. R^2		0.159		0.204

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

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Table VII. Returns for Portfolio of Parent and Tracking Stocks Following Issuance

Matched-firm abnormal returns computed following Cusatis, Miles, and Woolridge (1993). Firms are matched according to SIC codes and market value of the firm.

	Holding Period (Months following tracking stock issuance)					
	3	6	12	18	24	36
			Panel A. Raw Returns			
Average	8.73%	10.69%	19.97%	33.79%	22.05%	52.06%
t-statistic	2.096**	1.718*	1.611	1.937*	2.499**	3.099***
N	22	22	21	18	15	13
			Panel B. MFAR			
Average	4.66%	1.95%	-3.94%	-9.65%	-17.07%	-32.19%
t-statistic	1.091	0.272	-0.325	-0.751	-1.506	-3.093***
N	22	22	21	17	14	12

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

the shortest time period and decline with each time period. The average MFAR in Panel B is significantly negative for the three-year holding period. Thus, while the initial market response to the stock creation is favorable, the long-term consequences are not.

When we compare the pre-announcement analysis and the long-term effects, it appears that while tracking stock may be created to reduce agency costs, it does not achieve its objective in the long run. In fact, additional agency problems outweigh any gains achieved through additional monitoring.

The tracking stock structure is a costly way to reduce agency problems and compensate managers. Absence of an independent market valuation and ineffective corporate control together represent implicit costs not borne by firms that achieve restructurings such as spin-offs and carve-outs. This result indicates that tracking stock does not achieve reduced agency costs or improved performance.

Negative long-term effects following the creation of tracking stock may also be attributable to information asymmetries. If managers time the creation of a tracking unit to compel a favorable market valuation of a unit when market multiples are near their peak, long-term valuations will inevitably be negative.

VIII. Summary and Conclusions

Tracking stocks might seem to resemble spin-offs and carve-outs in that they represent a new unit whose value is visible to the market. Yet, unlike a spin-off and carve-out, a tracking stock unit is completely controlled by the parent. The creation of tracking stock might unlock hidden value if it were to define a unit that is more easily monitored and more accurately valued by the market; if it is not taxed; and if it does not require a new board of directors, and has no minimum period before it can be sold. If a unit merits valuation at a higher multiple than the rest of the firm, the creation of a tracking stock for that unit might recognize that value.

Advantages are that the unit remains owned by the parent, so that any potential synergies

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are still achievable, and the unit may benefit from the parent's credit rating when borrowing funds. Finally, employees working for the unit may be given incentives that are tied to the unit's value. Disadvantages are that board decisions are not free from conflicts of interest between the parent and the unit. A unit's cash flows can be transferred to support the parent's other operations. A tracking unit is not subject to the market for corporate control.

We find that firms experience increases in value averaging 2.17% over a two-day period surrounding announcement of the tracking stock issue. The creation of tracking stock appears in this way to be an effective way to monitor a unit without relinquishing ownership. Our cross-sectional analysis finds that the valuation effects upon creation of a tracking stock are more favorable: for firms that are large and have less financial leverage, when the intent is for purposes other than to facilitate an acquisition, and when the tracking units are in technology (higher market multiple) businesses. Overall, any released value is conditioned on agency-related and information-related characteristics among firms.

The reduction in risk from the issue of tracking stock is less favorable when the parent firm assigns tracking stock on a market-value basis and has more financial leverage level. Risk reduction benefits are greatest for firms that issue the tracking stock through a stock dividend.

Long-term valuation effects are negative for the combined parent and tracking stock unit. In a matched-firm comparison, firms with a tracking stock structure underperform similar firms. The initially favorable revaluation by the market is completely eliminated over time.

While the early favorable share price response to the creation of tracking stock may encourage firms to pursue this strategy, the long-term effects should be a warning. In fact, some corporations have considered elimination of tracking stock. Pittston Corporation has consolidated its tracking stock into general stock. Staples announced a repurchase of tracking stock after it decided that it would not spin off a unit.

Our findings indicate that the ultimate performance of tracking stock likely depends on whether it is structured in a manner that will effectively reduce agency costs, or whether it is merely a cosmetic transaction conceived to take advantage of temporary market conditions. ■

References

Agrawal, A., J.F. Jaffe, and G.N. Mandelker, 1992, "The Post-merger Performance of Acquiring Firms in Acquisitions: A Re-examination of an Anomaly," *Journal of Finance* 47, 1605-1621.

Aggarwal, R. and P. Rivoli, 1990, "Fads in the Initial Public Offering Market?" *Financial Management* 19, 45-57.

Berger, P.G. and E. Ofek, 1995, "Diversification's Effect on Firm Value," *Journal of Financial Economics* 37, 39-65.

Billett, M.T. and D.C. Mauer, 2000, "Diversification and the Value of Internal Capital Markets: The Case of Tracking Stocks," *Journal of Banking and Finance* 24, 1457-1490.

