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BODY:

Summary

Companies are increasingly adopting incentive schemes to encourage their employees to be more productive and efficient. However, the popularity of such schemes does not guarantee their effectiveness, says Canice **Prendergast.** Incentive contracting for example can cause employees to carry out actions that are beneficial to them but harmful to company interests. There is also a real danger workers will focus too much on certain aspects of a contract to the detriment of all the other things they should be doing.

Traditionally, employees were paid by fixed salaries, and were only rewarded for improved performance when they were promoted or when salaries were revised at the end of the year. Yet in the past two decades there has been a huge change in compensation schemes, and more and more employees now see their pay vary with reference to some measure of individual or company performance.

Companies have tried all sorts of methods for providing incentives, such as piece rates, commissions, stock options, bonuses, stock grants, profit-sharing, team bonuses, deferred compensation and so on. The growing interest in such pay-for-performance plans has come from the realisation that often the interests of employee and employer are not aligned, and that sometimes contracts can be designed to induce employees to work more closely in the company's interest. In essence, people work harder (or better) when their pay is affected by their actions. To take a simple example, a salesman who is paid on commission will be likely to work harder than one who receives a straight salary, as his pay is more directly related to performance.

Many people are sceptical of this assumption, particularly outside the US, and instead believe that most employees are guided by "an honest day's work for an honest day's pay". However, one of the more surprising conclusions of research on incentives over the past decade has been that employees in many walks of life are quick to respond to measures that they can control. Many of these studies arise from changes in compensation in US companies. A well-publicised recent example involved a US company called Safelite, which installs car windscreens. When its managers switched compensation from fixed salaries to piece rates, productivity rose by approximately 35 per cent in the space of 18 months.

Yet there is similar evidence throughout the world. Jockeys in the UK are typically rewarded in one of two ways: either they receive a retainer with little or no prize for winning a race, or they receive a prize for winning, typically 20 per cent of the prize money. Recent research illustrates that those jockeys who are on the 20 per cent commission significantly outperform those who are on retainers. Similarly, golfers on the European Tour achieve better scores when their prize money depends more on their finishing position. Perhaps the most convincing case for linking pay with performance comes from China in the 1970s. Deng Xiaoping allowed Chinese farmers to keep a fraction of the output that they produced and to sell it at market prices. Recent evidence suggests that 75 per cent of the enormous increase in Chinese agricultural output during the 1980s is attributable to that change in compensation practice.

These examples are representative of a host of work illustrating how people generally respond when they are paid to do something they would otherwise not enjoy. These studies point to the benefit of offering pay for performance: people work harder, at least on the dimensions on which they are paid. This has provoked many commentators to emphasise the benefits of tying pay more closely to measures such as company profits, performance ratings, customer satisfaction surveys, and so on. Many of these commentators feel that productivity can be significantly increased by making employees more accountable for their actions.

There is little doubt that the productivity responses to incentive contracts in the examples above are impressive and point to potential benefits that can arise from pay for performance.

Yet one should be careful about this conclusion, despite the evidence marshalled above. One warning signal is the fact that most employees do not have contracts that relate pay to performance. In other words, most employees still get straight salaries, with the best estimates suggesting that only about 20 to 25 per cent of employees have some form of incentive pay.

In my view, this is not because companies have not thought about it or are behind the times. Instead it suggests that they have reasonably decided that the benefits outlined above are outweighed by a variety of costs that make incentive pay less than desirable.

When incentives fail

Job complexity

There are three important drawbacks to pay-for-performance plans. First, incentive contracting can cause employees to carry out actions that are beneficial to them but harmful to their company's interests. The jobs that many people carry out are complex, and contracts typically cannot completely specify all relevant aspects of worker behaviour. As a result, contracts offering incentives can give rise to dysfunctional responses, where agents emphasise only those aspects of performance that are rewarded. For example, a professional basketball player in the US, Tim Hardaway, was given a contract last year which offered him an Dollars 850,000 bonus based on the number of "assists" he made (an assist is where a player passes to a team-mate who then scores). Hardaway realised towards the end of the season that there was a chance that he would not make enough assists to get his bonus. He admitted to not taking legitimate shots but instead passing to other players to increase his chance of the bonus. In other words, he changed his behaviour in response to the incentive contract in ways beneficial to himself but harmful to the team. For other such examples, see the box above.

