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**EXAMINING THE CHOICE BETWEEN TRACKING STOCKS AND MINORITY
CARVE-OUTS AND THEIR RELATIVE PERORMANCES**

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ABSTRACT

In this paper, we examine factors influencing the choice between tracking stocks and minority carve-outs and their performances. We expand the research in this field by incorporating a factor that was largely ignored in extant literature: managerial entrenchment. We find that the following firms have a greater tendency to choose tracking stocks over carve-outs: firms with a tendency to increase executive pays--especially those in the form of subsidiary stocks, firms that are more tightly controlled by their executives, and firms with greater financial strength prior to restructuring. The former two are consistent with our conjecture that managerial entrenchment plays a role in the choice between tracking stocks and carve-outs. The latter result is consistent with our other hypothesis that prior financial strength influences the decision. Equally important findings are that both are characterized by poor long-term performances and that tracking stocks' performances are on average inferior to those of carve-outs. Evidence suggests that these sub-par performances can be partially attributable to managerial entrenchment.

EXAMINING THE CHOICE BETWEEN TRACKING STOCKS AND MINORITY CARVE-OUTS AND THEIR RELATIVE PERORMANCES

I. INTRODUCTION

Minority carve-outs and tracking stocks are two very similar forms of corporate restructure: Both involve a separation of a subsidiary from the parent while the parent firm maintains the majority control. This study examines factors influencing the tradeoff and performances of the two restructuring methods, with a particular emphasis on agency conflicts, since the two methods primarily differ in the degree of shareholder protection.

Equity carve-out is a public offering of shares of a formerly non-publicly traded subsidiary; the word “minority” here refers to the case where a parent sold only a minority interest, thus maintaining a majority control of the subsidiary after the restructure. Shareholders in the new firm have the right to elect a separate board of directors, the right to vote on matters of significant importance, and a claim on the carve-out unit’s net assets. In contrast, tracking stock or targeted stock is a class of a company’s common stock created to track the performance of a particular business unit. Tracking stock does not represent direct ownership in the targeted business, but rather an ownership interest in the entire company (parent and subsidiary). The shares are typically distributed to current shareholders on a pro-rata basis or, less frequently, sold through an initial public offering. Unlike an equity carve-out, a tracking stock does not create a new legal entity. Tacking stock shareholders do not have a claim on the assets of the subsidiary. The business represented by the tracking stock remains a part of the

consolidated entity and shares a common board of shareholders. In contrast, carve-out parent executives rarely serve on the subsidiary's board (Schipper and Smith (1986)). The above discussions suggest that the primary difference between tracking stock and carve-out is in the legal forms of the two organizational structures and the rights afforded to their shareholders.

Executives of firms undergoing a tracking stock arguably have relatively more discretion on important matters. For example, some tracking stocks were cancelled and merged back into parent firms, while performing the same task for a carve-out would probably involve substantially higher costs and additional complications. The greater discretionary power associated with the parent of a tracking stock subsidiary is also manifested in its managers receiving bigger compensation than the managers of a carve-out parent. Byrne (2002) states that "What few realized in the late 1990s, when many tracking stocks were issued, was that the stocks also could result in unusual windfalls for executives who, in effect, double up their options even though their jobs didn't substantially change." He uses an example of Sprint, who issued two tracking stocks in 1998: PCS and FON. "... in the three years since the Sprint recap, seven of the company's top executives have realized gains of \$185 million on PCS stock options alone." Additionally, Sprint's tracking stock structure contributed to the failed attempt of MCI Worldcom to acquire Sprint PCS; this is because Sprint's parent approval, not PCS's, was required (Harris (1999)).

The major hypothesis that we present and test in this paper is that the greater self-serving managerial tendency is why some firms choose tracking stock over curve-out alternative of restructuring. In so doing, we also examine the long-term stock as well as

operating performance of parents that resort to these two types of restructuring methods. Agency problems are mentioned in Hass (1996) and Harper and Madura (2002), but extant literature is silent on its effects on the choice and performance of tracking stocks versus carve-outs.

There are quite a few studies on tracking stocks or carve-outs, and even more on spin-offs that represent complete separation of parent and subsidiary. However, only Chemmanur and Paeglis (2001) and Boone, Haushalter and Mikkleson (2003) jointly examine tracking stocks and carve-outs. The primary findings of both papers are that, for both tracking stocks and carve-outs, short-term stock price reactions are positive but long-term stock and operating performances are negative. Both also report that parent and subsidiary are more related (i.e., in similar line of business) in tracking stock issues than in carve-outs. Beyond this finding, the tradeoffs between the two are not clear.

To better identify the potential determinants involved in the tradeoff, we concentrate on “minority” carve-outs that are closer to tracking stocks. The similarity of the two allows us to isolate the determining factors and provides a cleaner comparison. More specifically, literature generally views carve-outs and tracking stocks as having the benefits of reduction of information asymmetry, alignment of managers’ and shareholders’ interests, increased focus, and increased probability of becoming takeover target. The latter two are not applicable to tracking stocks and minority carve-outs, since executives remain virtually the same and the parent retains control of the subsidiary.

