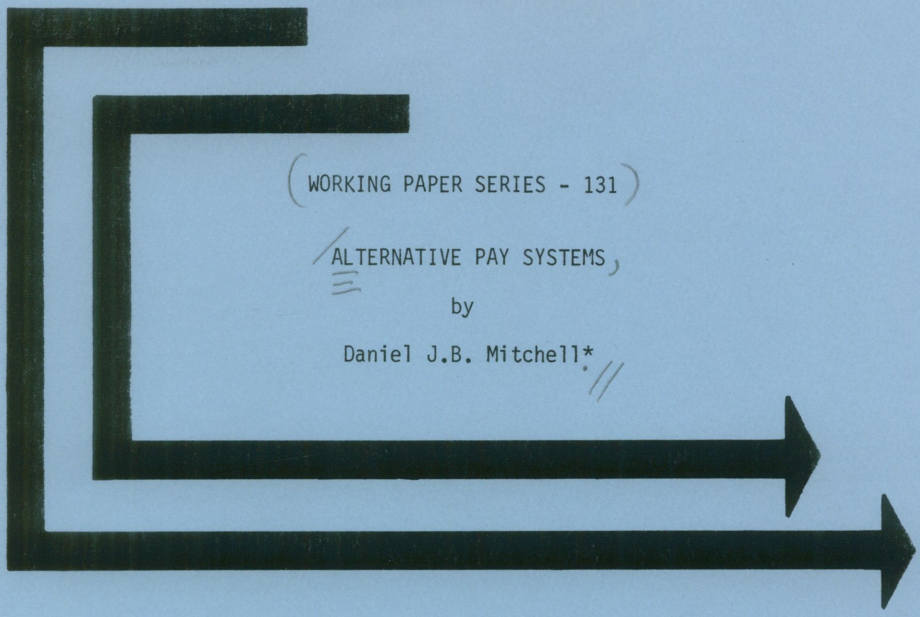

WORKING PAPER SERIES - 131

ALTERNATIVE PAY SYSTEMS

by

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CHAPTER 4:

Alternative Pay Systems

Draft chapter of "Human Resource Management: An Economic Approach"

Chapter 4: Alternative Pay Systems

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Chapter 4: Alternative Pay Systems

In the previous chapter the concept of pay for performance was discussed. It was noted that employers often use evaluation systems to measure employee contribution to firm output, and then reward superior employees with pay increases, bonuses, and other economic benefits. However, it turned out to be easier to endorse the general concept of pay for performance than to implement it.

Use of performance appraisals requires the employment of an appraiser, typically a supervisor. Not only is there a direct cost involved when an appraiser is employed, but there is also a potential for incorrect appraisals. The previous chapter noted that the incentives surrounding supervisors often tend to undermine accurate employee evaluations. Thus, use of a discretionary monitoring system involves costs of error as well as the direct expense of retaining the monitor.

Since monitoring/supervising is expensive, it has long been the goal of employers to develop a cheaper alternative. Sometimes the recruitment process can be used to seek an alternative. For example, employers can try to select candidates for employment who appear "self motivated" or who can "work without direction." But searching for such persons is itself expensive and, in any case, without monitoring, the employer will

not be able to tell if individuals who seemed self motivated in fact act that way once on the job.

One possibility, which was mentioned in the previous chapter, is to build incentives into the pay system so that employees will be rewarded automatically for desirable behavior. Much of the Scientific Management movement of the early part of this century involved the development of appropriate incentives. And even today, writers and consultants in the HRM field will sometimes make glowing (if uncritical) comments about what incentive pay can accomplish. Witness the following excerpt from a recent HRM text:

"There are no losers with incentive pay systems. The organization gains through cost reductions, increased productivity and improved employee attitudes. The long-run benefits are increased productivity and organizational survival. Eventually, depending upon the performance variables used in the incentive pay system, other results occur such as an increase in sales due to employees' ideas to improve the utility of a product or service.

"Customers also benefit from incentive pay systems through lower prices, better quality products and services, and improved product features. The lower prices result from productivity and efficiency improvements...

"Stockholders also gain through incentive pay system by sharing in some of the productivity and efficiency increases. Stockholders benefit through increased dividends and an appreciation in the price of their stock... Citizens or taxpayers gain in public organizations through an improvement in service and lower taxes and fees."[1]

The difficulty with such views is not that they are necessarily wrong; quite the contrary. Incentive pay systems can

be useful in some circumstances. But incentives, like performance appraisals, have their pitfalls. They often do not turn out to be cheaper and more effective than conventional systems of pay.

I. The Basic Alternatives.

Generally, employees do not make formal contracts with their employers when they are initially hired. Even where employers are unionized, the written contract which is negotiated is between the union and the employer and not with the individual worker. However, the absence of a written contract does not mean that the employee/employer relationship is a simple one. In fact, when an employee is hired, a complex (although implicit) exchange is arranged.

i. The Derived Demand for Labor.

The employer's demand for labor is what economists call a "derived demand." That is, with the possible exception of certain personal service occupations (some of which are better left unnamed!), the employer does not directly "enjoy" the labor being hired. Rather, labor services which are purchased are a means to an end. Labor is an input to the production process and from the resulting production flows the employer's profits. Thus, what the employer wants is not the employee's mere presence

at the work site (although that is a prerequisite), but rather the employee's presence combined with productive activity.

It is not just worker time which is being bought but time and what can be generally described as "effort." Thus, when the employee accepts a job offer, he/she is implicitly agreeing to both the sacrifice of "leisure" time and a willingness to take direction and meet standards. Those who argue for incentive pay systems are basically proposing that since the employer is buying more than just time, the pay system should reflect more than time alone in providing rewards.

Apart from just output and productivity, employers may want "loyalty" from employees. Loyalty can be interpreted in various ways, e.g., not "bad mouthing" the company's products or services but instead boosting their reputation, not giving away trade secrets to competitors, etc. However, also included under the loyalty label is a commitment to <u>remain</u> with the company for some indefinite period.

Loyal employees reduce hiring and turnover costs for the firm. It is for this reason that employers are often reluctant to hire employees whose resumes are suggestive of "opportunistic" job hoppers. A job hopper may not remain with the firm long enough to permit a recoupment of the firm's investment in that employee.

ii. Time, Incentive, and Share Systems.

Given the employer objectives of obtaining a productive and loyal workforce, various compensation systems suggest themselves. First is the time-based system. Under such a system, workers are paid based on time on the job. However, as the previous chapter showed, time systems are often combined with subjective performance appraisals and related merit plans. Thus, workers are not literally being paid merely to make an appearance.

A second option is an explicit incentive system. Under incentive plans, pay (or a portion of pay) is automatically tied to the achievement of some tangible objective such as a level of production by the individual employee. In cases where the employee is part of a work team, the incentive payment may be linked to group achievement rather than individual performance.

Finally, there is a third category of "share" systems. Under these plans, the employee benefits from the overall performance of the establishment or enterprise. Since the individual's contribution to the overall establishment or enterprise is likely to be small, such share arrangements are often viewed by HRM specialists as loyalty generators rather than as direct productivity incentives.

iii. Empirical Evidence: Time vs. Incentive Systems.

Table 1 shows the incidence of time and incentive pay systems for various occupational groups, based on a survey of private and public employers. It is apparent from the table that incentive systems are not the norm. To the contrary, only two groups give evidence of any significant coverage by incentive plans: plant/service occupations and sales occupations. Even among these two classifications, however, only a small minority of the employers surveyed reported using either individual or group incentive systems.

It is not surprising that plant/service and sales workers should be more likely to be covered by incentive plans than other employees. In both cases, a measure of output is commonly available which is subject to measurement and verification. Plant/service workers often are employed in manufacturing establishments which produce tangible, countable outputs. (Within manufacturing, 18% of employers responding reported that they had individual incentives covering plant/service workers; 8% reported group incentives).

For sales workers, there is an additional reason for use of incentives. Often sales workers are employed in situations where

Table 1

Percentage of Employers Reporting Alternative Time and Incentive Pay Systems, 1980

	Plant/ service	Office/ Clerical	Professional/ technical	Sales
Time systems:				
Hourly rate	86%	43%	16%	9%
Weekly rate	5	21	19	17
Monthly rate	8	30	40	43
Annual rate	5	11	28	26
Incentive systems:				
Individual	11	-	*	7
Group	5	-	*	3

	First-level supervisors	Middle managers
Time systems:		
Hourly rate	11%	6%
Weekly rate	18	13
Monthly rate	36	40
Annual rate	34	39
Incentive systems:		
Individual	*	*
Group	*	2

*Less than 1 percent.

Note: Percentages may sum to more than 100% due to multiple plans used by an employer for a particular occupational group.

Source: Bureau of National Affairs, Inc., Wage & Salary Administration, PPF survey no. 131 (Washington: BNA, 1981), p. 6.

close supervision simply is not possible. Sales personnel who operate away from their offices are obvious examples. But also those sales worker who wait on customers often fall into this category. If supervision is not a feasible option, commission sales arrangements can be used as a substitute.

Unfortunately, surveys regarding incentive and other pay systems are sporadic and often cover unrepresentative samples. A study conducted by the Conference Board at about the same time as the survey of Table 1 was taken suggested that 36% of manufacturing firms had wage incentive and bonus plans covering "production or operations" workers.[2] This level suggests a more extensive use of incentives than Table 1. There is no way to reconcile the conflicting evidence. The neglect of employer pay systems and other HRM practices constitutes an important hole in official government surveys of the labor market. However, all recent surveys suggest incentives are not used for determining pay of the vast majority of employees.