In the examples given, employees carry out complex jobs in the sense that they can change their behaviour along many dimensions when offered an incentive contract. This problem, referred to in economics literature as "multi-tasking", suggests that in many occupations the last thing that an employer should consider is an incentive pay scheme based on some subset of the activities carried out by the worker.

Specifically, it is worth bearing in mind that in the examples in which performance pay worked (jockeys, Chinese farmers and windscreen installers), it is easy to identify a measure that represents the performance of the worker. Thus, winning a race is a good measure for a jockey, output is a good measure for a farmer and so on. Having a good overall measure of performance is critical to implementing efficient pay-for-performance schemes. Yet in truth, most employees do not have jobs like this and most measures of performance are an inadequate representation of the employee's contribution. When pay-for-performance contracts are offered to employees, there is a real danger that they will focus too much on certain aspects of the contract to the detriment of all the other things that they should be doing.

Costs exceed benefits

The second problem with incentive pay is that it causes compensation costs to rise, which must be compared to the increases in productivity. In many cases, the increase in pay may exceed any productivity gains. This issue has become especially contentious in the literature on executive pay.

Executives are typically offered contracts in which their pay varies with the performance of their company, through the ownership of stocks and options. Some experts believe that these contracts are a necessary means of providing executives with incentives, although truthfully there is little convincing evidence one way or the other. Others feel that this system of incentive pay is doing little more than handing over shareholders' money to an executive. Yet the costs of such plans are not limited to executives, and many companies in the US and Europe now offer employees contracts that include options.

Identifying whether these contracts are efficient is extremely difficult. Recent work in economics illustrates that employees should indeed receive additional compensation on incentive contracts, both because their jobs are likely to be more arduous and because the contract imposes more risk on them. (From the studies that have been collected so far on incentive contracting, a reasonable estimate for the effect on total compensation of the successful cases of incentive pay described above is that it will increase by about one-third to a half of the value of increased productivity.) Many companies now offer options to all workers in the company - worth perhaps three years' worth of salary. These are attractive to companies because they may provide incentives for employees to improve the stock price.

Yet they have one very unattractive feature, namely that when the stock market in general increases, everyone who holds options may make large sums of money for doing nothing. In other words, companies are handing money over to employees for reasons that have nothing to do with their performance. Thus, while the companies may believe that options provide incentives, the evidence over the past decade or so would suggest that this has come at an enormous cost. Do these companies truly believe that the effects of options on incentives are worth the equivalent of three years' salary? I have my doubts.

Contracts of this form also violate one of the fundamental principles of effective incentive contracting. Any effective pay-for-performance plan should make compensation depend only on things that the employee can control. If the worker has no control over some particular measure, what is the point of making his pay vary with reference to it? This may seem like an obvious point, but in fact it is violated in many incentive contracts, notably the option contracts just described. A huge increase in the stock market - such as we have seen over the past decade - increases the value of options for reasons that have nothing to do with the actions of the workforce. And why should workers and executives benefit just because the stock market has increased?

A revision of contracts could overcome this problem. Instead of offering options where the exercise price depends on the stock price of the company, the company could index the option contracts to how well the stock market is doing. Here the exercise price of the option could depend on the company's performance relative to the market (or some competitor's performance). The payouts then depend not on the stock price of the company (as options currently do) but instead on how the company does relative to the stock market in general. This would considerably reduce the costs of incentive contracting.

Individual vs team compensation

The final problem with incentive pay schemes is that it is difficult to find a good measure on which to base the compensation. For instance, should one use an individual measure of performance or something more aggregate, such as a team bonus or a company profit-sharing scheme? Companies often prefer more aggregate schemes because many employees are employed in settings where output is not the result of the inputs of a single individual, but rather derives from the joint contributions of many individuals.