Extant studies mostly focus on the benefits of carve-outs and tracking stocks. However, if we ignore the potential costs, endless separations of firms’ assets and divisions would have been observed. Our study contributes by explicitly considering a

cost that has been largely ignored in previous studies: managerial entrenchment. We also consider financial strength (access to financial markets) as one of the determining factors for the long-term performance in restructuring activities.

Empirical results here provide some support for managerial entrenchment being a factor in the choice and relative performance of tracking stocks and carve-outs. Of particular statistical significance is the extra compensation parent executives receive from subsidiaries. Perhaps these findings explain why new tracking stock issues have been largely absent in recent years.

The rest of the paper is organized as follows. Section two provides a survey of literature. Section three discusses the data and sample. Our hypotheses and research methodology are described in Section four, Section five reports results, while Section six concludes.

II. RELATED LITERATURE

Literature generally views that tracking stocks and carve-outs are motivated by the following considerations: better accountability and incentive for subsidiary's managers, the ability of firms to time the issues in hot markets, reduction of information asymmetry, increased focus, and increased probability of becoming a takeover target. (See for instance Boone, Haushalter, and Mikkelson (2003).) These motives can also apply to spin-offs. However, synergies resulting from internal capital market, economies of scale, coinsurance effect of diversification, and taxes could be lost in spin-offs. Nevertheless, support for tracking stock or carve-out as a way to preserve synergy is mixed. For example, D'Souza and Jacob (2000) find that tracking stock issues have smaller tax-loss, compared to spin-offs. On the other hand, Billet and Mauer (2000) do

not find tax as a major factor. Rather, they suggest that internal capital market is an important concern: firms with more efficient internal capital utilization perform better within tracking stock issues. Both Chemmanur and Paeglis (2001) and Boone, Haushalter and Mikkelson (2003) find evidence that subsidiary is more related to parent in the case of tracking stocks than in carve-outs. We feel that if divisions are in similar line of business, the most likely type of synergy would be economies of scale. Therefore, their results could suggest that preservation of synergy from economies of scale is an important consideration in tracking stock. In summary, firms that conduct tracking stocks and carve-outs supposedly are those who want to preserve their synergies while reaping the benefits, and the sources of synergies and benefits are many. Other than the potential loss of synergy, however, there are little discussions on costs of tracking stocks and carve-outs.

One such cost is agency conflict, which is suggested by Hass (1996) and Harper and Madura (2002). The latter performs an empirical testing of the role of agency conflicts. They find some results consistent with the existence of agency considerations. For example, short-term stock price reaction to tracking stock issuance is greater when the parent's debt ratio is low and when the parent's prior stock performance is poor. Because firms with low debt ratio and inferior stock performance are likely those with considerable agency problems, the results are interpreted as consistent with a reduction in agency problem. Nevertheless, they document negative long-term performances. Consequently, they conclude "...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." They

further point out that additional agency problems probably are inter-firm wealth transfers resulting from misallocation of resources or mis-pricing of IPO. Chemmanur and Paeglis (2001) also find negative long-term returns and make a similar point: "...firms issuing tracking stock are able to eliminate fewer inefficiencies as a result of restructuring, and may to some extent even create new ones." Here we contribute by comparing two similar activities that differ primarily in the degree of managerial discretion and entrenchment, thus providing more insight on the effects of agency conflicts.

An intriguing theory by Gigler and Hemmer (2002) indicates another agency cost. In their model, the market price for a subsidiary provides additional information to managers concerning future possible wages, who would then choose their subsequent actions to maximize their own interests and unwilling to make long-term commitment. Stated differently, having additional subsidiary information produces an adverse incentive effect that may hurt shareholders. In their model, the creation of a subsidiary would be beneficial only if optimal contracts for divisions differ considerably. Therefore, they hypothesize that separation only makes sense for divisions that are sufficiently different in terms of optimal compensation contracts. Interestingly, their model seems to produce a prediction on business relatedness that is opposite to existing empirical finding. Their model suggests a subsidiary should be created only when the underlying businesses of the parent and the subsidiary are considerably different, while empirical studies reviewed above imply that subsidiaries are often closely related to parents. Their theory is different from our focus on managerial entrenchment in that they assume complete contracting while we do not.

Many studies document a positive short-term stock reaction to the announcement of issuing tracking stock, including Logue, Seward, and Walsh (1996), Billet and Mauer (2000), Zuta (2000), D'Souza and Jacob (2000), Elder and Westra (2000), Chemmanur and Paeglis (2001), and Harper and Madura (2002). Positive stock returns for parent firms are also found in announcements of equity carve-outs (e.g., Schipper and Smith, (1986); Anslinger, Carey and Gagnon (1997); Allen and McConnell (1998); Vijh (2002); and Madura and Nixon (2002)). Although evidence overwhelmingly indicates a short-term gain, reasons for the gain are not clear. If timing and information asymmetry are critical factors, firms should sell subsidiary stocks when they are overvalued, implying that the larger the relative size of subsidiary, the lower the abnormal return (Nanda (1991)). However, Vijh (2002) finds that, for carve-outs, abnormal returns are higher the size of subsidiary relative to the parent. Billett and Vijh (2004) find no significant reduction in information asymmetry, as measured by earnings forecast error. Elder, Jain, and Kim (2005) in fact show an increase in the information asymmetry component of the bid-ask spread following tracking stock announcements. On the other hand, Zuta (2000), Gilson, Healy, Noe and Palepu (2001) and Chemmanur and Paeglis (2001) document an increase in the number of analysts following tracking stocks and carve-outs.