Studies based on employer responses to questionnaires--such as those just cited -- often fail to indicate the proportion of workers covered by particular HRM practices in the workplace. Instead, they report the number of employers who have examples of the practices, even though in some cases relatively few employees within the reporting firm may be affected. An exception was a 1970 study by the U.S. Bureau of Labor Statistics (BLS) which

found that only 14% of urban "plantworkers" in medium to large sized firms were covered by incentive systems (20% in manufacturing). Virtually no office workers were found to have incentive arrangements.[3]

Perhaps most revealing about the 1970 BLS survey was its finding that use of incentives declined during the 1960s. A subsequent BLS study relating only to manufacturing industries indicated that use of incentives continued to decline in the 1970s.[4] This downward trend appears to be part of a long term process. In the 1920s, use of incentives was extremely widespread, reflecting both the popularity of scientific management and employer disdain for alternative motivational devices. Thereafter, however, time-based pay systems became much more common.

iv. A Union Influence?

One factor sometimes cited for the decline in the popularity of incentives after the 1920s was the subsequent rise of unions. Many unions, but not all, opposed incentive plans in the past. However, despite this history, it is not clear that contemporary unions inherently oppose incentive systems as a method of pay. In the mid 1980s, for example, one study of 400 union contracts found pay incentives included in almost a third of them, with the ratio rising to 47% in manufacturing.[5]

In theory, if unions are successful in capturing some of the returns that would otherwise go to profits, they could be expected to take a pragmatic view of incentives. For example, they would favor pay incentives in cases when such incentives were more efficient than other arrangements, assuming that some of the efficiency gains could be "captured" by their members. However, the fact that use of incentives has varied substantially over time suggests that opinions about such efficiency are often subjective and are prone to "fads." Given this history, union officials may sometimes be suspicious of management claims on behalf of incentives.

If workers are risk averse, unions might oppose those incentives which appeared likely to create income variability for their members. There was a push by unions in the 1940s and 1950s for a "guaranteed annual wage" (discussed below in this chapter) which may still be associated with a union distaste for incentives in some instances. Unions might also oppose those incentive programs which made it more difficult for them to exercise group control over the pace of work. The pace of work is a condition of employment, and unions can normally be expected to wish to influence <u>all</u> such conditions, not just pay.

v. The HRM Influence.

Apart from their actual policies regarding incentives, unions probably had an indirect effect of encouraging voices within management who favored the time-based alternative to incentive pay. As unions grew in strength in the 1930s, management responded by strengthening the HRM function inside the firm. HRM specialists could be expected to support pay systems which require discretion rather than formulas. Formula systems leave authority in the hands of industrial engineers who set the accompanying production norms. Discretionary systems, in contrast, strengthen the HRM function's importance within the firm, since they require the employment of experts with knowledge of evaluation and motivation techniques. In short, there was an incentive for HRM professionals not to be keen on incentives!

By the 1980s, however, the HRM function was more firmly ensconced in the typical enterprise than in the 1930s. There was pressure to respond to competitive pressures through productivity enhancing devices. Moreover, the computer revolution brought with it an improved data handling capacity and an orientation toward quantitative studies to determine the best HRM techniques. These developments could and should lead to a revived interest in incentive arrangements. Demonstrated effectiveness of incentives relative to time-based pay systems, rather than preconceptions, should be the determining factor in their adoption, retention, or

rejection. The use or non-use of an incentive pay system should be a pragmatically determined, empirical matter.

II. Time-Based Systems.

Table 1 shows that one of the options to be selected under a time-based system is the unit of time on which pay is based. Hourly rates tend to be most commonly used in the plant/service occupational group. White collar workers are more likely to be paid on the basis of a longer unit of time such as a week, month, or year. Generally, the further the job hierarchy ladder is ascended, the longer is the unit of time on which pay is based.

The data of Table 1 were reinforced by a 1984 survey by the U.S. Bureau of Labor Statistics (BLS) which found that about one fourth of professionals and less than one fifth of managers were paid on an hourly basis. But for workers in blue collar occupations, hourly rates characterized 75-90% of the workforce. All told, about 6 out of 10 wage and salary earners were found to be paid on an hourly basis.[6]

i. Time Units and Employment Stability.

It might initially appear that the varying practices regarding time units are inconsequential. After all, hourly rates can always be expressed in weekly, monthly, or annual terms

by simply multiplying by some appropriate number of "normal" hours. And annual, monthly, or weekly salaries can be similarly expressed in hourly equivalents. However, the time specification indicates a component of the implicit employment contract, as evidenced by the distinction HRM professionals often make between their policies for hourly workers and their policies for others. The hourly choice is not simply a matter of arbitrary arithmetic.

Typically, those whose pay is based on short time units--particularly hours -- are more subject to employment instability and layoffs than those whose pay is based on longer time units. The demand for their services is seen as closely linked to production levels which may vary, even within a weekly period. If production falls, whether due to recession, bad weather, or mechanical breakdown, hourly workers are the most likely to be laid off. They may be told not to report for work for the remainder of a week. Or they may be told not to report at all unless and until further advised.

Such indefinite layoffs do not necessarily mean that the employer/employee relationship ends. Many firms have systems of recall from layoff so that when production picks up, laid off workers are rehired. However, except for a relatively small number of union-represented workers who receive "supplemental unemployment benefits" from their employers while awaiting

recall, laid off workers cease being paid and suffer a significant drop in income.[7]

Table 2 provides insights into the relative employment stability of different occupational groups. The first two columns show trends in employment over two recession periods: 1973-75 and 1979-82. In both cases, employment fell only for the blue collar and service occupational groups, the groups most likely to be paid on an hourly basis.

Unemployment rates provide still another measure of potential job instability. We will return to the issue of unemployment in a later chapter. However, at this point we can simply define unemployed workers are those who are seeking work, but cannot find a job, or who are on layoff status awaiting recall. The unemployment rate is simply U/(E+U) where U = the number of unemployed and E = the number of employed workers. As Table 2 shows, the blue collar and service groups consistently show above average unemployment rates, not only at years at the bottom of a recession (such as 1982), but also in years of recovery and economic growth (such as 1986).

Ideally, the best measure of employment stability would be the probability that an employed worker in a particular occupational classification would lose his or her job in a given year. Data are not published which precisely indicate those

Table 2

Some Measures of Employment Stability by Occupational Group

Occupational Group	Percent Change in Employment During Recession Periods		Civilian Unemployment Rates		Proportion Experiencing Some Unemployment[1]
	1973-75	1979-82	1982	1986	1984
Managerial/ professional occupations	+6.6%	+8.8%	3.3%	2.4%	6.8%
Technical, sales, administrative support	+6.9	+4.1	6.1	4.7	11.8
Service occupations	+5.2	+4.4	10.8	8.6	18.1
Precision production, craft and repair	-2.6	-6.5	10.6	7.2	21.2
Operators, fabricators, and laborers	-8.4	-12.1	16.7	10.9	26.0
Total[2]	+.9	+.7	9.7	7.0	15.3

[1]Individuals are assigned to occupational groups by occupation of the longest job they held in 1984.

[2]Includes farming, forestry, and fishery workers not shown separately.

Source: Employment and Earnings, vol. 31 (January 1984), pp. 14, 167; Employment and Earnings, vol. 34 (January 1987), p. 168; Shirley J. Smith, "Work Experience Profile, 1984: The Effects of Recovery Continue," Monthly Labor Review, vol. 109 (February 1986), p. 42.

probabilities. However, the right hand column of Table 2 presents an approximation.

The column shows the proportion of workers who had a job at some time in 1984, but who also experienced one or more spells of unemployment during that year. For managers and professionals, the proportions with some unemployment fell in the 6-12% range, while for the blue collar and service groups the range was 18-26%. These data again suggest a positive association between hourly pay status and likelihood of job loss.

ii. Varying Hourly Pay Rates.

There is no necessity that workers who are paid on an hourly basis receive the same rate of pay for each hour worked. In fact, it is a standard practice to pay higher rates of pay for "overtime" hours than for regular hours. This practice is required by the federal Fair Labor Standards Act (FLSA) which requires "time and a half," e.g., a 50% premium, for weekly hours exceeding forty for "nonexempt" workers.[8] (Nonexempt workers in HRM terminology are those subject to the FLSA; "exempt" employees are generally higher paid professionals and managers as defined in the law to whom overtime requirements do not apply). Similar regulations are found in state labor codes.

