

**STOCK MARKET REACTION TO MANAGEMENT INCENTIVE
PLAN ADOPTION**
An Overview

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1. Introduction and summary

The papers by Brickley, Bhagat and Lease ('The Impact of Long-Range Managerial Compensation Plans on Shareholder Wealth') and by Tehranian and Waagelein ('Market Reaction to Short-Term Executive Compensation Plan Adoption') examine stock price performance around the time firms adopt management incentive plans. Each paper finds positive stock price performance. In this overview, I integrate the evidence presented in these two stimulating papers, and suggest additional tests of important economic hypotheses.

Before discussing the details of the two papers, I have some observations on the overall picture that emerges from the studies. First, the general conclusion of positive stock price performance around the time of incentive plan adoption is strongly supported by the evidence in the two papers, and is not due to some methodological quirk. In light of these two papers (with different samples yet similar results) and of Larcker's (1983) findings along the same lines, it is difficult to argue that incentive plans are merely an 'excessive perk' whose adoption hurts shareholders.

Second, there is evidence on reasons for the positive stock price performance. The evidence supports two views. One is that plan adoption leads to higher stock prices, via, for example, incentive effects. An alternative view is that higher stock prices lead to plan adoption: some of the data suggest the possibility that firms adopt plans after a period of favorable performance, and the data are consistent with the notion that plan adoption takes place in expectation of future stock price increases, that is, when management has favorable inside information about the firm's future prospects. As I shall

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discuss, future work can enhance the contribution of the current papers by providing more information on the relative importance of these two alternative views.

2. The samples and baseline results

Both papers examine incentive plans proposed by the firm's board of directors. The proposals are contained in proxy statements sent to the firm's shareholders and filed with the Securities and Exchange Commission (SEC). Brickley, Bhagat and Lease indicate that all plans proposed are subsequently adopted. These authors examine 175 plans adopted in the 1979–1982 period, while Tehranian and Waegelein examine 42 plans from the 1971–1980 period. All plans examined in the two papers make managerial compensation a function of firm performance, measured by variables such as stock price change or growth in earnings per share. Brickley, Bhagat and Lease examine 'long-term' plans, where the interval for measuring performance is typically several years. Tehranian and Waegelein focus on 'short-term' plans, where firm performance is measured over a one-year interval.

Table 1

Summary of stock price performance around the time of management incentive plan adoption.

Paper	Sample size	Observation period	Cumulative mean abnormal stock price performance	Z-value
Brickley, Bhagat and Lease ^a	83	Board meeting date through day after receipt of proxy statement by the Securities and Exchange Commission (mean length = 58.4 trading days)	2.4%	2.18
Tehranian and Waegelein ^b	42	Months – 3 through 0 relative to proxy statement date	11.3%	3.03
		Months – 7 through – 4 relative to proxy statement date	11.0%	4.32

^a From table 5, Brickley, Bhagat and Lease, 'The impact of long-range managerial compensation plans on shareholder wealth', *Journal of Accounting and Economics*, this issue.

^b From table 1, Tehranian and Waegelein, 'Market reaction to short-term executive compensation plan adoption', *Journal of Accounting and Economics*, this issue. Z-values for the cumulative average abnormal performance measures are not reported in that paper. The values shown here are derived under the assumption that the individual monthly test statistics reported there are independent and unit normal under the null hypothesis.

Table 1 summarizes the central results of the two papers on positive stock price performance around the time of plan adoption. For 83 firms with available data, Brickley, Bhagat and Lease find estimated average abnormal performance of 2.4% in the period between Board of Directors meeting and proxy statement receipt by the SEC. Based on their tests, the estimate of average abnormal performance is statistically significant, and is not driven by a few outliers. Tehranian and Waegelein find stronger indications of abnormal performance. For months -3 through 0 relative to proxy statement date, there is 11.3% estimated abnormal performance; if instead months -7 through 0 are examined, the estimated cumulative abnormal stock price run-up is 22.3%.

3. Interpretation of the results

3.1. Hypotheses about why plan adoption results in a positive market reaction

The results in table 1 lend support to the view that plan adoption leads to a positive market reaction. Furthermore, in this view, the higher point estimates of Tehranian and Waegelein would not be surprising (to the extent the differences are statistically significant). These authors focus only on new plans, whereas Brickley, Bhagat and Lease include changes in existing plans, and such changes will likely have a smaller stock price effect.

Between the two papers, there are at least three hypotheses about why plan adoption would bring about a positive reaction. The first hypothesis is that the plans have incentive effects. The second is that plan adoption reveals inside information that management thinks the stock is undervalued. The third is that the plans have tax effects.

While all three hypotheses are worthy of consideration, further work is necessary to distinguish between them. None of the tests in the two papers do so, or account for the cross-sectional variation in share returns. I am uneasy about attributing a large positive stock price effect solely to tax effects. In general, not all plans are tax advantageous [see Miller and Scholes (1982)]; perhaps better data would allow us to partition the samples according to the expected sign of tax effects, and to estimate *a priori* the magnitudes of the implied stock price reaction. Furthermore, Larcker (1983, p. 12) argues that tax effects are likely to be relatively small. He finds evidence of increases in corporate capital investment following plan adoption; such changes are consistent with an incentive explanation, but harder to reconcile with a tax story.

