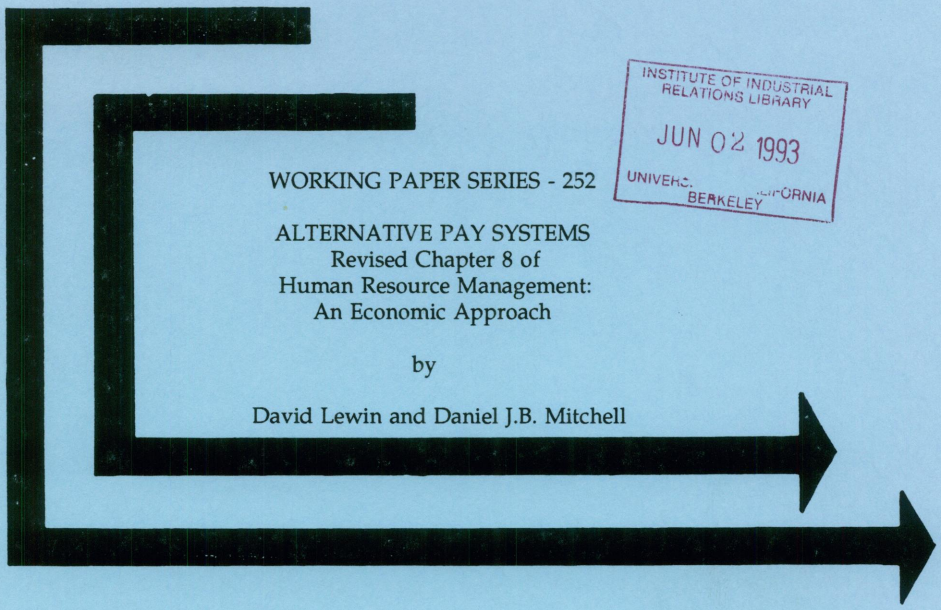



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# ALTERNATIVE PAY SYSTEMS
Revised Chapter 8 of
Human Resource Management:
An Economic Approach

by

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LOS ANGELES

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# Chapter 8: Alternative Pay Systems

Employers often use subjective evaluation systems to measure employee contribution to firm output, and then reward superior employees with pay increases, bonuses, and other economic benefits. But 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. For example, 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 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 late 19th and early 20th century involved the development of appropriate incentives. Frederick W. Taylor, the founder of the movement, sought to develop a pay system which would provide the proper motivation for employees.[1]

Even today, writers and consultants in the human resource 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 systems 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."[2]

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; when an employee is hired, a complex (although often 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 use of 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 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 remain 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. A firm whose reward system - say, a promotion hierarchy - is based on long attachments will want to avoid job hoppers.

Increasingly, firms are turning away from long-term employment relationships and guarantees. At one extreme is the temporary or contingent worker who may be employed on a transitory basis. But other employees may now fall somewhere between the long-term career model and the contingent worker. Because it will be difficult to motivate them with promises of a better tomorrow (since they might not be employed "tomorrow"), the idea of using an automatic pay-incentive system is attractive.

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, employees are not literally being paid merely to make an appearance at the workplace.

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 human resource specialists as loyalty generators rather than as direct productivity incentives.

iii. Empirical Evidence: Time vs. Incentive Systems.

Table 1 shows the incidence of time, piece-rate incentives, and commission incentives 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: production/service occupations and sales occupations. Often, where incentives are used, they are combined with a base (time-linked) wage as a floor.

It is not surprising that production/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. Production/service workers often are employed in manufacturing establishments which produce tangible, countable outputs.

Table 1

**Percentage of Employers Reporting Alternative Systems of Payment**

| | Production/ Service | Office/ Clerical | Professional/ Technical |
|---|---|---|---|
| Hourly only | 85% | 63% | 23% |
| Hourly & piece rate | 5 | - | - |
| Piece rate only | 2 | - | 1 |
| Salary only | 13 | 41 | 81 |
| Salary & Commission | - | 1 | 2 |
| Commission only | - | - | - |

| | Sales | First-level Supervisor | Middle Managers |
|---|---|---|---|
| Hourly only | 12% | 18% | 6% |
| Hourly & piece rate | - | - | - |
| Piece rate only | - | - | - |
| Salary only | 38 | 84 | 92 |
| Salary & Commission | 56 | 3 | 3 |
| Commission only | 10 | - | - |

- = none reported.

