Matching Delivered Performance

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Abstract

We claim that the greater the extent to which a performance measure matches delivered performance, the simpler and more robust are the compensation plans based on it. Stock price changes poorly match delivered performance when they anticipate performance. This causes three problems: (1) Price-based plans become complex as they require knowing the extent to which prices lead performance; (2) Price-based plans are less robust to unforeseen events; (3) Price-based plans require period-by-period changes in pay-for-performance relationships even when the underlying production function remains unchanged. The relative use of earnings- and price-based compensation depends on the extent to which each matches delivered performance.

JEL classifications: G3, J3, M4

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1. Introduction

Prior research argues that stock prices measure performance better than earnings because accountant's conservatism causes earnings to lag performance and managers can and do manipulate earnings. Many economists are thus puzzled by the widespread use of earnings-based plans for top managers when stock prices appear more informative, and are easily verifiable, and cheaper to observe.

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Prior research provides limited support for the use of earnings for rewarding senior managers. Sloan (1993) argues that earnings are used because prices contain macroeconomic "noise" such as the effect of interest rates. However, Easton et al. (1992) provide strong evidence that earnings equal stock price changes over long horizons, which means both prices and earnings are equally susceptible to macroeconomic "noise" over the long run. Prices may react more swiftly to macroeconomic factors, but they often do so because earnings are expected to follow suit. We abstract away from the macroeconomic "noise" issue by assuming that earnings and price changes are equal over the longer horizon.

Paul (1992) and Feltham and Xie (1994) show that earnings are useful because they provide disaggregate information. However, this does not explain why aggregate earnings continue to be widely used for compensating senior managers. We examine a single-task setting to abstract away from the demand for disaggregate performance measures.

The objective of our paper is to offer another rationale for the use of earnings – earnings are better matched with delivered performance than stock price changes, at least in some settings. We do not claim that earnings are better in all cases. We purposely focus on settings where they dominate prices as performance measures to illustrate our argument. In practice, both earnings and stock prices are used to reward managers because the extent to which earnings and prices match delivered performance is contextual.

Economists consider three attributes of performance measures – informativeness, verifiability, and cost. These attributes, however, cannot explain the choice of performance measure when alternative performance measures are equal over long periods but differ over shorter periods. We argue that a fourth attribute of performance measures – **matching delivered performance** – where "delivered performance" is the value added by a manager's current actions, (as against anticipated future actions regardless of how likely they are), is important. A performance measure that matches delivered performance leads to simpler and more robust contracts. This, we argue, *partially* explains the use of earnings-based plans in compensating senior managers.

The following example illustrates why rewarding on the basis of delivered performance is important. In January 1993, Christopher Steffen was appointed as the chief financial officer of the Eastman Kodak Company. Within two days of his appointment, Kodak's market value soared by about US\$2.2 billion. The *Wall Street Journal's* "Heard on the Street" column (21 January 1993) attributed much of the rise in Kodak's market value to Steffen's proven ability to cut costs. Three months later, Steffen resigned without cutting costs and Kodak's market value dropped by about US\$2 billion. The rise in Kodak's stock price in January 1993 reflected anticipated future performance that was not delivered. Thus, the stock price change in January 1993 was not a good measure of Steffen's delivered performance. Another example is the rise and fall of Sunbeam's stock price with the arrival and departure of Al Dunlap.

Firms need to measure delivered performance because of contracting constraints. They do not want to pay their managers in advance because it is costly to recover prior payments, and up-front payments without ex-post settlements provide no incentives. Managers, on the other hand, do not want their compensation withheld for extended periods after

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