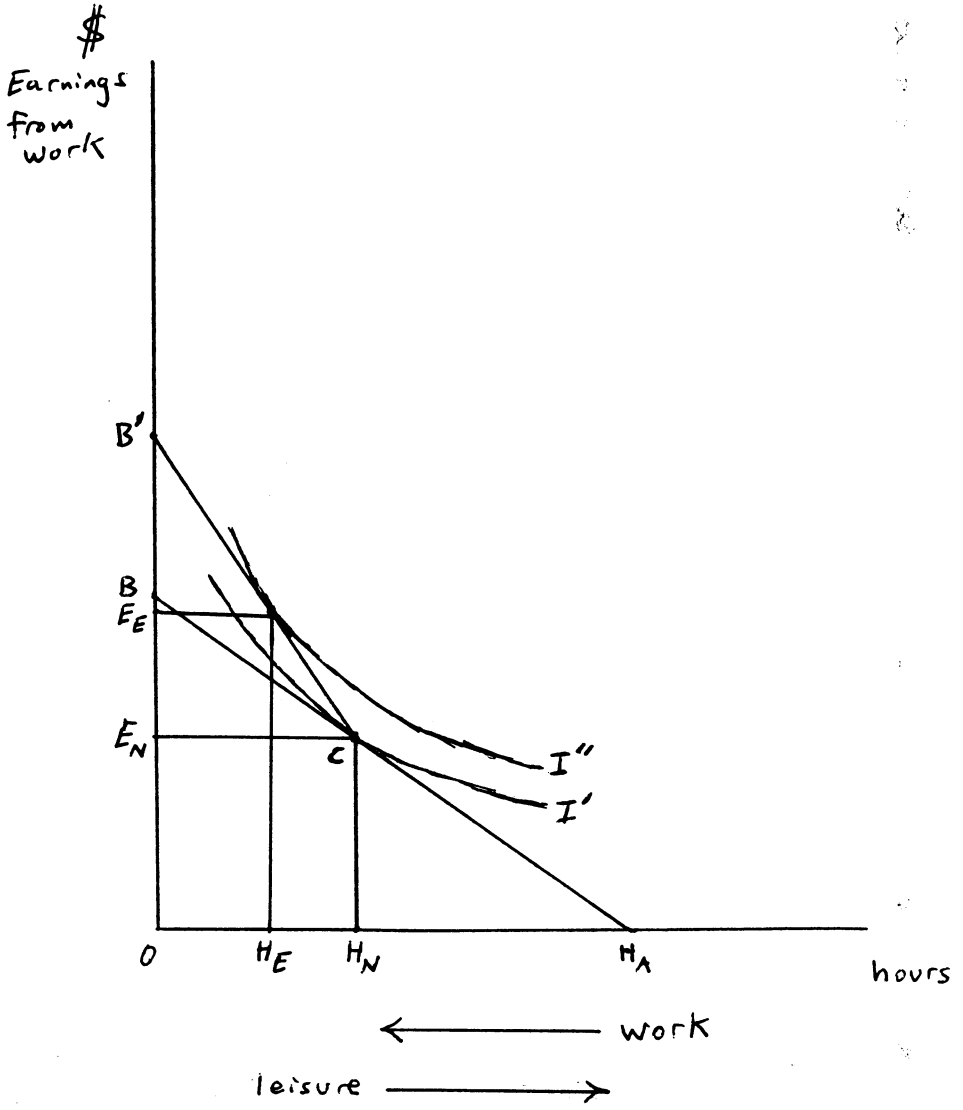
Although the 50% overtime premium has a basis in law, it is likely that some overtime differentials would be paid even if the law were not in place, especially to hourly-paid workers. The overtime features of the FLSA were originally passed in 1938 as an anti-depression measure designed to encourage employers to hire more workers rather than use overtime. Yet we know from early surveys that in the 1920s overtime premiums were offered to employees (although typically after longer "regular" workweeks than the 40 hour standard found in the FLSA).

Figure 1 provides an economic rationale for the use of an overtime pay premium. Consider a worker who has H_A hours "available" in a given period (say, a week) which could be used for work or leisure. The worker must chose between leisure and work-related income.

If the hourly wage (W) is constant (the same for each hour worked), the worker will face a simple linear trade off between earnings and leisure. Each hour worked subtracts one hour from potential leisure time, but adds W to total earnings. Given a free choice, the worker would chose to work until the earnings-leisure trade off line BH_A reached his/her highest possible indifference curve.

Such a situation is shown at point C. The earnings-leisure trade off line is just tangent to indifference curve I'. Thus,

Figure 1



the worker is employed for H_A-H_N hours, has OH_N leisure, and receives total earnings of E_N. Let us regard this configuration as reflecting a "normal" work time duration. If the employer wishes to purchase more hours from the worker, a pay premium for "extra" hours could be offered. The extra or overtime hours could be paid at a rate W(1+X), where X is the premium pay as a proportion of W, e.g., .5.

With the premium, the earnings-leisure trade off line now is represented by $B'CH_A$. The worker would now maximize utility at point C', where the new earnings-leisure trade off line is just tangent to indifference curve I". An extra H_N-H_E would be worked, raising the worker's total earnings to E_E.

Workers are generally not free to pick and choose their "normal" hours at a given employer. Unexcused absence is grounds for discipline. The proportion of working time lost to absences is typically small, about 3-4% among full time workers, and about two thirds of such absences are related to illness and injury.[9] Thus, employees have limited hours discretion once hired.

But workers do have some choice in seeking full time or part time work. Those who take positions as temporaries can vary their hours to suit personal preferences and family responsibilities.[10] For workers seeking longer hours (and added income), "moonlighting" -- that is, holding more than one job--

is an option. About 5% of all employees are moonlighters and their median weekly hours substantially exceed those of single job holders.[11] Thus, through choice of the kinds of jobs they accept, workers can influence their hours, although -- of course -- workers are not always able to find the job of their choice.

The issue of hours at work will be discussed in a later chapter. Nevertheless, at this point it can simply be noted that practices vary with regard to employee discretion concerning overtime or other "irregular" hours. In some firms, irregular hours are assigned; in others employment during such hours is voluntary.

The degree to which production is a team activity is important in explaining the limits placed by employers on employee choice of hours. However, given that working especially long hours, or weekend hours, or holiday hours is often more distasteful to employees than working regular hours, it is not surprising that pay premiums are often offered. In effect, the employment contract states to the employee that while there may be involuntary assignments of hours, an attempt will be made to offer some compensation for the possible unpleasantness involved.

III. Incentive Pay Systems.

As noted, incentive pay systems cover only a relatively small portion of the workforce. Yet such systems seem to be paying for performance directly. Why is it that automatic pay for performance (as opposed to discretionary pay for performance under merit plans) is used infrequently? Why did the popularity of incentive pay decline?

Although difficulties in measuring the output of an increasingly white collar workforce play an obvious role in answering these questions, they do not provide the whole explanation. Finding the right incentive plan -- one which creates just the incentives the employer wants to engender -- can be a complex matter. Maintaining the incentives at the correct setting once they are installed also poses problems.

i. Incentive Design.

Suppose you wanted to have a house built. You face the problem of making a contract with a builder which will meet your mutual objectives. The builder wants to make an adequate profit. You want to have the house built to your basic design at a "reasonable" cost. In a sense, both you and the builder have a common goal, i.e., working out a satisfactory agreement. But you are also adversaries, a situation found in any buyer-seller

relationship (including the employment relationship). "More" for one party probably means "less" for the other.

One possibility would be for you to agree to an arrangement to pay the builder on the basis of time and materials. The builder would bill you for all materials used and for all worktime expended. Another option would be for you to agree before the job begins on a fixed price for the entire project. Which option is better from your perspective?

Faced with these two options, many customers would chose the latter. They may fear that simply paying for time and materials leaves them open to contractual abuse. The builder might work excessively slowly and wastefully, running up large bills. At least with the latter option, they will know the cost of construction in advance.[12]

But, of course, the builder might prefer the option of having the customer pay for time and materials. This approach would mitigate the risk of having to absorb unexpected cost increases, e.g., a sudden jump in the price of lumber or the cost of labor. And the matter is really not so simple from the customer perspective. If the builder has a fixed price, there may be an incentive to hold down costs by skimping on quality. In short, with a fixed price contract, you might end up with a

house at the agreed-upon price, but it might not be quite the quality of house you had in mind.

One solution would be for you to hire a "monitor" (an additional expense!) who would watch for quality deficiencies and insist they be corrected. You could offer to accept the builder's preferred option of "pay as you go," if the monitor were given authority to police quality standards. Of course, even supposing a satisfactory monitor could be found, some definition of quality would need to be established and agreed upon in the contract with the builder. And even with a definition, there could still be a disagreement between the monitor and one of the parties to the transaction over whether quality standards were adequately met.

Apart from the quality issue, there are other contingency problems to be considered. For example, suppose bad weather were to delay the project, or to cause damage to the partially completed structure. Who would shoulder the resulting expense? With a time/materials contract, the customer would presumably absorb the cost. With a fixed price contract, the builder would bear the risk. But suppose that in the former case, weather damage was arguably due to negligence of the builder (who should have covered the structure with a tarpaulin in case of rain). Or what if, in the latter case, weather damage occurred because the customer had insisted on redesign of certain elements of the

house, delaying its completion until after the rainy season had begun.

Designing just the right contract that will perfectly satisfy you and your builder under all contingencies is difficult, if not impossible. Of course, commercial contracts are written in spite of these imperfections, often containing ambiguities and unresolved issues. As a result, contractual disputes are a regular feature of the market place. There are analogies between these disputes and the problems which arise with pay incentive systems in the workplace. And there are additional complications stemming from the ongoing nature of the employer/employee relationship.

ii. Quality and Contingency.

It was noted that in the house construction case, a contract guaranteeing a fixed price for completion of a project could create perverse incentives for the builder to skimp on quality. The same problem arises in the incentive pay case for employees. If the incentive payment is geared to the quantity produced, there will be a temptation for employees (built into the system) to increase quantity at the expense of quality.