Our study focuses more on potential agency conflicts, which are better captured in the long run. There are relatively fewer papers that examine long-term performances. Harper and Madura (2002), Billett and Vijh (2004) and Clayton and Qian (2004) find that the parents of tracking stock firms are negative or neutral performers in the long term. Michaely and Shaw (1995) and Madura and Nixon (2002) show that carve-out parents substantially under-perform the market subsequent to carve-outs. The latter study further

indicates that the long-term performance of parents is poorer for those that were distressed prior to carve-outs, suggesting that carve-outs do not alleviate agency problems. Regarding subsidiary stocks, Vijh (1999) and Powers (2003) report that carve-out subsidiaries do not demonstrate significant positive or negative long-run return. Powers (2003) shows a negative relationship between long-term abnormal return and percentage of shares sold, consistent with the notion that firms can time the market – selling shares when they are overvalued.

As mentioned earlier, only two studies, Chemmanur and Paeglis (2001) and Boone, Haushalter and Mikkelson (2003), directly compare tracking stocks and carve-outs. Both find a significant negative long-term performance, measured either in terms of stock returns or operating returns (changes in returns on assets). Boone, Haushalter and Mikkelson (2003) document a negative relationship between long-term returns and fractions of shares held by parents, suggesting that tight control by parent hurt shareholders. Although they do not offer an explicit explanation for this result, it is plausible that tight control by the parent creates additional agency problems.

Allen and McConnell (1998) present a theory that explicitly recognizes the important role of managerial discretion. They hypothesize that managers are reluctant to give up control unless it is necessary and that more financially constrained parents likely choose carve-out over spin-off. Consistent with the theory, carve-out firms tend to have prior poor performance and high debt. Their theory is extended here to the choice between tracking stocks and carve-outs. Because only a small fraction of tracking stocks is issued through IPO, we hypothesize that the carve-out parents are in a more immediate

need for cash and their financial conditions are poorer than the tracking stock counterparts.

III. DATA AND SAMPLE SELECTION

Equity carve-outs have been a popular form of corporate restructuring, with average annual volume of more than \$20 billion between 1995 and 2000 (Annema, Fallon and Goedhart, 2001). On the other hand, tracking stock issues vary considerably over time. For instance, seventeen announcements of tracking stock structure were made in 1999, while eight companies withdrew in 2000. For instance, Pittston adopted tracking stock in 1993 but eliminated it in 2000. After the dot-com bubble, tracking stock issues have been absent. Nevertheless, in 2001, Worldcom adopted the tracking stock structure intended to reflect the separate performances of its Worldcom and MCI businesses.

Our sample covers carve-outs and tracking stocks, starting from 1991 because all but two tracking stocks were created after 1990.¹ The initial samples of 237 equity carve-outs and 52 tracking stocks announcements between 1991 and 2001 are derived from SDC database and cross-checked with Lexis/Nexis. For the carve-out sample, we include only minority carve-outs in which parents maintain over 50% of the ownership in restructured units. Thus, “carve-outs” refer to minority carve-outs hereinafter. For companies that conducted repeated carve-outs, we keep only the first one. The sample firm also needs to be listed in Standard and Poor’s Compustat and Center for Research in Security Prices (CRSP) to ensure that financial statements data, executive compensation, and stock return data are available for further analysis. These screening procedures produce a carve-out sample of 57 firms. For the tracking stock sample, 22 announcements never materialized. Of the remaining 30, four were excluded for their

foreign origins. Consequently, the tracking stock sample consists of 26 firms. Table 1 reports the frequency of announcements across years. Most of the tracking stocks in the sample were created in 1999, while 1996 is the year in which most minority carve-outs occurred.

As one of the key hypotheses is to test whether managerial self-serving behavior plays a role in the restructuring decisions, we investigate the change in executive compensation after restructuring. We collected managerial compensation data from proxy statements one year before the restructuring and one year after. Other corporate governance variables such as insider holdings, institutional holdings, and board composition are obtained from the Compact Disclosure CD-ROM. We also extract accounting and operating performance data and earning forecast errors from COMPUSTAT.

IV. HYPOTHESES, METHODOLOGY AND VARIABLE DEFINITIONS

Major Hypotheses

Our main hypothesis is that because tracking stocks are subject to a greater degree of managerial discretion and control, they are more vulnerable to managerial self-serving behavior, compared to carve-outs. The implications are that, relative to carve-outs, 1) tracking stocks are more likely to be chosen by entrenched managers; 2) tracking stocks' long-term performances are likely to be inferior; 3) a tracking stock's long-term performance is worse for firms occupied by entrenched managers. We also include financial strength as a potential factor in the choice and performance of tracking stock and carve-outs. We hypothesize that tracking stock parents are characterized by greater

¹ The first tracking stock issues occurred in 1984 by General Motors.

financial strength prior to announcements. More detailed descriptions of our hypotheses are presented as we discuss the variables.

