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Team Compensation

If variable pay is the buzzword of personnel, the mere mention of teams and team compensation can make a human resources manager quiver with emotion. In large part the interest in team compensation has been generated by the success of the Japanese who seem to use team production to a greater extent than firms throughout Europe and the United States. Further the academic industrial psychologists and sociologists who study these issues have jumped on the bandwagon. Many argue that group incentives can be a more effective motivator under certain circumstances than can individual incentive schemes. Most of the discussion on these points has been loose, and the somewhat unspecific nature of the argument has led to more confusion than clarity.

Free-Rider Problems and Compensation Method

Kandel and Lazear (1992) attempt to examine the role of team incentives in a more rigorous fashion. It is difficult to understand why team compensation can be an effective motivator in anything but a very small team. For example, Japanese firms, where profit sharing supposedly counts for a large component of compensation, have an extremely large number of workers. An additional dollar of output, when divided among the many workers in the organization, contributes only a trivial amount to any individual worker's compensation. Furthermore the output of any small group contributes only a trivial amount to the compensation of members of that group. Thus there is no clear reason why one team should not simply shirk and free ride on all the other teams in the organization.¹

Incentives are probably not at the heart of compensation in a Japanese organization, although there may be some incentive considerations at work. An alternative interpretation is that the profit sharing is simply a way to distribute risk to Japanese workers who do not hold a large amount

of private securities. If Japanese workers are essentially equity holders in their organizations through their wages, and if their organizations invest and hold securities in other corporations within the economy, then the firm acts as a financial intermediary to perform a financial market-smoothing process. Rather than taking pecuniary compensation from the organizations and then investing privately in financial markets, workers simply forgo wages. Their firms then use the revenues generated by these forgone earnings and invest them in the securities of other organizations. The returns and dividends from those securities accrue to the workers' firm and are passed along later in life in the form of higher wages. To the extent that the wages Japanese workers receive are contingent upon the overall profitability of the firm (which depends on the returns to other corporations' stock), workers are implicit equity holders in the firm.²

Still, many observers believe that the attitudes and work ethic of organizations where profit sharing is important are very different from the attitudes and work ethic in firms whose compensation is strictly wage and salary, without any significant profit-sharing component. Kandel and Lazear (1992) distinguish between shame and guilt, terms used by sociologists to describe individuals in relation to their peers and societies at large. Sociologists have used the terms shame and guilt to contrast societies that are motivated by internal pressure with those that are motivated by external pressure. Shame-based societies are those where peer pressure comes directly from others as a response to some action that works to the detriment of the group as a whole. In guilt-based societies, individuals are motivated to do well not so much by the direct pressure of their peers but by feelings internalized toward their comrades. Thus in a guilt-oriented society the worker is reluctant to shirk because doing so brings on bad feelings about what he is doing to others. Our interpretation is that sociologists use shame to denote peer pressure when output or effort is observable. Guilt, on the other hand, works even when neither effort nor individual output can be observed, since guilt is internalized. Thus organizations may try to instill guilt in their workers, euphemistically called loyalty, in their attempt to encourage performance in environments where others cannot observe the shirking.

A classic example comes from the military. Soldiers are run through an extensive boot camp training program that makes soldiers loyal to one another and creates, in their consciences, an awareness of a common enemy. Much of the training acquired during boot camp is useless to the typical soldier, who may end up being a supply clerk stationed in North Carolina. Still the military spends a great deal of time and money on

building bonds between soldiers so that these bonds may later be an effective motivator in rare circumstances that have extreme importance. For example, a soldier out on a scouting mission alone is in great danger. It would be rational to lie low, hide, and stay out of trouble. Instead, scouts often undertake significant risk in order to protect their platoon mates. They feel loyalty to their fellow soldiers, which causes them to take actions that would otherwise not be in their self interest. Letting their peers down would instill guilt, which is a useful motivator in this situation where their actions are not easily monitored.

A necessary ingredient is some sort of profit sharing. If workers do not share in the profits of the enterprise but rather are paid a straight salary, then shirking by one worker in no way affects the utility of his peers. When workers are not residual claimants, loyalty to other workers will not motivate an individual to put forth additional effort. In the case of the military example above, soldiers are "profit sharers." Actions by one soldier have direct implications for the happiness of other soldiers. Similarly peer pressure, the effectiveness of guilt, shame, and other forms of implicit motivation are tied directly to profit sharing. Thus organizations that invest heavily in creating bonds between workers are those that also should have a high degree of profit sharing.