Of course, it would be possible to try to include quality in the incentive formula. For example, the quantity payment could

be subject to some type of quality inspection. Only items passing a quality test would be included in the payment formula. But adding quality requires a costly monitoring process (as in the house construction example). There may be a subjective element in such a process, which could lead to friction. And even if quality can be precisely measured, questions of fault for quality deficiencies arise.

Failure to meet a standard of quality does not always result from improper or inadequate workmanship. If a batch of output fails a quality test, it could be due to inferior materials (provided by the employer) or mechanical breakdowns (on machines owned and maintained by the employer). Should employees be required to sacrifice income because of quality deficiencies in such cases? Or should the employer bear the burden? And who should determine whose fault the quality shortfall was?

Again, as in the house example, unforeseen contingencies can arise which upset the working of a pay formula. Suppose a power failure causes workers in a plant to be idle. Or suppose needed materials do not arrive at the plant due to bad weather, a strike at a supplier, or poor inventory control. What payments should workers receive if production stops for reasons beyond their control?

Of course, it is possible to spell out rules governing such contingencies, but it is unlikely that such rules will produce incomes exactly equal to what would have been received in the absence of a production disruption. Thus, further sources of friction arise. These frictions are really disagreements over what the employer/employee contract provides. The more potential frictions there are, the more supervisors and overhead personnel will be required to deal with them. As such overhead cost accumulates, the advantages of a pay incentive system over an ordinary time-based system erode.

iii. Incentives and the Ongoing Employment Relationship.

The house construction example essentially is a one-shot transaction. A contract -- even though imperfect -- is eventually drawn up to cover the building of a particular structure. The structure is built and once construction is completed, the buyer/seller relationship ends.

In the case of a workplace incentive system, however, there is an ongoing relationship between employer and employee. The indefinite duration of the employer/employee association means that the contract will have to be periodically updated. Changes in technology, in particular, pose dynamic problems for incentive systems. These problems arise because worker productivity is

likely to increase by reason of improved technology, even if employee effort levels remain constant.

Generally, as technology raises productivity, the rates of incentive pay per unit of output will have to be decreased. Each arrival of new equipment and each improvement in technique will require rate changes. Otherwise, pay rates per unit of production would become excessive. If, for example, new machinery raises output by 10%, a 10% reduction in the per-piece pay rate would be required to hold equivalent hourly pay constant. Thus, new norms will have to be established periodically and errors in judgment regarding norm setting may lead to worker over- or underpayments.

Workers will know that if they continually outperform the expected norms, standards probably will be increased. Thus, there will be incentives for workers to restrict output to levels which will not trigger re-evaluations of expected normal productivity. Incentives, in short, can easily become disincentives as employees respond to the rules of the game in rational economic fashion.

iv. Discontinuities in the Productivity/Pay Relationship.

Determining of norms of production is important in the design of incentive rates because simple piece rate formulas may

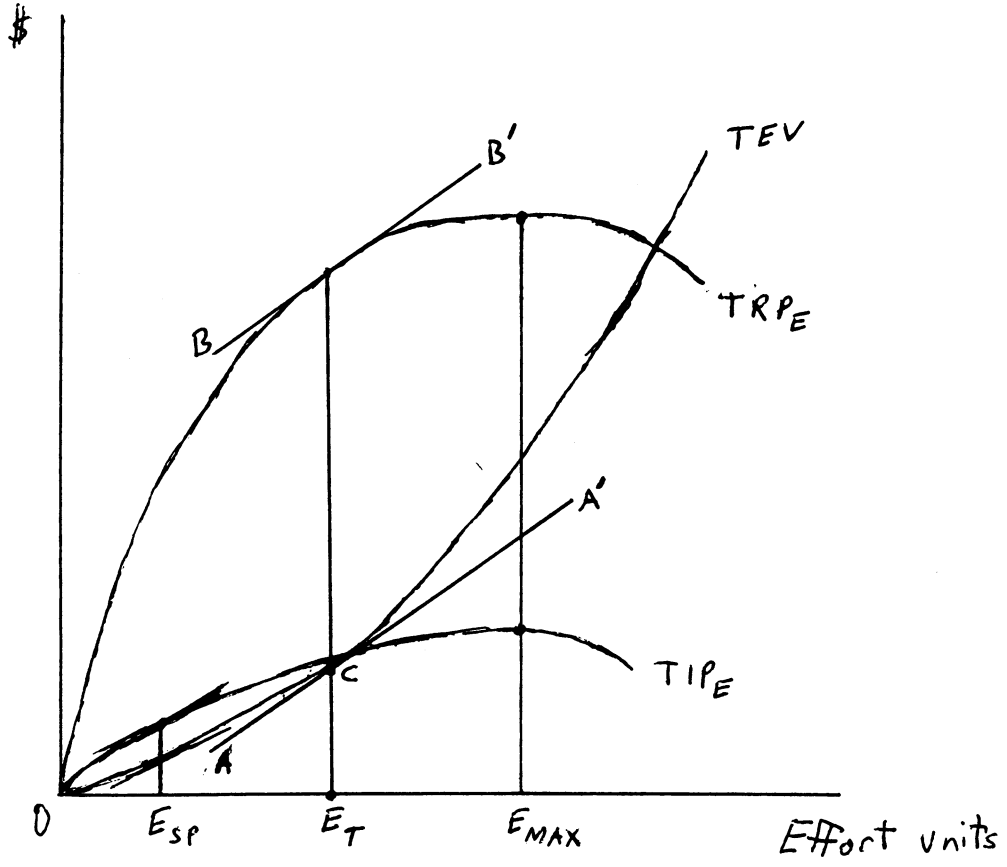
not provide the correct incentives for workers. As noted, a criticism of time-based systems is that the employer is really trying to buy a time/effort combination, but pays only for time. A similar problem exists with incentives; the employer is not directly paying for effort under a piece rate system, only an output proxy for effort.

It is commonly assumed that -- ignoring the dynamic problems discussed in the previous section -- installing a piece rate marries the employer's interest with the employee's. When a piece rate is in effect, both parties want more output, according to this view. However, Figure 2 shows that the appealing notion of creating mutual interests can be very misleading. A piece rate can separate the interests of employer and employee.

To understand this point, it is necessary to make some assumptions about the conditions of production. Assume that the employee can generally produce more widgets per period of time by expending more effort. However, diminishing returns to effort are likely to be present. Eventually, at exceedingly high effort levels, productivity may actually begin to decrease as exhaustion sets in.

Assume further that the widgets produced can be sold in the market place for a fixed price P. Then, in value terms, the relationship between individual employee effort per period can be

Figure 2



expressed by function TRP_E on Figure 2, the total revenue product of effort. This function shows the value of effort in the product market, i.e., the gross revenue received by the employer resulting from widget sales. The function has the form of an inverted U with a peak at effort level E_{MAX}, the point where exhaustion overwhelms additional output and productivity begins to fall.

Although increases in effort below the exhaustion point produce added revenue for the employer, the same increases result in disutility for the employee. Translated into value terms, this disutility is expressed by function TEV, the total effort value for the employee. TEV represents the total dollar value which must be paid to the employee to produce a willingness to work at a given effort level. The increasing disutility of effort is reflected in TEV's steepening slope as the effort level rises.

Suppose now that the employee and employer made a time-based bargain, but with an effort level also explicitly specified. Suppose further that effort could be costlessly monitored so that the bargain would be honestly kept. The effort level upon which both parties would agree in this time bargain would be E_T. E_T is optimal in a welfare economics sense, since the slopes of TEV and TRP_E are identical at that level of effort. That is, the marginal "cost" of effort to the worker is exactly equal to the

marginal value of effort to the employer. Graphically expressed, tangent BB' is exactly parallel to tangent AA'.

Of course, such effort bargains are difficult to enforce in the real world. Indeed, the enforcement problem is the justification usually presented for incentive rates. Incentive systems are supposed to induce appropriate employee effort without monitoring. So now suppose that the employer instead offers a simple piece rate (either X cents per widget or Y% of sales revenue) to the worker. Assume that this rate is set at a level which would -- at effort E_T -- produce exactly the same income for the worker that he/she would receive under the optimal contract just discussed. The total incentive payment for the worker, as a function of effort level, is shown by the TIP_E curve.

TIP_E has the same general shape as TRP_E (an inverted U), but is flatter, since the piece rate gives only a portion of the value of output to the worker. Although TIP_E intersects TEV at point C (corresponding to optimum effort level E_T), neither the employer nor the employee will want effort to remain at that level. Under a simple piece rate, the employer's net revenue, after subtracting TIP_E from TRP_E, is maximized at E_{MAX}. Thus, the employer will want the employee to expend effort right up to the exhaustion point. Use of the simple piece rate causes the employer to want a too-high level of effort.

The opposite effect occurs for the employee. Under a simple piece rate, employee welfare will be maximized where the marginal income received by the worker is just equal to the marginal disutility cost of effort. Such maximization occurs at effort level E_{SP}. At that effort level, the slope of TIP_S is just equal to the slope of TEV. Use of the simple piece rate causes the employee to offer a too-low level of effort. Thus, the simple piece rate system of Figure 2 does not marry the interests of employer and employee, rather it spreads them apart.[13]

This aberrational behavior occurs because the piece rate does not reflect the marginal value of effort to the employer. Only if the employer set the rate so that all value went to the worker, would optimum effort (E_T) be expended. But the employer cannot offer such a rate in the simple terms we have presented. There would be nothing left for profits at a piece rate per widget of P (the market price) or a share rate of 100% of revenue.