Choice between Tacking Stocks and Carve-outs

We employ a logistic regression analysis to test our hypothesis regarding how firms choose between minority carve-outs and tracking stock. The dependent variable in this regression is a dummy, (TRACK = 1 for tracking stocks and 0 for carve-outs). For the purpose of exposition, we classify independent variables into two groups: managerial entrenchment variables and other variables.

Managerial Entrenchment Variables

To measure managerial discretion and self-serving tendencies, we investigate changes in managerial compensations, institutional and insider holdings, and board size. Because parent's executives, not subsidiary's, are the ones who supposedly initiate restructuring, we utilize only parent company's data and parent executive compensations. The proxy statements list equity-related compensations (i.e., stocks and options) separately for the parent and subsidiary, but not so for cash compensations. Thus, our data source allows us to calculate three components of compensations, as follows. CASH is the change (the year after minus the year before restructure) in cash-related compensation surrounding restructuring, divided by total compensation. Total compensation is defined as the sum of cash compensation, stock awards, long-term investment pool, and stock options paid to the top five executives. Shareholdings are measured in terms of dollar amount of shares distributed to the top five executives. Stock options are estimated as the present value of options based on the Black-Scholes Option Pricing Model at the time of grant. The second component of executive compensation,

PARENT_STOCK, is the change in equity-related compensation of the parent stock, also scaled by total compensation. Finally, SUB_STOCK is the change in equity-related compensations of the subsidiary stock (paid to parent executives). It is, again, divided by total compensation. We hypothesize that the portion of executive compensation derived from the restructured unit is greater for tracking stocks than for carve-outs. Other corporate governance measures are insider holdings, institutional holdings, and board size. INSIDER, insider ownership, is the percentage ownership of officers and directors of the parent. INSTITUTION, institutional ownership, indicates the percentage of shares held by institutional investors. BOARD_SIZE, is a proxy for the board effectiveness, measured by the number of executives on the parent's board. There are reasons to believe that insiders and institutional investors are more capable monitors of firms than individual investors, for they typically have substantial holdings and have better access to information. Thus, the lower the insider and institutional ownership of a parent firm, the less likely the parent firm will engage in carve-outs, which involve initial public offerings (IPO) thus stronger disclosure requirement. The board size may reflect the degree of control that the board members have on the parent. Jensen (1993) suggests that the effectiveness of the board is inversely related to the number of directors as he contends that smaller boards tend to be more efficient. In sum, if managerial entrenchment plays a critical role in the restructuring decision, then we expect to see lower insider holdings, lower monitoring role of the institutional investors, and a larger board of directors in tracking stock structure than for carve-out. Data for all variables in this study represent the most recent data before restructuring.

Other variables

Another new hypothesis in this study is that the carve-out parents are in inferior financial conditions than tracking stocks'. The proxy of financial strength and liquidity of a firm is the interest coverage ratio (INT_COV). We feel that this measure is more appropriate than the debt ratio, because interest coverage simultaneously incorporates debt payments as well as earnings power.

While our focus is in potential agency conflicts, we also include factors examined in other studies, as follows. A measure of similarity of parent and subsidiary's businesses is notated as RELATEDNESS, the number of the first digits of four-digit SIC codes that are the same for the parent and subsidiary. As an example, if the four-digit SIC codes of the parent are exactly the same as those of the restructured unit, a value of 4 is given. If first three SIC codes are the same, 3 is given, and vice versa. This metric follows that of Chemmanur and Paeglis (2001). With respect to information asymmetry, we use the absolute difference between latest actual quarter earning per share and average earnings estimate, divided by the latest actual earnings per share, denoted as INF_ASY (Krishnaswami and Subramaniam (1999)). A larger percentage indicates higher level of information asymmetry between investors and managers. If restructuring reduces information asymmetry, we expect a positive relationship between pre-restructure INF_ASY and firm performances after restructuring. Fama and French (1992) find that firm size (FIRM_SIZE) and market to book ratio (MKT/BOOK) are important determinants of stock returns. Consequently, these two variables are included in the regression analyses.

Analysis of long-term performances

To see if the above factors affect long-term performance, we apply OLS regression approach to two equations, with market performance being the dependable variable in one and operating performance in the other. We measure long-term market performance by three-year buy-and-hold stock return. To adjust the stock performance of restructuring parents with that of industry peers, we obtain a matching firm for each restructuring parent with the same SIC code and the closest asset size. The industry-peer-adjusted return is calculated as the return of the restructuring firm minus that of the matching firm. The operating performance is measured, following Boone, Haushalter and Mikkelson (2003), by computing changes in return on assets (ROA).

The independent variables are the same as those in logistic regression. Additionally, we have argued that tracking stocks are more likely to be affected by managerial self-interest. Therefore, we allow the coefficients of corporate control variables to vary between the two restructuring methods. Specifically, we pool the data of tracking stocks and carve-outs in one regression, but include several interaction terms: TRACK * corporate control variable; as defined earlier, TRACK equals 1 for the tracking group and 0 for the carve-out.