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 and Salary Administration, PPF survey no. 147 (Washington: BNA, 1990), p. 15.

For sales workers, there is an additional reason for use of incentives. Often sales workers are employed in situations where close supervision simply is not possible. Sales personnel who operate away from their offices are obvious examples. But also those sales workers 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.

Although data of the type shown on Table 1 are available sporadically from various organizations, it is often difficult to ascertain information on the nature of the sample and the potential biases which result. Studies based on employer responses to questionnaires dealing with pay systems often fail to indicate the proportion of workers covered by particular pay 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.

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Box A on psychology and piece rates here

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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 early 1990s, for example, one study of 400 union contracts found pay incentives included in almost a third of them, with the ratio rising to 45% in manufacturing.[5]

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Box B on unions in entertainment

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Box A

**Psychology and Piece Rates**

The popularity of piece rates as an incentive system appears to have peaked in the 1920s. After that era, the development of psychology and behavioral science began to cast the use of pure economic incentives in a bad light. Instead there began to be a sense that non-economic incentives were more important. As one commentator wrote in 1935:

"There are many wage-incentive plans that are successful largely because the employers are carrying out the basic principle of consultation with their employees... The plan is working primarily because the employer has as a background the respect and loyalty of the employees."

There was a brief revival of interest in piece rates during World War II, when they were seen as a possible way of stimulating increased war production. After the war, however, the decline begun in the 1930s resumed.

Source: The quote is by Carroll E. French as reported in Richard Stephen Uhrbruck, A Psychologist Looks at Wage-Incentive Methods (New York: American Management Association, 1935), p. 31.

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Box B

## Compensation Practices in Entertainment

Many observers of the labor market see a weakening of the employer-employee attachment. The film and TV industry is a prime example. Many employees work for projects, not ongoing employers. For films, for example, dealmakers put together financing with human resources - directors, writers, actors, technicians, and others. Since the employment relationship is not ongoing, since incentives are needed, and since there is a good deal of risk in some projects, contingent compensation practices have arisen. Performers and other professionals receive base pay plus a share of revenues (movie theater admissions, video sales, TV presentations, etc.) from the films to which they contribute. Similar arrangements can be found for TV program production and sound recordings.

Unlike most other private industries, there is a high degree of unionization in the core film and TV industries. Unions negotiate for contingent compensation arrangements and play a role in administering these arrangements. Revenues from films, for example, may continue over many years and it is necessary to keep track of members entitled to contingent payments and ensure that payments are actually made.

Source: Archie Kleingartner and Alan Paul, "Bases of Member Attachment to Unions in Arts and Entertainment" in John F. Burton, Jr., ed., Proceedings of the Forty-Fourth Annual Meeting, Industrial Relations Research Association, January 3-5, 1992 (Madison, Wisc.: IRRA, 1993), pp. 18-31.

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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" which may still be associated with a union distaste for incentives in some instances. The guaranteed annual wage idea was meant to address income variability due to periodic layoffs, rather than fluctuations in the rate of pay. Unions wanted their blue collar members to be paid annual salaries, rather than per-hour wages, making income less dependent on production. A system which gears pay directly to production is the antithesis of this idea.[6]

Unions might also oppose those incentive programs which made it more difficult for them to exercise group control over the pace

of work. Indeed, one of the original goals of scientific management was to wrest control over output from factory workers. However, the pace of work is a condition of employment, and unions can normally be expected to wish to influence all such conditions, not just pay.

v. The Influence of Human Resource Management.

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 human resource management function inside the firm. Human resource 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 human resource 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 human resource professionals not to be keen on incentives!

By the 1980s, however, the human resource 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 human resource 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. Is it more cost-effective to monitor and reward subjectively or through a formula?

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Box C on the ease of monitoring

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**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.