Billett, M.T. and A.M. Vijh, 2000, "Long-Term Returns From Tracking Stocks," University of Iowa Working Paper.

Bushee, B.J., 2001, "Do Institutional Investors Prefer Near-Term Earnings Over the Long Run Value?" *Contemporary Accounting Research* 18, 207-246.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission. www.

Chemmanur, T.J. and I. Paeglis, 2000, "Why Issue Tracking Stock? Insights from a Comparison With Spin-offs and Carve-outs," Boston College Working Paper.

Cusatis, P.J., J.A. Miles, and J.R. Woolridge, 1993, "Restructuring Through Spin-offs: The Stock Market Evidence," *Journal of Financial Economics* 33, 293-312.

Dechow, P.M. and D.J. Skinner, 2000, "Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators," *Accounting Horizons* 14, 235-250.

D'Souza, J. and J. Jacob, 2000, "Why Firms Issue Target Stock," *Journal of Financial Economics* 56, 459-483.

Elder, J. and P. Westra, 2000, "The Reaction of Security Prices to Tracking Stock Announcements," *Journal of Economics and Finance* 24, Spring, 36-55.

Fama, E.F., 1980, "Agency Problems and the Theory of the Firm," *Journal of Political Economy* 88, 288-298.

Gilson, S., P. Healy, C. Noe and K. Palepu, 2001, "Analyst Specialization and Conglomerate Stock Breakups," *Journal of Accounting Research* (Forthcoming).

Grossman, S. and J.E. Stiglitz, 1980, "On the Impossibility of Informationally Efficient Markets," *American Economic Review* 70, 393-408.

Guidry, F., A.J. Leone, and S. Rock, 1999, "Earnings-based Bonus Plans and Earnings Management by Business Unit Managers," *Journal of Accounting and Economics* 26, 113-142.

Haushalter, D. and W. Mikkelson, 2001, "An Investigation of the Gains from Specialized Equity: Trading Stock and Minority Carve-outs," University of Oregon Working Paper.

Hite, G. and J. Owers, 1983, "Security Price Reactions Around Corporate Spin-off Announcements," *Journal of Financial Economics* 12, 409-436.

Ikenberry, D., J. Lakonishok, and T. Vermaelen, 1995, "Market Underreaction to Open Market Share Repurchases," *Journal of Financial Economics* 39, 181-208.

Jensen, M.C. and W. Meckling, 1976, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics* 3, 305-360.

Kim, M. and J. Ritter, 1999, "Valuing IPOs," *Journal of Financial Economics* 53, 409-437.

Leland, H. and D. Pyle, 1977, "Information Asymmetries, Financial Structure, and Financial Intermediation," *Journal of Finance* 32, 371-387.

Logue, D.E., J.K. Seward, and J.P. Walsh, 1996, "Rearranging Residual Claims: A Case for Targeted Stock," *Financial Management* 25, 43-61.

Loughran, T. and J. Ritter, 1995, "The New Issues Puzzle," *Journal of Finance* 50, 23-51.

Michaely, R. and W.H. Shaw, 1995, "The Choice of Going Public: Spin-Offs vs. Carve-Outs," *Financial Management* 24, 5-21.

Mikkelson, W.H. and M.M Partch, 1988, "Withdrawn Security Offerings," *Journal of Financial and Quantitative Analysis* 23, 119-134.

Mikkelson, W.H. and M.M Partch, 1988, "Eratta," *Journal of Financial and Quantitative Analysis* 23, 487.

Miles, J.A. and J.D. Rosenfeld, 1983, "The Effect of Voluntary Spin-Off Announcements on Shareholder Wealth," *Journal of Finance* 38, 1597-1606.

Myers, S. and N. Majluf, 1984, "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have," *Journal of Financial Economics* 13, 187-212.

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Ritter, J.R., 1991, "The Long-Run Performance of Initial Public Offerings," *Journal of Finance* 46, 1-27.

Schipper, K. and A. Smith, 1983, "Effects of Recontracting On Shareholder Wealth: The Case of Voluntary Spinoffs," *Journal of Financial Economics* 12, 437-467.

Schipper, K. and A. Smith, 1986, "A Comparison of Equity Carve-Outs and Seasoned Equity Offerings: Share Price Effects and Corporate Restructuring," *Journal of Financial Economics* 15, 153-186.

Seifert, B. and B. Robin, 1989, "Spin-Offs and the Listing Phenomena," *Journal of Economics and Business* 41, 1-19.

Vermaelen, T., 1981, "Common Stock Repurchases and Market Signaling," *Journal of Financial Economics* 9, 139-183.

White, H., 1980, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica* 48, 817-838.

Zuta, S., 1999, "Diversification Discount and Targeted Stock: Theory and Empirical Evidence," University of Maryland Working Paper.

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