V. EMPIRICAL RESULTS

Univariate Analysis

Table 2 summarizes the sample and reports the mean, median, and differences in mean and median between the tracking stock and the carve-out groups. The mean change in total compensation (from one year before restructuring to one year after), TOTAL, is 121% for tracking stocks, much higher than that of the carve-out sample, the average for which is only 66%. Similarly, the median percentage changes in compensations are 59%

and 30% for the tracking stock group and the carve-out group, respectively. Both the mean and the median differences between the two groups are significant at the 10% level. The results are similar for parent stock compensations (PARENT_STOCK) and subsidiary stock (SUB_STOCK): they are greater for tracking stocks than carve-outs. Cash compensations, however, are insignificantly higher for carve-outs. These initial results are mostly consistent with our hypothesis that tracking stock managers have greater hold of their firms and indulge themselves with higher pays. Since parent executives' jobs remain virtually the same after restructuring, it can be argued that compensation in the form of subsidiary stock is unnecessary. Table 2, however, shows that the difference in SUB_STOCK between tracking stocks and curve-outs is strikingly large. Further details (not shown in the table) indicate that 35% of the tracking stock firms' executives receive subsidiary stocks, while only 9% of the carve-out firms having directors on the boards of both the parent and the subsidiary and receive subsidiary stocks. Although 35% is not large in absolute sense, it is substantial given the arguably needless nature of subsidiary stock compensations.

Other managerial factors also indicate some differences between the two samples. The tracking stock parents have, on average, a slightly larger board of 11 executives, compared to that of equity carve-out firms of 10. The difference, however, is not significant. The average insider holdings and institutional holdings for the tracking stock sample are both lower than those of the carve-out sample, confirming our conjecture that tracking stocks are more tightly controlled by managers. The mean difference in insider holdings between the two groups is significant at the 10% level

The difference in information asymmetry measure, INF_ASY, is large. The average forecast error for the tracking stock group is 0.35, whereas that of the carve-out sample is 0.21. On the other hand, the median is greater for the carve-out sample. Consistent with previous research, we find that tracking stock parents are more related to their restructured subsidiaries than carve-out parents. The average value of RELATEDNESS for the tracking stock sample is 2.8 and the median is 3.0, compared to 1.5 and 1.0 of the carve-out sample. Differences in both the mean and the median between the two groups are significant at the 10% level.

Table 2 also shows that parents of tracking stocks are in better financial shape than those of the carve-out group. Both mean and median interest coverage, INT_COV, are significantly higher for the tracking stock group than the carve-out group. Parents of tracking stock group have higher (although not statistically significant) market-to-book ratios than the carve-out group. In terms of profitability (ROA), the carve-out group underperforms the tracking stock sample at a statistically significant level.² Taken together, it appears that need for external capital (IPOs) by curve-out parents is driven not by higher growth potential but lower profitability. Finally, measured either by book value (TOTAL_ASSETS) or market value (FIRM_SIZE), tracking stock parents are on average larger in sizes.

Logistic regression analysis of the choice between tracking stock and carve-out

To investigate the factors influencing firms' choice between tracking stocks and carve-outs, we perform a logistic regression, with TRACK as the dependent variable.

² The large difference between mean and median is mainly due to the few firms such as Sepracor Inc. that had a return on assets of -44.787%.

This variable takes on the value of one for tracking stocks and zero for carve-outs. The results are displayed in Table 3.

Table 3 Model (1) presents evidence that total compensations and the probability of choosing tracking stock are positively correlated. Model (2) includes other relevant variables and the significant coefficients imply the following: firms with greater interest coverage prior to announcements and firms whose subsidiaries are more related to parents are more likely to choose tracking stocks. The former is a new result that is consistent with our hypothesis that liquidity plays a role in the restructuring decision; the latter finding is in agreement with that of previous studies. The result also implies that total compensation is not significantly, though still positively, associated with the propensity to issue tracking stocks. It is likely that more insights can be gained by breaking down stock compensations into parent and subsidiary stocks. Due to data limitation however, we cannot do the same breakdown for cash compensations. The results in Model (3) indicate that executives receiving less cash compensations but more subsidiary stocks are more likely to opt for tracking stocks. Because subsidiary stock compensation is arguably unjustified for parent executives, this piece of evidence is consistent with our hypothesis that tracking stock sample firms are subject to a greater degree of managerial entrenchment. The fact that tracking stock executives being associated with less cash payments appears to be contrary to our hypothesis, but it should be kept in mind that the cash compensation here include those paid by parent and subsidiary, obscuring the real incentive effects of these payments. The coefficient of INF_ASY, the information asymmetry measure, is significantly positive, suggesting that the parents with relatively greater information asymmetry before restructuring prefer to

issue tracking stocks. This result is hard to be explained by minimization of information asymmetry, since carve-outs with their typically stronger disclosure requirements should be chosen if reducing information asymmetry is the goal. Alternatively, if firms with greater information asymmetry are also those with stronger degree of managerial entrenchment, the evidence here could be interpreted as supportive for our hypothesis. More specifically, we argue that firms subject to a greater degree of managerial entrenchment would probably be more resistant to disclosing all relevant information, thus choosing the less-regulated alternative—tracking stock.