The point is less obvious than it seems, however. When a worker shirks, he necessarily affects someone else's utility. In the case where workers are paid a straight salary, capital is adversely affected by workers' shirking. When workers are profit sharers, then other workers as well as capital owners are affected. But it is not obvious that workers should care more about harming other workers than they do about harming capital owners. To make the case that profit sharing has incentive effects, it is necessary to argue that workers empathize more with their fellow workers than they do with faceless shareholders. Such arguments are not implausible, but they are a necessary component of any case to be made for profit sharing within an organization. If workers empathize with nonlabor capital owners as much as they do with other workers, then there will be no gains to using a profit-sharing scheme. The free-rider effect is simply too significant to imply much motivation on the basis of individual compensation. It is only when others are affected, and those others are individuals about whom the specific worker cares, that profit sharing can act as a motivating force.

The notions of loyalty, guilt, and shame can be parameterized and dealt with rigorously in a theoretical framework. Doing so assists in the understanding of what the sociologists term "norm." Norms can be thought of

more rigorously as the equilibrium level of effort that results when an organization punishes deviance. The larger the punishment for deviating from the norm, the higher will be the equilibrium level established as the norm in the firm. Personnel managers who understand how norms are established can then implement higher levels of effort as the norm level simply by creating larger punishments for falling short of the norm.

For example, let the worker's utility function be given by

$$u = \frac{Q}{N} - c(e) - \lambda(\bar{e} - e),$$

where Q is total output of the firm, e is the individual's effort, $c(e)$ is the pain associated with effort, and \bar{e} is the average effort level of the worker's peers. The last term, parameterized by λ (and independent of N), reflects guilt or shame.

The first-order condition is

$$\frac{\partial Q / \partial e}{N} + \lambda = c'(e).$$

Since $c'(e)$ is increasing in effort, the larger the λ , the larger is the chosen level of effort. In the simplest case, where all workers are identical, $\bar{e} = e$ and is determined by the foc above. Further the higher the λ , the higher will be the "norm" level of effort in the firm. Thus establishing a higher norm level of effort requires that the penalty, associated with negative deviations from the norm, rise.

The work by Kandel and myself contrasts somewhat with the earlier work by Holmstrom (1982). Holmstrom focuses on work sharing as a way to motivate workers. He analyzes the so-called Stalin schemes, which assign a task to a team of workers and then punish all members for failure to complete the task. In this environment, shirking must be made up for by another worker's increased effort. Peer pressure may be an effective way to induce workers to carry their own weight. But gang behavior and other bullying kinds of activities can prevent this scheme from being an effective one. A group of buddies may shirk. Others must make up for their reduced effort if the buddies cannot be forced by their peers to work. Additionally the focus of Holmstrom's work is on mechanisms that require a third party. Many problems involving profit sharing do not necessitate a third party. Indeed the essence of a partnership is that third parties are not included in the agreement. Partners must structure an incentive scheme that induces all individuals to work in the absence of an outside enforcer.

Some empirical evidence on the importance of profit sharing and partnership in professional practices is provided by Gilson and Mnookin (1985), who explore compensation and profit sharing in law firms. They find that compensation is not the same across partners but that compensation differs to a lesser extent than contribution to the firm as measured by observables. "Rainmakers" do earn higher salaries than other attorneys in the firm, but their reward is in no way proportional to the amount of business they generate. In part, this can be explained by complementarities within the firm. Rainmakers can generate business only to the extent that other attorneys are producing high-quality output, so attributing all the business to the individual who actually brings it in is probably inappropriate. Still, rationalizations of this sort can only go part of the way toward explaining the wage compression. Thus profit sharing is a significant part of compensation in law firms.

Gaynor and Pauly (1990) examined incentives in medical practices. They argue that incentives are diluted and find that productivity is reduced as the size of the medical practice increases. Whether these differences reflect selection or moral hazard is, of course, difficult to ascertain, but the findings do conform with the theory. Also Benelli, Loderer, and Lys (1987) examine data from large corporations and find that explicit worker participation in firm decisions has little, if any, effect on corporate operations and performance. Similar findings were obtained by Katz, Keefe, and Kochan (1987), who examined productivity among General Motors plants. They found that in those plants where "new industrial relations" practices were used, output was not higher, and in some instances was lower, than output in traditionally run firms. Selection problems are paramount, but the data on profit sharing and worker participation do not give overwhelming support to the view that worker cooperation has dramatic effects on productivity.

In a somewhat different vein Farrell and Scotchmer (1988) have examined partnerships and obtain a result that appears in a somewhat different context in the literature on worker-run firms. An equal-sharing rule inefficiently limits the size of partnerships because workers care about average product rather than marginal product in an organization. If workers were free to sell the rights to their jobs, however, this result would vanish. Adding positions to the firm is always profitable when the additional positions bring about efficiency. As long as the initial partners could capture the returns to selling those additional positions, partnerships would behave in the same way as a competitive firm.