To overcome this paradox of contracting, the employer must offer a more complex piece rate whose average value is less than its marginal value at effort level E_T. In practical terms, such an offer will entail a piece rate with a step function providing higher incentive payments above E_T than below it. For example, the employer could provide a simple hourly wage, but no incentive

bonus, for output below the level corresponding to E_T. A bonus could be offered for output at or exceeding that level.

Real world incentive system often do include such step functions, with bonuses occurring at particular output levels. The Bedaux Point System, an incentive plan developed in the early part of this century, functioned in that fashion, for example. But, since E_T is not readily observable, industrial engineers must try to establish the productivity levels at which the bonus should be given. In the absence of perfect information -- which would obviate any need for an incentive pay system in the first place -- such norm setting is likely to be accomplished through rules of thumb, past trends, or other fallible techniques.

As already noted, it is in the interest of employees to have norms and step points set at comparatively low effort levels. The arrival of a time and motion analyst to establish such criteria was a common source of labor unrest when incentive pay was in vogue. And the same problem exists today. Time can be measured and the quantity of output can be measured. But effort cannot be directly verified.

Any incentive payment system must therefore involve the hiring of overhead personnel -- supervisors, industrial engineers, time and motion specialists, etc. -- to (partially) overcome this measurement deficiency. The more overhead and

frictions the process entails, the less likely it is that incentive pay will be preferred by employers over conventional time-based compensation systems. After all, the idea of an incentive system is that it economizes on the need for supervision, relative to time-based systems.

IV. Share Systems.

Share systems are almost always used in conjunction with some other form of payment plan, whether time-based or incentive. There are three basic type of share systems: 1) productivity gain sharing plans which divide the savings from improved productivity between the employer and the employees, 2) profit sharing plans which give employees a portion of company profits, and 3) employee stock ownership plans which entail giving some equity ownership rights to workers. Each type of plan will be discussed briefly below.

i. Productivity Gain Sharing Plans.

Productivity gain sharing plans are designed to stimulate worker productivity by dividing the gains from added productivity between the employees and employer according to a formula. Such plans are often installed at the plant level. It is always difficult to determine when an HRM innovation -- such as productivity gain sharing -- was first initiated. However,

modern gain sharing is usually credited to Joseph Scanlon, a union official who designed such a plan in the 1930s as part of a deal to save a financially distressed company.[14]

There are three commonly cited forms of productivity gain sharing. The Scanlon Plan is based on the ratio of payroll to production value (sales plus inventory accumulation). A base level of this ratio is established from historical company or plant data. A decrease in the ratio below the base level is viewed as a labor cost saving and the total value of the saving is divided between the firm and the employees (in the form of a bonus payment). Scanlon payouts typically occur on a monthly or quarterly basis.[15]

Refinements are sometimes added to the Scanlon method. For example, the impact of product market prices is sometimes factored out, since a rise in product value might result simply from product price inflation. As with incentive plans, the base ratio is sometimes adjusted when significant changes in technology occur.

Generally, modern Scanlon Plans are implemented as part of a series of "quality of working life" measures. Forums and mechanisms are provided for employee participation in managerial decisions and for suggestions. Because of Scanlon's union background, however, the plans are generally used in unionized

settings and efforts are made not to disrupt existing collective bargaining processes. Little is known about the incidence of Scanlon Plans other than that they are infrequently used and tend to be found in smaller firms. One study estimated that about 400 such plans were in place in the early 1980s.[16]

Rucker and Improshare Plans

Rucker Plans were also developed in the 1930s. They are similar to Scanlon Plans, except that production value is measured by value added, i.e., sales plus inventory accumulation minus the cost of materials. The proportion of savings which is shared between employees and the company is set equal to the base period ratio of labor costs to production value.

The use of value added rather than sales in Rucker Plans is closer to the way economists measure the activity of a plant, firm, or industry. For example, in the national income accounts, the proportion of GNP originating in an industry is estimated using a value added measure. In practice, however, there will be little difference between a sales measure (as in Scanlon Plans) and a value added measure if the ratio of materials costs to total sales is not highly variable.

No estimate is available of the number of Rucker Plans in

operation. But as in the case of Scanlon Plans, only a small proportion of employers are believed to use them.

Improshare Plans are based on physical productivity rather than on value-based indexes of output. Base period output per labor hour figures are set on a product line basis using historical data. If productivity rises by, say, 5% relative to the base level, the saving is divided equally between the firm and the workers. Thus, the 5% saving would translate into a 2½ percent bonus. Improshare Plans are not designed to be part of quality of working life or worker involvement programs. Again, their incidence is unknown but small. Payouts under Improshare are often as frequent as weekly.[17]

The External Market and Productivity Gain Sharing.

Productivity gain sharing plans are linked in the minds of their proponents with internal company developments. That is, it is implicitly assumed that either forces which affect productivity are the result of influences within the company, or -- if not -- that the formulas used will filter out external factors such as inflation. There is reason to believe, however, that productivity gain sharing is not isolated from general economic trends.

One of the stylized facts of productivity at the national level is its procyclical movement. That is, productivity tends to decrease or decelerate during recessions and to increase or accelerate during periods of economic expansion. Table 3 illustrates this cyclical phenomenon during the 1970s and early 1980s. During recession periods, the rate of productivity advance has tended to be lower than during subsequent expansions. The procyclical effect is particularly apparent from the right hand column of Table 3 which removes the 1969-86 productivity trend from the data.

When first discovered, the fact that productivity was procyclical was viewed as a paradox. Surely, when the economy falls into recession, and labor is laid off, the capital/labor ratio must rise. In microeconomic theory, increases in the capital/labor are associated with increases in productivity. So why does measured productivity fall in recessionary periods?

There is a two-fold answer to this riddle. First, if capital is measured as a stock, i.e., the value of plant and equipment, then the capital/labor ratio will be anti-cyclical.[18] However, the relevant measure for capital is the <u>flow</u> of services, not the stock. If a plant works fewer hours per week (for example, if overtime is eliminated), its capital will be used that much less. Thus, as a first approximation, the flow-

Table 3

Productivity and the Business Cycle, 1969-86
(Nonfarm, Business Sector)

	Annual Rate of Change in Output Per Hour:	
	As Recorded	Detrended[1]
Recession 1969-71	2.0%	.9%
Expansion 1971-73	2.5	1.4
Recession 1973-74	-2.1	-3.2
Expansion 1974-79	1.1	0.0
Recession 1979-82[e]	0.0	-1.1
Expansion 1982-86	1.6	.5

[1]Over the entire period, 1969-86, output per hour rose at about a 1.1% annual rate. Productivity figures from the left-hand column were detrended by subtracting the 1969-86 rate from them.

[e]There were actually two back-to-back recessions during this period.

Source: U.S. President, Economic Report of the President, January 1987 (Washington: GPO, 1987), p. 294; Monthly Labor Review, vol. 110 (June 1987, p. 102.

based capital/labor ratio will be constant over the business cycle.

Second, firms will retain certain workers when orders and production levels decline. Some employees, ranging from guards to accountants, are "overhead" workers. The need for their services is largely a reflection of maintaining an organization, not the amount of activity in the organization.

In addition to overhead workers, other employees, even those more closely linked to production, may be retained to avoid turnover costs. If the fall off in business is considered temporary, the firm may prefer to retain the services of those workers who would be expensive to replace during the coming upturn. Such employees might be used to carry out maintenance projects which had been deferred during the period of high production.[19] Firm inventory policies (which reflect the costs of carrying currently unsold or unused goods), will be related to layoff policies. If carry over costs are not too high, layoffs can be reduced.

Since productivity is likely to be procyclical for these reasons, productivity gain sharing plans will tend to pay bonuses (or to pay higher bonuses) during boom periods. They will pay no bonus (or pay a smaller bonus) during business downturns. Thus, the firm acquires another advantage -- procyclical labor costs--

through these plans. This advantage has not traditionally been stressed (or even recognized) by plan proponents. However, it means that the firm pays most to labor when its "ability to pay" is greatest, and receives labor cost relief during hard times.

Hiring Plans: Employer vs. Worker Interests.

Although productivity tends to be procyclical, at any moment in time the conventional microeconomic wisdom is likely to apply. That is, the marginal productivity of labor will decline as more labor is added to the production process while other inputs are held constant. If employers are simply increasing working hours (say, by adding a second shift), the flow-based capital/labor ratio need not fall. But if more workers are added per unit of time, marginal productivity will be decreased as the flow-based capital/labor ratio is reduced.

This phenomenon -- when combined with a productivity gain sharing plan -- has the potential for creating a division of the interests of employees and management. Adding workers to the workforce tends to lower productivity and thus to decrease the gain sharing bonus. The bonus-lowering effect can be expected to separate workers into what economists call "insider" and "outsider" interests.[20] In this case, the insiders (workers who already have jobs with the firm) would feel in conflict with outsiders (those who might seek jobs).

Unfortunately, because studies of productivity gain sharing plans are so rare (and are often produced by advocates of such plans), little evidence is available on the severity of this conflict. But one study did report "active resistance (by workers) to any talk of increasing the size of the work force..."[21] Anecdotal evidence thus supports the existence of an insider/outsider conflict.