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Box C

**Is it Getting Easier to Monitor Employees?**

Although supervision is costly, technological advances may be easing the costs of monitoring - although not without sparking controversy. Employees who use the telephone, interact with computers, or are within sight of a video camera can be monitored electronically.

In some cases, electronic monitoring can be used to detect employee theft. For example, computer programs are available which detect unusual patterns of business telephone use which might suggest a large volume of personal calls being made at employer expense. Phone calls of telephone operators, telemarketing representatives, and even highly-paid stockbrokers can be timed and monitored. E-mail messages can be read. In 1992, Olivetti announced the development of an electronic badge which would permit tracking the location of employees throughout a work facility.

Not surprisingly, the ability to monitor afforded by new technology has created concerns about invasion of employee privacy. Congress began debating a bill in 1992 which would limit electronic monitoring to the first 60 days on the job and require advance disclosure of the use of electronic monitoring by employers.

Source: Gene Bylinsky, "How Companies Spy on Employees," Fortune, November 4, 1991, p. 131; Leonard Sloane, "Orwellian Dream Comes True; A Badge That Pinpoints You," New York Times, September 12, 1992, Section 1, p. 11.

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The data of Table 1 are 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.[7] However, the interest in some industries in quality of working life reforms which put blue-collar workers on a salaried basis and giving them more responsibility (note that the two are seen to go together), may have reduced this figure subsequently.

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 human resource 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.[8] And one of the more interesting and telling features of the 1990-1991 recession was that the number of unemployed workers reportedly on layoff status was drastically reduced relative to earlier recessions. Employers seemed less willing to maintain a relationship with employees that extended beyond actual employment.

Table 2 provides insights into the relative employment stability of different occupational groups. The first two columns show trends in employment over three recession periods: 1973-75, 1979-82 (which technically covers two back-to-back recessions), and 1990-91. In all cases, employment fell only for the blue-collar occupational groups, the groups most likely to be paid on an hourly basis. However, employment growth slowed markedly for managers and other white-collar groups in 1990-91, leading to descriptions of this episode as a "white-collar recession" (although blue-collar workers still bore the brunt of the downturn). There were many reports of corporate downsizing and layoffs of middle managers. Even IBM's so-called "full employment" policy of avoiding layoffs fell by the wayside in the aftershocks of the 1990-91 recession and the general shake-up in the computer industry.

Unemployment rates provide still another measure of potential job instability. Most of those persons officially counted as unemployed are either actively seeking work or on layoff awaiting recall.[9] The unemployment rate is defined simply as the proportion of the labor force which is unemployed, i.e., U/(LF) where U = the number of unemployed, LF = the number of people in the labor force = E+U, 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 1991).

Table 2

**Some Measures of Employment Stability by Occupational Group**

| Occupational Group | Percent Change in Employment During Recession Periods | | | Civilian Unemployment Rate | Proportion Experiencing Some Unemployment |
|---|---|---|---|---|---|
| | 1973-75 | 1979-82 | 1990-91 | 1991 | 1991 |
| Managerial/ professional occupations | +6.6% | +8.8% | +1.2% | 2.8% | 7.2% |
| Technical, sales, administrative support | +6.9 | +4.1 | +1.6 | 5.1 | 11.7 |
| Service occupations | +5.2 | +4.4 | +1.4 | 7.5 | 15.7 |
| Precision production, craft and repair | -2.6 | -6.5 | -3.5 | 7.9 | 21.3 |
| Operators, fabricators, and laborers | -8.4 | -12.1 | -3.4 | 10.5 | 23.6 |
| Total (b) | +.9 | +.7 | -.9 | 6.7 | 14.2 |

(a) Individuals are assigned to occupational groups by occupation of the longest job they held in 1991.

(b) Includes farming, forestry, and fishery workers not shown separately.

Source: Employment and Earnings, vol. 31 (January 1984), pp. 14, 167; Employment and Earnings, vol. 39 (January 1992), pp. 174, 183; Data for right-hand column supplied by U.S. Bureau of Labor Statistics from unpublished tables.