Analysis of long-term performances

Table 4 compares buy-and-hold stock returns and peer-adjusted returns of parents who engage in tracking stocks and those carve out subsidiaries. The return is computed for a holding period of three years after restructuring, and for comparison purpose, we also report returns three years prior. Prior to restructuring, both groups' performances are indistinguishable from their peers, suggesting that either timing is not an important concern or that firms' ability to time the issues is, on average, not superior. Consistent with Chemmanur and Paeglis (2001) and Billett and Vijh (2004), post-restructuring performances of tracking stock and carve-out parents on average are lower than those of industry peers. The average adjusted three-year return of tracking stock parents is -0.494 and is statistically significant. In contrast, carve-out parents' underperformances are insignificant. Thus, the evidence provides support for our hypothesis that tracking stocks' performances are likely to be lower due to their potentially greater agency conflicts. However, it should be noted that the insignificant performance for carve-outs is due to large deviations in performances. Given that medians are probably more robust statistics

in the presence of extreme values and that both sets of firms' median performances are insignificantly different from their peers, the evidence supporting our hypothesis is not overwhelming. The table also compares the operating performance, as measured by changes in ROA, of the two groups. Both experience a decline in return on assets three years after restructuring. This is consistent with the results in Boone, Haushalter and Mikkelsen (2003) and Power (2003). As in stock performances, the mean operating performance is significantly lower than peers for tracking stocks, but insignificantly so for carve-outs. This reinforces our conclusion that tracking stocks are on average poorer performers. In summary, sub-par long-term performances are evident for carve-outs and especially for tracking stocks³.

Table 5 reports the analysis of the determinants of three-year stock and operating performances of the pooled sample. Here we include TRACK (=1 for tracking stocks) as an independent variable, the coefficient of which would indicate the difference in performances between tracking stocks and carve-outs, after controlling for other known factors. Moreover, we include interaction variables (TRACK * corporate control variable) to investigate the differential effects of corporate control on restructuring methods.

We first focus on the determinants of stock performance, given in the first two regressions in Table 5. It is noteworthy that tracking stock' performances tend to be positively linked to parent stock compensations but negatively related to pay in the form of subsidiary equity. This indicates that compensations in the form of subsidiary stock

³ To check for the robustness of the results, we separate firms into a group that parents owning over 80% of subsidiary and the other owning between 50% and 80% of the subsidiary (The financial statements of the parent and subsidiary are consolidated for tax purposes when the parent owns over 80% of the ownership). There is no significant difference in the long-term stock performance and the operating performance between the two subgroups. We also compare the performance of tracking stocks involving IPOs and those without. The results are also qualitatively the same.

present conflicts and the result here in fact shows that this type of compensation is counter-productive for tracking stocks. Thus, the overall evidence regarding executive compensations point to the following: Tracking stocks tend to pay more in the form of subsidiary stock and this payment is on average associated with poor long-term performance, consistent with our hypothesis. While other measures for managerial entrenchment including institutional holdings and board size are insignificant, the coefficient of insider holdings is significantly negative and particularly so for tracking stocks, implying that insiders in these firms do not monitor the firms efficiently. In addition, recall that Table 2 indicates lower insider holdings for tracking stocks. Combining that result with a negative insider effect on performance here, we conclude that for tracking stock firms, the interests of insiders of the parents are not well aligned with those of shareholders. The coefficient of INF_ASY is positive; this result is sensible based on the information asymmetry argument that firms with greater information asymmetry prior to restructuring are the ones that most likely benefit from such activities.

The same regression is repeated on operating performance, measured by changes in ROA's. The signs of the compensation variables are the same as those for stock performances. While the coefficient on subsidiary stock is insignificant, the significant negative coefficient on cash compensation still provides hint for the existence of agency problems affecting operating performances. Model (3) also shows that operating performance is statistically positively related to institutional holdings for carve-outs, but the relation is negative for tracking stocks (the coefficient on INSTITUTION minus that of INSTITUTION*TRACK equals -0.028). This implies that institutional investors' monitoring activity is less likely to be productive for tracking stocks, a result consistent

with our case that the lack of shareholder protection in tracking stock structure presents problems in monitoring and produces inferior performances. However, Model (4), which does not decompose compensations, indicates that total compensations are negatively related to operating performances for carve-outs but the relation is positive for tracking stocks. At first glance, the result for tracking stock does not appear to be consistent with our hypothesis. Nevertheless, it should be emphasized that we do believe that compensation contracts, if properly constructed, could provide incentives for better performance, especially operating performance that is to a larger extent more controllable by managers than stock performance. Our point is that compensation contracts that are manipulated or influenced by self-serving managers likely destroy shareholders' wealth. Therefore, we feel that analyses involving the decomposition of compensations are more informative and the results indeed show some patterns that cannot be explained by managers maximizing shareholders' wealth.