As we will see in the discussion of profit sharing below, however, although employees may favor restrictions on new hires, employers are likely to feel quite differently. Studies of wage determination (to be discussed in a later chapter) have found that wages are much less flexible -- particularly in a downward direction -- than simple textbook economics would suggest. Thus, in a conventional wage system (without productivity gain sharing or profit sharing) employers will limit their hiring. The limits are based on their (inflexible) wage levels. Even if there are outside job applicants willing to work for less than the going inside wage, without a share system, this willingness will not create additional jobs.

With a productivity gain sharing plan, or any system with similar characteristics, however, the firm has an incentive to hire more employees, if any are available. The additional hires "dilute" the bonus pool, thus lowering labor costs per worker.

This dilution effect occurs because their marginal productivity will be less than the average productivity of the firm's workforce.

If the bonus is based on average productivity, than adding more workers will pull down the bonus. In effect, the added workers end up working for less than the previous inside pay level (counting the bonus), even though the hourly wage component of total pay is not lowered. And the new hires also reduce pay for others in the employer's workforce at the same time.

Macroeconomic Benefits of Productivity Gain Sharing.

Like simple incentive pay plans, productivity gain sharing turns out to have more complex impacts on the employment relationship than might be initially supposed. These plans cannot always be assumed to create harmony of interests between employer and employee. However, note that some of the effects productivity gain sharing has are beneficial to society but external to the firm.

Whenever an activity has external benefits which are not captured by those responsible, economy theory suggests not enough of the activity will take place. With productivity gain sharing -- at least in some forms -- the externally beneficial "activity" is more flexible pay and (potential) additional hiring.

Additional hiring, and more stable employment of existing workers, is a social benefit in a world in which chronic unemployment problems persist. In a subsequent chapter, we will see that the added wage flexibility, which accompanies productivity gain sharing, could improve macroeconomic performance. And, if the employer incentive for additional hiring prevails, lower unemployment could also result.

Stakeholders and Productivity Gain Sharing.

At various points, we have noted that employees are stakeholders in the firm. That is, because mobility is costly to both the firm and the worker, employees find their welfare linked to the economic viability of their employers. Productivity gain sharing partially recognizes this employee interest. But since productivity and profitability are not identical, the stakeholder aspect of the employer/employee relationship is only imperfectly reflected by such plans.

ii. Profit Sharing.

Profit sharing plans are defined in this chapter to include only compensation systems which use a formula (either specified in writing or solidified by ongoing practice) to provide a share of profits to employees. It is important to stress this definition. Unfortunately, the term "profit sharing" has come to

be used loosely by compensation administrators to cover a variety of tax-deferred savings/retirement plans, some of which have little to do with profits. One study of 437 firms which reported that they had profit sharing found that over 40% in fact did not use a fixed formula to determine the bonus. This practice was common in small and medium sized firms, but relatively rare for plans covering 1,000 or more employees.[ee]

Loose terminology regarding profit sharing has a long history. For example, in the early part of this century, Henry Ford referred to his company's policy of paying higher wages to employees who met standards of moral character as "profit sharing." To be meaningful, however, the practice of paying high wages which do not vary with profits cannot be included under the profit sharing label.

The actual bonus formulas used in profit sharing plans vary widely. Some plans provide "first dollar" coverage, sharing each dollar of profits with employees according to a fixed percentage or schedule. Others have hurdle rates of return, requiring that only profits above a given level will be shared. In some cases, certain adjustments to profits are made before the employee share is calculated. For example, profits received from foreign subsidiaries may be removed from the "pot" before any sharing takes place.

Unfortunately, there are no comprehensive surveys of the types of formulas in use. If we confine the definition of profit sharing to plans which use a profit-based formula to determine the bonus, one study suggests that 3 out of 10 plans have a hurdle element in the formula.[23] But this estimate should be taken only as a general indication.

Empirical Evidence.

The BLS began collecting information on the proportion of employees covered by various fringe benefit plans in the early 1980s. Unfortunately, the survey is limited to medium and large firms, which accounted for only 29% of private, nonfarm payroll employment in 1986. Since small firms typically have less sophisticated HRM practices, it is likely that the BLS survey overstates coverage of the various benefits it reports, including profit sharing. That is, the proportion of workers covered by profit sharing in the entire economy is probably smaller than it is at medium and large sized firms.

Table 4 summarizes the coverage of profit sharing plans by broad occupational groups from the BLS survey. Twenty-two percent of employees included in the report participated in profit sharing. At one time production workers were somewhat less likely than white collar workers to be under profit sharing.

Table 4

Profit Sharing and Employee Stock Ownership Plans in Medium to Large Firms, 1986

	Percentage of Employees Participating in Profit Sharing and ESOP Plans					
	Profit Sharing Plans:				ESOP Plans	
	All	Cash	Deferred	Cash and Deferred	Tax Credit	Other
All employees	22%	1%	18%	3%	28%	2%
Professional, administrative	22	1	18	3	30	3
Technical, clerical	22	1	18	4	31	2
Production	22	1	17	4	26	2

Note: For profit sharing plans, details may not sum to totals because some employees participate in more than one type of plan.

Source: U.S. Bureau of Labor Statistics, Employee Benefits in Medium and Large Firms, 1986, bulletin 2281 (Washington: GPO, 1987), p. 81.

However, the data of Table 4 suggest that this tendency no longer applied, at least for medium and large firms by 1986.

Union Wage Concessions and Profit Sharing.

The blue collar/white collar distinction with regard to profit sharing probably eroded in the 1980s due to developments in the union sector of the economy. Until the 1980s, profit sharing was extremely rare in union contracts. However, unions found themselves forced to negotiate concessions on wages and workrules in the early 1980s. In some cases, they were able to obtain profit sharing in return. Large numbers of workers in the automobile industry, for example, were covered by profit sharing plans negotiated as part of concession deals at General Motors and Ford in 1982. Since that time, profit sharing has spread among union members in such industries as lumber, airlines, and steel.

We will have more to say about unions and profit sharing in a later chapter. However, it should be noted at this point that although unions were not receptive to profit sharing plans until the 1980s, unions offer certain advantages to their members regarding such plans. These advantages are not available to nonunion workers.

First, since profit sharing involves a calculation of profits, unions can perform an auditing function to ensure that appropriate bonuses are paid. Profits are subject to alternative estimation practices. Creative accounting can raise or lower measured profitability. Without their own auditor, workers may be unable to determine whether they are receiving adequate profit sharing payments.

Second, if profit sharing becomes a significant portion of total compensation, worker interest in the managerial decisions which affect profitability may rise. Unions could offer a mechanism for worker participation in such decisions. In the past, unions resisted the suggestion that they should take on a managerial role, preferring instead a traditional adversarial relationship with management. But in the 1980s, there was evidence of a shift in this attitude among certain key union leaders. Thus, for those officials, profit sharing has a new-found appeal.[24]

The Influence of Tax Preferences.

Certain types of profit sharing are eligible for preferential tax treatment. Basically, if the profit sharing bonus is paid into a trust fund used for retirement purposes, it may be deducted as a business expense by the firm. However, the employee has no tax liability until the contribution is paid out

(typically at the time of retirement or upon separation from the firm). Thus, the employee benefits by way of a tax deferral.[25]

The influence of these tax provisions is clear from Table 4. Those profit sharing plans which pay out only a current cash bonus (and thereby receive no tax preferences) account for a mere 1% of total employment in the BLS survey. Most of the profit sharing coverage involves plans which provide deferment of the bonus (payment into a trust fund), or which had both cash and deferred features (possibly offering the employee a choice).

Although the tax code undoubtedly tilts the mix of profit sharing plans toward the deferred variety, it probably has little effect on the basic decision of whether to have a profit sharing plan in the first place. There are other savings plans which employers can provide to employees and which offer similar tax deferral features, but do not involve a formula geared to profits. Thus, if the employer's objective is simply to provide a savings or retirement vehicle, alternatives to profit sharing are available which have equally attractive tax implications.

The Conventional HRM View of Profit Sharing.

Profit sharing, particularly in a large firm, may cover a broad range of corporate activities and products. This company-wide aspect of profit sharing means that the connection between

individual employee effort and profit sharing bonuses is remote. A worker in one division of a firm may receive a smaller or larger bonus based on developments in another division. Profits may fluctuate due to product market conditions, changes in interest rates, and other external factors. Or they may vary due to managerial decisions regarding marketing, investments, and other areas which do not reflect employee effort.

Because of the loose connection between effort and profits, HRM specialists have generally not viewed profit sharing as an incentive plan. Rather, its benefits -- as seen by proponents-- are said to be in the area of general morale boosting. In addition, profit sharing is viewed as potentially creating a more loyal workforce. Loyal workers are more likely to remain with the firm and thus reduce the costs of turnover.

Often, because profits may fluctuate for many reasons, an extensive communications program is seen as a necessary companion to profit sharing. The causes of profit variations need to be explained to employees, particularly in years when the bonus paid out mysteriously declines or disappears entirely. In the past, therefore, profit sharing was often the province of large, nonunion firms, with progressive HRM policies encompassing elaborate communications mechanisms.

Having profit sharing was sometimes seen by employers as part of a strategy for remaining nonunion. Although there is little evidence on the effectiveness of this strategy, one study did report lesser union success in winning representation elections at companies where profit sharing was being used.[26] This history of union avoidance accounted, in part, for the one-time tradition of union aversion to profit sharing arrangements.