3.2. Other explanations for the positive stock price performance: Could abnormal performance trigger plan adoption?

Table 1 indicates that some of the abnormal returns occurred well in advance of plan proposal. Specifically, Tehranian and Waegelein find 11.0% estimated average abnormal performance from months -7 through -4 rela-

tive to the proxy statement date. In this period the sample firms typically have not yet had a board meeting to finalize the incentive plan proposal. Although the stock price behavior in months -7 through -4 could be attributable to the expectation of plan proposal or to a subsample of firms with board meetings in this period, the results at least suggest the possibility that firms adopt plans after a period of good performance.

This possible link between good performance and subsequent plan adoption is mentioned by Tehranian and Waegelein. However, I am unsure about the model of firm behavior that would lead to the relationship. In particular, what recent changes within the firms would have caused plan adoption, and why are these changes accompanied by positive share value changes? How important is the occurrence of positive abnormal performance in determining which firms adopt plans? Answering such questions remains for future work.

3.3. The confounding effect of earnings announcements

Controlling for the effects of contemporaneous earnings announcements is important to our understanding of the extent to which higher stock prices lead to plan adoption or vice-versa. The timing of earnings announcements around plan adoption is not addressed in detail in the two papers. However, Tehranian and Waegelein indicate that all of their sample firms had annual earnings announcements in months $+10$ and $+11$ relative to proxy statement date. Thus, if I assume that reporting dates for each sample firm are fairly regular, annual earnings must also have been released in about month -2 or -1 relative to proxy statement date. If similar earnings reporting behavior also applies to the Brickley, Bhagat and Lease sample, many of their firms would have had annual earnings announcements in the period between board meeting date and SEC proxy statement receipt date, the period in which Brickley, Bhagat and Lease found positive abnormal performance.

How much of the positive stock price performance is driven by contemporaneous earnings announcements is not entirely clear. In the Tehranian and Waegelein paper, the earnings numbers released prior to plan adoption do not seem unusual. A 'normal' proportion of their sample firms report earnings increases. This reduces any concern that the positive stock price performance is due to earnings announcements, or due to favorable performance prior to the firm's decision to adopt a plan.

One possible difficulty with the use of earnings numbers to infer economic performance of the sample firms is that if managers know that their compensation will become linked to growth in reported earnings per share, they have incentives to understate current earnings before the new compensation plan is adopted. Tests for unusual earnings behavior could control for this possibility by focusing on those sample firms where compensation is not a function of accounting earnings. Examination of the frequency of changes in accounting

procedures around the time of plan adoption [see Healy (1985)] would also be useful. Furthermore, although it is probably a minor quibble here, even if there is nothing unusual about earnings of the sample firms, contemporaneous earnings announcements increase the variance of stock returns. Under certain conditions, event study tests will misstate the statistical significance of the results and for some methodologies abnormal performance will be 'found' when none is present [see Brown and Warner (1984)].

4. Firm performance following plan adoption: Further evidence and a final puzzle

Tehrani and Waegelein report significant increases in annual earnings in the year immediately following plan adoption. Under the hypothesis that the plans have incentive effects, this is expected. The same result is expected under the hypothesis that managers of the sample firms brought about plan adoption when they had inside information that earnings would increase.

A surprising result, however, is that a strong positive average share price reaction occurs at the time of annual earnings announcement, typically month +10. This result intrigues me. Assuming that it does not merely reflect some *ex post* sample selection bias, it seems inconsistent with market efficiency, and suggests a profitable trading rule: buy on news of plan proposal and hold through earnings announcement. Tehrani and Waegelein indicate that such a strategy produces abnormal profits on the order of 13%. While further work on the sensitivity of their results to alternative measurement procedures and to different feasible trading rules would be helpful in assessing the strength of these findings, the results seem worthy of closer scrutiny. Not only could this yield additional insights into the behavior of security prices around incentive plan adoption, but if there is a profit opportunity here, I would like to find out in time to call my broker.

References

- Brown, S. and J. Warner, 1984, Using daily stock returns: The case of event studies, *Journal of Financial Economics*, forthcoming.
- Brickley, J., S. Bhagat and R. Lease, 1985, The impact of long-range managerial compensation plans on shareholder wealth, *Journal of Accounting and Economics*, this issue.
- Healy, P., 1985, Evidence on the effect of bonus schemes on accounting procedure and accrual decisions, *Journal of Accounting and Economics*, this issue.
- Larcker, D.F., 1983, The association between performance plan adoption and corporate capital investment, *Journal of Accounting and Economics* 5, 3–30.
- Miller, M. and M. Scholes, 1982, Executive compensation, taxes, and incentives, in: W.F. Sharpe and C.M. Cootner, eds., *Financial economics: Essays in honor of Paul Cootner* (Prentice-Hall, Englewood Cliffs, NJ) 179–201.
- H. Tehrani and J. Waegelein, 1985, Market reaction to short-term executive compensation plan adoption, *Journal of Accounting and Economics*, this issue.