VI. CONCLUSIONS

In this paper, we examine factors influencing the choice between tracking stocks and minority carve-outs and their performances. We expand the research in this field by incorporating a factor that was largely ignored in extant literature: managerial entrenchment. We find that the following firms have a greater tendency to choose tracking stocks over carve-outs: firms with a tendency to increase executive pays--especially those in the form of subsidiary stocks, firms that are more tightly controlled by managers, and firms with greater financial strength prior to restructuring. The former two are consistent with our conjecture that managerial entrenchment plays a role in the choice between tracking stocks and carve-outs. The latter result is consistent with our

other hypothesis that prior financial strength influences the decision. Equally important findings are that both are characterized by poor long-term performances and that tracking stocks' performances are on average inferior to those of carve-outs. Evidence suggests that these sub-par performances can be partially attributable to managerial entrenchment. We argue that the control mechanism of the tracking stock structure-- with the same board of directors serving both the parent and the subsidiary-- creates conflicts of interests. Payments of subsidiary stock to parent executives especially do not make sense, yet they are fairly common among tracking stocks. While new tracking stock issues are rare in recent years, the evidence could help to design new restructuring methods and new security designs.

Table 1

The Number of Tracking Stocks and Minority Equity Carve-outs from 1991 to 2001

Year	Tracking Stock	Minority carve-outs
1991	1	3
1992	1	4
1993	2	7
1994	1	5
1995	2	2
1996	2	9
1997	2	4
1998	2	4
1999	7	4
2000	3	8
2001	3	7
Total	26	57

Table 2
Summary Statistics of Tracking Stock and Carve-Out Samples

The variable TOTAL is the percentage change in total compensation; CASH is the percentage change in cash compensation; PARENT_STOCK is the percentage change in parent stock compensation; SUB_STOCK is the percentage change in subsidiary stock compensation; INSIDER is the insider holdings; INSTITUTION is the institutional holdings; BOARD_SIZE is the board size; INT_COV is the interest coverage ratio, before tax; RELATEDNESS is the measure of relatedness; INF_ASY is the information asymmetry measure; MKT/BOOK is the price-to-book ratio; ROA is the return on assets; and TOTAL_ASSETS and FIRM_SIZE are the book value and market value of the parents (in \$1,000). The t-test and Mann-Whitney are used to test the significance of mean and median differences. The signs ***, **, * represent significance at the 1 %, 5%, and 10% levels, respectively. Sample size is 26 for the tracking group and 57 for the carve-out group.

Variables	<u>Tracking Stock Sample</u> N=26		<u>Carve-Out Sample</u> N=57			
	Mean	Median	Mean	Median	Mean Difference	Median Difference
TOTAL	1.21	0.59	0.66	0.30	0.55*	0.29*
CASH	0.17	0.12	0.33	0.18	-0.16	-0.06
PARENT_STOCK	1.04	0.51	0.34	0.01	0.70**	0.50**
SUB_STOCK	0.17	0.10	0.01	0	0.16***	0.10***
INSIDER (in %)	4.39	0.50	11.70	1.55	-7.31*	-1.05
INSTITUTION (%)	42.95	45.39	48.45	47.48	-5.50	-2.09
BOARD_SIZE	11.30	11.50	9.86	10.00	1.44	1.50
INT_COV	7.81	6.65	3.38	2.78	4.43*	3.87*
RELATEDNESS	2.80	3.00	1.55	1.00	1.25***	2.00***
INF_ASY	0.35	0.10	0.21	0.15	0.14	-0.05
ROA (in %)	3.44	4.40	-0.19	2.13	3.63*	2.27*
MKT/BOOK	3.45	2.83	2.36	1.99	1.09	0.84
TOTAL_ASSETS	21,067	5,604	23,992	2,553	-2,925	3,051
FIRM_SIZE	56,533	10,188	40,032	5,336	16,501	4,852**

Table 3**Logistic Regression Analysis of the Choice between Tracking Stock and Carve-Out**

In the three regression models, the dependent variable is TRACK = 1 for tracking stocks and zero for carve-outs. The independent variables are as follows. TOTAL is the percentage change in total compensation; CASH is the percentage change in cash compensation; PARENT_STOCK is the percentage change in parent stock compensation; SUB_STOCK is the percentage change in subsidiary stock compensation; INSIDER is the insider holdings; INSTITUTION is the institutional holdings; BOARD_SIZE is the board size; INT_COV is the interest coverage ratio, before tax; RELATEDNESS is the measure of relatedness; INF_ASY is the information asymmetry measure; MKT/BOOK is the price-to-book ratio; ROA is the return on assets; and FIRM_SIZE is the market value of the parents (in \$1,000). p-values are in parentheses. The signs ***, **, * represent significance at the 1 %, 5%, and 10% levels, respectively. Sample size is 83, consisting of 26 for the tracking group and 57 for the carve-out group.