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 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 1991, but who also experienced one or more spells of unemployment during that year. Although the average monthly civilian unemployment rate in 1991 was 6.7%, 14.2% of persons who had jobs experienced at least one unemployment spell. For managers and professionals, the proportions with some unemployment fell in the 7% range, while for the blue-collar and service groups the range was 15-24%. These data again suggest a positive association between hourly pay status and likelihood of job loss. Salaried white-collar workers are less secure in their jobs than they used to be, but still more secure than production and service workers.

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

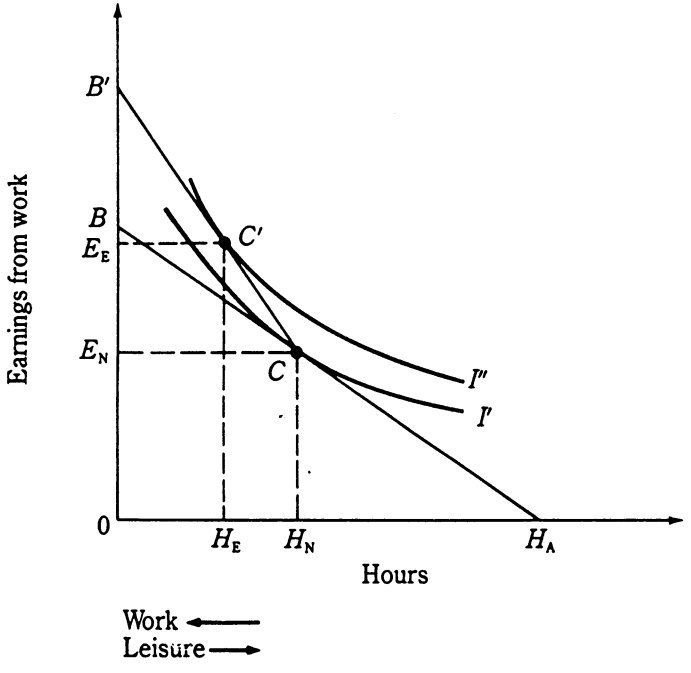
a half," e.g., a 50% premium, for weekly hours exceeding forty for "nonexempt" workers.[10] Nonexempt workers in human resource terminology are those subject to the FLSA; "exempt" employees are generally higher paid professionals and managers as defined in the law to whom overtime requirements do not 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 it is known 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). Still, there is evidence that the government-imposed 50% premium reduces the hourly workweek.[11]

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.

Figure 1

**Effects of Overtime Pay on Leisure–Work Trade-Off**



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.[12]

Such a situation is shown at point C. The earnings-leisure trade off line is just tangent to indifference curve I'. Thus, the worker is employed for $H_A$-$H_E$ hours, has $0H_W$ leisure, and receives total earnings of $E_E$. Let this configuration be regarded 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 $H_E$-$H_2$ would be worked, raising the worker's total earnings to $E_2$.[13]

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.[14] 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.[15] For workers seeking longer hours (and added income), "moonlighting" - that is, holding more than one job - is an option. About 6% of all employees are moonlighters and their median weekly hours substantially exceed those of single job holders.[16] 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. People whose productivity depends on one another cannot

come and go on the basis of personal whims.[17] 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, automatic incentive pay systems such as piece rates and commissions 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. Thus, there is a "win-win" element in the bargain you will reach. 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. Put another way - although it is not fashionable to point it out - most bargaining eventually reaches a point where a win-lose element sets in; conflict of interest is common in economic transactions.

One possibility would be for you to make a contract 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, essentially a fee-for-service approach. 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 would 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.[18]

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 in the cost of labor. And the matter is really not so simple from the customer perspective. If there is a fixed price, there may be an incentive for the builder 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.

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Box D on the incentives for HMOs

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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," <u>if</u> 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

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Box D

**The Incentives for HMOs**

Concern about rising health care costs in the 1970s led to the passage of the HMO Act of 1973 which basically requires employers to offer health maintenance organization (HMO) plans to employees IF they offer any health insurance at all and if there is an HMO in the local area. HMOs are considered to have strong incentives to hold down costs since they are paid a fixed monthly fee for each subscriber. Thus, if they allow costs to rise, the fee will be eaten up and profits will be lost. If costs are held down, profits will be larger. (Those HMOs which are not operated on a for-profit basis still must be concerned about their surpluses over cost.)