This logic has resulted in huge increase in the use of company-wide profit-sharing pay schemes, where at the end of the financial year employees' share in the profitability of the company either through wages or pensions.

This type of scheme has one significant problem, namely that it tends to encourage "free-riding". Suppose that I work for General Motors along with a million other people, and am part of a profit-sharing scheme. Any increased effort on my part is going to be shared with all the other employees, so from a rational perspective why should I work harder? For example, if I come up with an idea that increases profits by Dollars 100,000, I get 10 cents. Rationally, I should shirk and free ride on the efforts of my fellow workers.

For this reason, there is considerable scepticism about the effectiveness of compensation schemes based on the outputs of many employees. In fact, there is clear evidence that in occupations where team-based compensation is prevalent, such as the legal and medical professions, individuals tend to work less hard when the benefits of their efforts are shared by many. For example, one study showed that when a medical practice used contracts whereby all doctors would share the revenues from all their patients, the doctors reduced the number of hours that they worked relative to doctors who retained more of their own revenues.

Despite this, company-wide profit-sharing schemes in large companies are growing in popularity. Why is this? A large part of the reason is that large companies that use them are about 4 to 5 per cent more productive and profitable than those that do not. It is natural to infer that profit-sharing plans increase productivity. However, while the statistic is true, it may not be true to say that profit sharing itself caused these companies to become more profitable.

Instead, the causality appears to go in the opposite direction: namely, only profitable companies use these schemes. Put simply, companies that are going broke do not use profit-sharing schemes, because they do not have any profits. This explains the better performance of companies with profit-sharing plans.

Unfortunately, the data have been misinterpreted to imply that profit sharing is good for companies' bottom lines. When these selection factors are taken care of, it appears (at least to my reading) that there is no evidence that introducing profit-sharing schemes in companies actually changes productivity. Such schemes increase pay, so employees are very content to participate, but there is little evidence that they cause people to work harder.

Misguided motives

There are many examples of dysfunctional responses by employees to incentive contracts.

* Salespeople are generally paid on end-of-year sales quotas. If they have reached their quota in November, they tend to stop selling in December, preferring to wait until the new year to make more sales. Their private interests conflict with the interests of their employer.

* At AT&T computer programmers were rewarded for the number of lines of code that they produced in their programs. Not surprisingly, programs became much longer than necessary.

* US teachers were offered incentive contracts that promised them bonuses if their students achieved good test scores. Two responses occurred. First, the teachers would only teach "for the test", ignoring all other kinds of teaching that the students required. Second, some teachers dissuaded the worst students from sitting the test (or in some cases even coming to class) so they would not count against their score. In one case, a teacher obtained a copy of the test beforehand and gave it to his students.

* Finally, consider the response of US surgeons to incentives. In New York, surgeons are penalised if their mortality rates exceed a threshold. Despite having taken the Hippocratic oath, some have been found to respond by refusing risky surgical cases as they approach that mortality threshold - hardly the response that hospital managers had in mind.

Conclusion

These observations illustrate some of the trade-offs that companies face with incentive pay. Paying employees on individual measures of performance generally causes them to exert more effort on those things for which they get paid. In some cases this is exactly what is needed, such as in the case of Safelite or Chinese agriculture. But having employees respond to incentive contracts is not necessarily a good thing - employees can focus too narrowly on the things for which they get rewarded and ignore everything else. Few would argue that a sick patient being refused treatment by a surgeon because she was too risky a case to take on (see "Misguided motives" above) is a beneficial response to the contracts offered to surgeons in New York.

In response to these and similar concerns, companies often prefer to make contracts depend on a more aggregate measure of performance, such as company-wide profits. But these have another drawback, namely that if the employee does not perceive that the measure is affected by his own performance, he will see little reason to exert that extra effort. It is hardly surprising that most employees are still simply paid salaries.

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