As in the case of productivity gain sharing, much of the evidence on the effectiveness of profit sharing from the HRM perspective is anecdotal, and is often produced by proponents. Since profit sharing appears to be much more widespread than productivity gain sharing, it can be assumed that many employers have found it to be useful as part of an overall HRM program. But it remains limited to a minority of the workforce. Thus, many employers apparently do not believe that it would be in their interest to install profit sharing as a motivational device.

Some economists have argued that the fact that profit sharing is not used for a large majority of the workforce proves that it is not generally an effective motivational device.[27] However, it is possible to take a more agnostic viewpoint. For example, there is evidence that the Japanese practice of paying workers large bonuses is really a type of profit sharing.[28] If

Japanese firms find such schemes in their interest, it is not clear why U.S. firms would not.

Previous references in this text to implicit employer/employee contracting suggests that "fairness" is an important consideration in defining the relationship. However, fairness is a vague concept. If profit sharing were the norm, firms not offering it might appear unfair. Perhaps this is the case in Japan. And perhaps profit sharing could become the norm in the U.S. if it received encouragement, say, from additional tax preferences. There is a natural tendency, in the labor market and elsewhere, to feel that what exists is normal.

The Macroeconomic Side of Profit Sharing.

Recently, some economists have argued that profit sharing should be encouraged, not because it is particularly effective as an HRM device, but instead because it offers macroeconomic benefits. Since macroeconomic benefits flow to society at large, and not to the individual firm, it has been proposed that the government should provide encouragement in the form of special tax incentives. In effect, profit sharing is said to have positive externalities; thus it will be underutilized from a social welfare viewpoint unless subsidized.

The most prominent advocate of this position is MIT economist and professor Martin L. Weitzman.[29] A full exploration of the Weitzman position will be deferred to a later chapter. However, in brief, Weitzman argues that widespread profit sharing (and a variety of similar share plans -- including some of the productivity gain sharing plans previous described) would create an incentive for employers to increase hiring and to stabilize employment. If many firms actually did increase their employment levels, the national unemployment rate could be reduced.

Firms would increase their hiring, according to Weitzman, because the marginal cost of adding a worker would fall under profit sharing, and would be below the average cost. Each additional worker would contribute some extra output, and therefore, some extra profits. But only a fraction of these profits would be shared with workers, so that it would (usually) pay to hire more employees.[30]

According to Weitzman, the effect of a generalized demand for workers would be a permanent labor shortage. Even if aggregate demand tended to fall, firms would hang on to their workers due to the shortage. The result, he claims, would be a full employment, recession proof economy, without inflationary tendencies.

Weitzman's proposal for massive encouragement of profit sharing has stimulated considerable debate in economic circles. One of the criticisms made by commentators on his suggestion is that inside workers (those currently with jobs in the firm) would resist new hires (outsiders). Just as in the productivity gain sharing case, new hires would tend to dilute the bonus payment and lower average compensation for all workers already employed. If this resistance were severe, it might lead to restrictions on hiring and thwart Weitzman's goal of lowered unemployment. Again, this counterargument will be taken up in a later chapter.

Stakeholders and Profit Sharing.

Profit sharing comes closer to recognizing employees' stakeholder interests in their enterprises than productivity gain sharing. The basis of the bonus under (true) profit sharing is profitability -- the ultimate measure of the firm's economic health -- and not productivity. However, because profit sharing plan formulas vary widely, their impacts may differ substantially from company to company. Productivity gain sharing plans typically aim at making the bonus a significant element of total pay. Some profit sharing plans, in contrast, may pay out relatively small bonuses.

iii. Employee Stock Ownership Plans.

Examples of firms encouraging their employees to purchase their stock have existed for many years. Such programs go back at least to the 1920s, when some firms with more advanced HRM policies offered stock ownership incentives to employees, as part of what was then called "welfare capitalism." Plans of that era sometimes offered stock at a discount, or waived brokerage fees. Similar plans still exist today, whereby employees as individuals can accumulate company stock.

Redistributing Wealth Through ESOPs.

Over the years, a number of social reformers have argued that corporate stock should be more widely owned than is actually the case. The good society, according to this view, is one in which every worker is a mini-capitalist. It has also been argued, along the lines used by profit sharing proponents, that if workers owned the stock of their own employer, they would be more loyal, more concerned about the well-being of their firm, etc.

During the 1950s, such a position was advocated by Louis Kelso.[31] Under what became known as the Kelso Plan, federal tax incentives would be given to the establishment of stock trusts to be established by employers for their workers. By the mid 1970s,

this idea had captured the fancy of Senator Russell Long, chair of the Senate Finance Committee. Beginning in 1974, Long fostered changes in the tax code designed to favor establishment of Employee Stock Ownership Plans (ESOPs) and related arrangements. The result was a substantial expansion of these programs.

Tax Subsidies to ESOPs.

Perhaps the high point of the tax subsidy to ESOP plans came with the formation of so-called PAYSOP plans which provided a tax credit up to 1% of payroll if an equivalent amount of stock were given to the PAYSOP trust. Additional benefits were available to employers who matched employee contributions to the PAYSOP. As the President's Office of Management and Budget noted, the total subsidy from the tax payer to this arrangement was in excess of 100% of the costs![32] Not surprisingly, when Congress decided to reform the tax code in 1986, the tax subsidy to PAYSOPs was eliminated.

Regular ESOPs also receive special tax considerations. There are two basic types of ESOPs. In an "unleveraged" ESOP, the employer simply contributes stock to a trust fund for the benefit of employees up to limits specified in the tax code. The employer deducts the value of the stock as a business expense from corporate taxes. And the employees' tax liability is

deferred until they withdraw the contributions (at retirement or separation from the firm). Thus, an unleveraged ESOP is not much different in tax treatment from a conventional defined contribution pension plan.

It was, however, the "leveraged" ESOP that particularly excited Kelso and Long. As originally established in 1974, the leveraged ESOP was seen as a financial tool for employers as well as a "share the wealth" mechanism for workers. Employers would create trust funds for ESOPs and use them as financial intermediaries for raising capital.

Instead of the employer borrowing from a bank directly, for example, the ESOP trust borrows from the bank and the trust receives an equivalent value of stock from the employer in exchange for passing on the proceeds of the loan. The employer thereafter makes contributions to the trust to pay off the loan. Since the contributions are made to an employee benefit plan (and not directly to the bank), the employer is able to deduct both principal and interest payments from corporate income taxes. In contrast, in a conventional loan transaction (without an ESOP), only interest can be deducted.

Is the ESOP Game Honestly Played?

Proponents of ESOPs have touted the "advantage" the firm receives through the tax deduct of the loan principal. But is it really an advantage? Suppose the loan from the bank is for, say, $1 million. When all is said and done, the employer has 1) paid the bank its interest (a tax deduction with or without an ESOP), 2) repaid the bank its principal of $1 million, and 3) given away $1 million in stock to the employees via the ESOP.

If the stock is in fact worth $1 million, there is no subsidy involved in allowing a tax deduction of $1 million (plus interest). The stock contribution represents a claim on the company and an asset to the employees. Just as the firm deducts the cost of the money it pays out in wages (another kind of asset given to employees), so it should be able to deduct the cost of giving away stock.

Thus, despite the hoopla, the tax provision permitting deduction of principal should not have been a strong enticement to create leveraged ESOPs. Nor should there have been a strong inducement to create unleveraged ESOPs, since the shares given to employees (through the trust) are costs to the firm's other shareholders. Yet as Table 5 shows, the net formation of ESOPs -- as recorded in reports filed with the Internal Revenue Service -- rose rapidly after the tax code was revised in 1974.

Table 5

Cumulative Number of Stock Bonus and ESOPs, 1975-84

	Sum of Approvals Minus Terminations of ESOP and Stock Bonus Plans
Summer 1975	275
Dec. 1976	1033
Dec. 1977	1874
Dec. 1978	2682
Dec. 1979	3225
Dec. 1980	3670
Dec. 1981	4175
Dec. 1982	4516
Dec. 1983	4957
Dec. 1984	5467

Note: Figures are based on reports to the Internal Revenue Service.

Source: Estimates provided to the author by the Profit Sharing Research Foundation.

If the firm's stock is publicly traded, so that an outside market value can be easily verified, there will be little opportunity for abuse in valuation of the stock given to the plan. But where stock is closely held -- as in many smaller, family owned companies -- there is a danger that the value of the stock contributed to the ESOP trust could be artificially inflated to obtain an excessive tax deduction. A 1985 report based on 239 ESOPs found that only 13% were associated with firms whose stock was publicly traded.[33] Another survey put the figure at one fourth in 1983.[34]

Concerns that the ESOP mechanism was being abused were reflected in a 1980 government report. Excess stock valuations (and, therefore, excess tax deductions) were apparently being encouraged by the tax code. Apart from the question of valuation of stock contributed, the report noted problems related to the marketability of non-traded stock, and the limited voting rights allowed to employees for "their" shares.[35] Perhaps hoping to attract more firms into the ESOP pool, including larger, publicly traded enterprises, Congress passed a further tax incentive for ESOPs in 1984. The 1984 rules allow banks and other lenders to exclude half of the interest they receive from ESOPs from corporate income taxes. Borrowing through an ESOP is thus made cheaper than borrowing directly, since lenders will give reduced interest rates to ESOPs reflecting the tax subsidy.

The Incidence of ESOPs and their Future.