Dependent Variable	(1)	(2)	(3)
Intercept	0.312 (.000)	0.157 (0.807)	0.604 (0.301)
TOTAL	0.024* (0.075)	0.029 (0.656)	
CASH			-0.495** (0.013)
PARENT_STOCK			0.046 (0.522)
SUB_STOCK			0.535*** (0.006)
INSIDER		-0.005 (0.501)	-0.008 (0.233)
INSTITUTION		-0.002 (0.506)	-0.002 (0.529)
BOARD_SIZE		0.023 (0.478)	0.005 (0.871)
INT_COV		0.029* (0.085)	0.031** (0.048)
RELATEDNESS		0.016* (0.060)	0.060 (0.237)
INF_ASY		0.006 (0.285)	0.010* (0.069)
ROA		-0.024 (0.424)	-0.034 (0.217)
MKT/BOOK		0.030 (0.405)	0.017 (0.601)
FIRM_SIZE		-0.091 (0.453)	-0.120 (0.263)
Adjusted R ²	0.030	0.245	0.429
F-Statistic	3.264*	2.071*	3.058**
N (Sample Size)	83	83	83

Table 4
A Comparison of Stock and Operating Performances of
Tracking Stocks and Carve-Outs

This table displays mean, standard deviation, and median of stock and operating returns. The signs ***, **, * represent significance at the 1%, 5%, and 10% level, based on t test for means and Mann-Whitney test for medians. Sample size is 26 for the tracking group and 57 for the carve-out group.

	<u>Tracking Stock</u>			<u>Carve-outs</u>		
	Mean	Standard Deviation	Median	Mean	Standard Deviation	Median
<u>Three-Year Buy-and-Hold Stock Return:</u>						
Before	1.144***	1.889	0.051	1.071***	1.547	0.692
After	0.272	0.987	-0.151	0.027	2.233	-0.023
<u>Industry Peer Adjusted Three-Year Buy-and-Hold Stock Return:</u>						
Before	0.141	1.061	0.036	0.432	1.887	0.347
After	-0.494**	0.988	-0.351	-0.556	2.935	-0.014
<u>Three-Year Average Operating Performance (ROA in %):</u>						
Before	3.245***	4.583	3.362	-0.896	12.059	2.498
After	-1.285	12.578	1.464	-7.485***	24.414	0.876
<u>Industry Peer Adjusted Three-Year Operating Performance (ROA in %):</u>						
Before	-2.537	8.059	-0.333	1.594	22.876	-0.661
After	-6.072***	10.177	-4.079	-5.638	31.911	-1.845

Table 5
Regression Analysis of Three-Year Stock and Operating Performances

The stock performance is measured by three-year buy-and-hold stock return, and operating performance is measured by three-year average return on assets. p-values are in parentheses and ***, **, * represent significance at 1 %, 5%, and 10% levels, respectively. Sample size is 83--26 for the tracking group and 57 for the carve-out group.

Dependent Variable	Stock Performance		Operating Performance	
	(1)	(2)	(3)	(4)
Intercept	4.195 (0.082)	5.506 (0.034)	-0.839 (0.940)	-10.567 (0.376)
TOTAL		-0.037 (0.899)		-3.062** (0.042)
TOTAL*TRACK		0.099 (0.847)		4.387* (0.092)
CASH	-1.875 (0.190)		-12.682* (0.082)	
CASH* TRACK	-0.764 (0.904)		-8.359 (0.788)	
PARENT_STOCK	-0.115 (0.787)		1.046 (0.619)	
PARENT_STOCK * TRACK	2.239* (0.077)		4.405 (0.454)	
SUB_STOCK	3.224* (0.084)		6.588 (0.449)	
SUB_STOCK * TRACK	-6.851** (0.023)		-9.129 (0.497)	
INSIDER	-0.072** (0.014)	-0.050* (0.065)	-0.098 (0.451)	-0.047 (0.705)
INSIDER * TRACK	-0.600** (0.030)	-0.124 (0.327)	-1.252 (0.319)	-0.301 (0.621)
INSTITUTION	-0.009 (0.610)	-0.026 (0.138)	0.262** (0.010)	0.278*** (0.004)
INSTITUTION * TRACK	0.007 (0.790)	0.016 (0.555)	-0.290** (0.034)	-0.352** (0.015)
BOARD_SIZE	-0.062 (0.661)	-0.089 (0.511)	0.606 (0.389)	1.390** (0.045)
BOARD_SIZE * TRACK	0.662 (0.119)	0.264 (0.292)	2.245 (0.269)	-0.204 (0.865)
INT_COV	0.025 (0.639)	0.023 (0.683)	-0.418 (0.126)	-0.529* (0.070)
RELATEDNESS	0.001 (0.997)	-0.460** (0.048)	0.227 (0.867)	-0.099 (0.926)
INF_ASY	0.124** (0.011)	0.060* (0.077)	0.395* (0.076)	0.248 (0.127)
MKT/BOOK	-0.074 (0.617)	-0.025 (0.870)	0.580 (0.427)	0.406 (0.579)
FIRM_SIZE	-0.715 (0.157)	-0.542 (0.258)	-5.709** (0.029)	-5.363** (0.029)
OWNERSHIP_SOLD	0.188 (0.954)	-1.433 (0.633)	7.393 (0.648)	11.110 (0.449)
TRACK	-7.276 (0.108)	-4.075 (0.243)	-12.330 (0.561)	15.315 (0.362)
Adjusted R ²	0.211	0.127	0.515	0.380
F-Statistic	1.451	0.944	2.791**	2.310**

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