In 1986, according to Table 4, 30% of employees at medium and large firms were covered by some form of ESOPs. Yet the vast majority of these workers were under tax-credit ESOPs (the PAYSOPs previously discussed). Given the 100+ percent tax subsidy to PAYSOPs, it is surprising that the figure was not much higher. Regular ESOPs covered only 2% of the employees within the scope of the survey.

ESOPs have strong proponents and much of the research done on ESOPs has been by proponents.[36] But there is mixed evidence on their contribution to firm productivity or profitability. Recently, there has been a surge of interest in the use of ESOPs to transfer full or majority ownership to employees. In some cases, workers (and their unions) have bought failing enterprises and attempted to put them back into viable financial condition to preserve jobs. Some of these efforts have produced well publicized successes -- such as Weirton Steel in West Virginia.[37] Less publicity has accrued to cases where worker ownership has flopped, such as Rath Packing, a meatpacking company which went bankrupt under an ESOP.[38]

As long as some provisions of the tax code continue to favor ESOPs, they will remain on the scene. But their impact on productivity or employee loyalty remains uncertain. Nor have they transferred substantial stock to employees. And while ESOP success stories will inevitably attract favorable coverage, ESOPs will also receive unfavorable publicity when, for example, they are used by management to fend off hostile takeovers. Thus, with their close cousins, the PAYSOPs, now stripped of tax incentives, ESOPs seem destined to remain an interesting -- but not very important -- form of compensation.

There is an economic justification for this limited role for ESOPs. From a microeconomic viewpoint, ESOPs reflect only imperfectly, the stakeholder interests of employees in the firms which employ them. Once an employee's connection with the firm is severed -- through retirement, quit, or permanent layoff-- that stake ceases to exist. Yet with an ESOP, the employee who leaves the firm takes his/her equity, as stock, cash, or as an annuity. In contrast, with profit sharing or productivity gain sharing, claims on the company exist only for current employees. Thus, profit sharing and productivity gain sharing better recognize employee stakeholder interests relative to ESOPs.

From a macroeconomic viewpoint, ESOPs are also defective. The advantages that Weitzman has argued accompany profit sharing and similar arrangements do not accrue from ESOPs. ESOPs, at

least as they are structured in the U.S., create more stockholders, but do not make compensation more flexible or change the firm's hiring incentives. Thus, profit sharing plans have a better claim than ESOPs on the tax subsidy which ESOPs currently receive.

FOOTNOTES

1. Donald W. Myers, Human Resources Management: Principles and Practice (Chicago: Commerce Clearing House, 1986), p. 787.

2. Harriet Gorlin, Personnel Practices II: Hours of Work, Pay Practices, Relocation, no. 92 (New York: Conference Board, 1981), p. 25.

3. John Howell Cox, "Time and Incentive Pay Practices in Urban Areas," Monthly Labor Review, vol. 94 (December 1971), p. 54.

4. Norma W. Carlson, "Time Rates Tighten Their Grip on Manufacturing Industries," Monthly Labor Review, vol. 105 (May 1982), pp. 15-22.

5. Bureau of National Affairs, Inc., Basic Patterns in Union Contracts, eleventh edition (Washington: BNA, 1986), p. 125.

6. Earl F. Mellor and Steven E. Haugen, "Hourly Paid Workers: Who They Are and What They Earn," Monthly Labor Review, vol. 109 (February 1986), p. 21.

7. Supplemental Unemployment Benefit Plans (SUB Plans) are basically privately negotiated systems of unemployment insurance under which covered workers receive in addition to the unemployment insurance benefits paid by state agencies. They began to be negotiated in significant volume in the 1950s in certain manufacturing industries in which layoffs were a widely-used practice.

8. The Fair Labor Standards Act is better know as the "minimum wage law" since it specifies the federal minimum wage. The Act also contains provisions limiting the use of child (and teenage) labor.

9. Daniel E. Taylor, "Absences from Work Among Full-Time Employees," Monthly Labor Review, vol. 104 (March 1981), pp. 68-70.

10. Martin J. Gannon, "Preferences of Temporary Workers: Time, Variety, and Flexibility," Monthly Labor Review, vol. 108 (August 1984), pp. 26-28.

11. Daniel E. Taylor and Edward S. Sekcenski, "Workers on Long Schedules, Single and Multiple Jobholders," Monthly Labor Review, vol. 105 (May 1982), pp. 47-53.

12. One consideration for you would be whether or not you had good information on alternative jobs available to the builder. If other jobs were waiting, the builder would be less likely to dawdle on your job.

13. The model presented in Figure 2 was originally designed to analyze contingency fees charged by lawyers in personal injury cases. In such situations, the lawyer receives a percentage of the revenue obtained from the defendant (typically an insurance company) with the rest going to the plaintiff. In effect, the lawyer is on a revenue-based piece rate. See Daniel J.B. Mitchell and Murray L. Schwartz, "Theoretical Implications of Contingent Legal Fees," Quarterly Review of Economics and Business, vol. 12 (Spring 1972), pp. 69-76; and Murray L. Schwartz and Daniel J.B. Mitchell, "An Economic Analysis of the Contingency Fee in Personal-Injury Litigation," Stanford Law Review, vol. 22 (June 1970), pp. 1125-1162. An elaboration of the model appears in Kevin M. Clermont and John D. Currivan, "Improving on the Contingent Fee," Cornell Law Review, vol. 63 (April 1978), pp. 529-639.

14. Frederick G. Lesieur, ed., The Scanlon Plan: A Frontier in Labor-Management Cooperation (Cambridge, Mass: MIT Press, 1958).

15. Carla O'Dell and Jerry McAdams, People, Performance, and Pay (Houston: American Productivity Center, 1987), p. 43.

16. U.S. General Accounting Office, Productivity Sharing Programs: Can They Contribute to Productivity Improvement?, report AFMD-81-22 (Washington: GAO, 1981), p. 9.

17. O'Dell and McAdams, People, Performance, and Pay, op. cit., p. 43.

18. That is, the capital-to-labor ratio (with capital measured as a stock) will fall as the economy picks up and more employees are hired to work with the given amount of capital. Similarly, the ratio will fall during economic downturns.

19. Jon A. Fay and James L. Medoff, "Labor and Output Over the Business Cycle: Some Direct Evidence," American Economic Review, vol. 75 (September 1985), pp. 638-655.

20. Assar Lindbeck and Dennis J. Snower, "Wage Setting, Unemployment, and Insider-Outsider Relations," American Economic Review, vol. 76 (May 1986), pp. 235-239.

21. Ellen Wojahn, "'Gainfully' Employed," Inc., vol. 5 (December 1983), p. 152.

22. Hewitt Associates, 1986 Profit Sharing Survey (1985 Experience), joint bulletin with Profit Sharing Council of America (Lincolnshire, Ill.: Hewitt Associates, 1986), p. 15.

23. 1986 Profit Sharing Survey, op. cit., p. 15. The estimate is based on the percentage of plans with hurdles out of a sample of firms with bonuses based on profits with a hurdle, profits, and profits plus a discretionary element.

24. The reader should not be left with the impression that unions have completely turned around in their views on profit sharing. There is still skepticism, but mixed with a pragmatic attitude that in some cases profit sharing may be beneficial. See John L. Zalusky, "Labor's Collective Bargaining Experience with Gainsharing and Profit-Sharing" in Barbara D. Dennis, ed., Proceedings of the Thirty-Ninth Annual Meeting, Industrial Relations Research Association, December 28-30, 1986 (Madison, Wisc.: IRRA, 1987), pp. 174-182.

25. The employee may also be in a lower tax bracket upon retirement than he/she would be during working life.

26. Edgar R. Czarnecki, "Profit Sharing and Union Organizing," Monthly Labor Review, vol. 92 (December 1969), pp. 61-62.

27. Armen A. Alchian and Harold Demsetz, "Production, Information Costs, and Economic Organization," American Economic Review, vol. 62 (December 1972), p. 786.

28. Richard B. Freeman and Martin L. Weitzman, "Bonuses and Employment in Japan," working paper no. 1878, National Bureau of Economic Research, 1986.

29. Martin L. Weitzman, The Share Economy: Conquering Stagflation (Cambridge, Mass.: Harvard University Press, 1984).

30. These tendencies have already been described in this chapter with regard to gain sharing.

31. Louis Kelso, The Capitalist Manifesto (New York: Random House, 1958).

32. U.S. Office of Management and Budget, Special Analyses: Budget of the United States Government, Fiscal Year 1987 (Washington: GPO, 1986), pp. G29-G30.

33. ESOP Association, ESOP Survey, 1985 (Washington: ESOP Association, 1985), p. 7.

34. U.S. General Accounting Office, Employee Stock Ownership Plans: Interim Report on a Survey and Related Economic Trends, report no. GAO-PEMB-86-4BR (Washington: GAO, 1986), p. 19.

35. U.S. General Accounting Office, Employee Stock Ownership PLans: Who Benefits Most in Closely Held Companies?, report no. HRD-80-88 (Washington: GAO, 1980).

36. See, for example, Corey Rosen, Katherine J. Klein, and Karen M. Young, Employee Ownership in America: The Equity Solution (Lexington, Mass.: Lexington Books, 1986).

37. Steven Greenhouse, "Employees Make a Go of Weirton," New York Times, Section F, January 6, 1985, p. 4.

38. Tove H. Hammer and Robert N. Stern, "A Yo-Yo Model of Cooperation: Union Participation in Management at the Rath Packing Company," Industrial and Labor Relations Review, vol. 39 (April 1986), pp. 337-349.