The first HMO, Ross-Loos, was established in 1929 to provide medical care for the employees of the Los Angeles Department of Water and Power in California. In 1937, another, better known, plan was established, the Kaiser plan, originally for construction employees in a remote location of the Kaiser Corp. It eventually was spun off as a separate non-profit foundation. At the time of the HMO Act's passage, the Kaiser plan had about half of the HMO enrollees in the U.S. About 35 million people were covered by HMOs in 1991.

Although HMOs have economic incentives to hold down costs, they raise some of the issues discussed in the text about the optimal contract. The same incentives to hold down costs could lead to withholding of service. Generally, choice and access will be more constrained under an HMO-type contract.

Source: "Milestones in the Growth of HMOs," Los Angeles Times, April 25, 1989, p. 20; U.S. Bureau of the Census, Statistical Abstract of the United States: 1992 (Washington: GPO, 1992), p. 106.

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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 when 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 does not pass a quality test, the failure could be due to inferior materials (provided by the employer) or to 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 an automatic 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, amicably or not.

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.

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Box E on restricting output under piece rates

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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

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Box E

**Restricting Output Under Piece Rates**

"When we have built our ninety pieces, we literally quit. Every new many coming in is warned not to produce more"

"If we do any more, they will cut our rate."

These quotes were among many found in a classic 1931 study of worker restrictions on output, which highlighted the perverse dynamics that a piece-rate system can set up. Workers try and restrict output, knowing that if they reveal their true (higher) productivity, their piece rates will be cut back. Firms, of course, attempt to discover the true productivity rate through time and motion studies. While these problems had long been known, the 1931 study surprised many because it was confined to nonunion establishments. Many experts had assumed that work restrictions only took place when workers were unionized.

Source: Stanley B. Mathewson, Restriction of Output Among Unorganized Workers (Carbondale, Ill.: Southern Illinois University Press, 1969 [1931]). The quotes are from p. 56.

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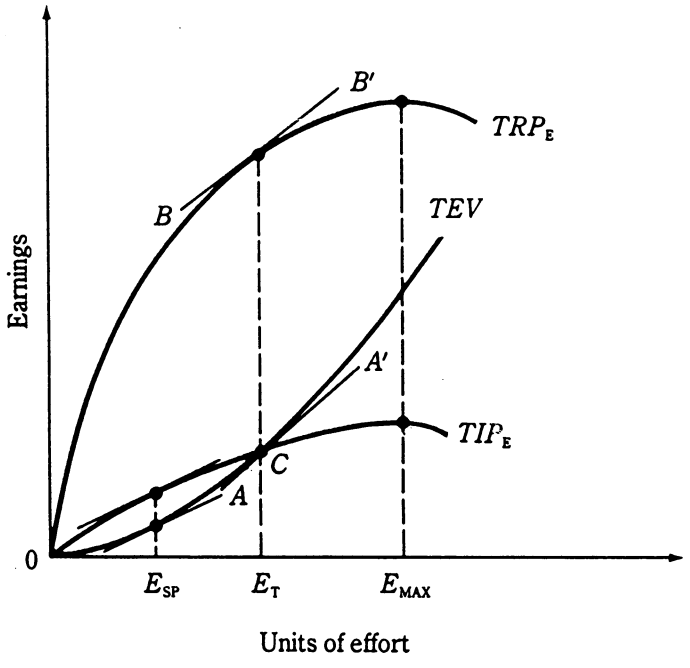
Figure 2

**Effect of Incentive System on Level of Effort**



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 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 marginal 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.

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Box F on employer desire for more sales

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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 $E_{ep}$. At that effort level, the slope of $TIP_E$ 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.[19]

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Box F

## Fuller Brush Incentives

For decades, the Fuller Brush man carried out door-to-door sales throughout the U.S. Fuller representatives were paid on commission; as long as the percentage going to the employer allowed a profit on the merchandise sold, it was advantageous to hire as many representatives as possible. That is, just as a simple piece rate can lead the employer to seek excessive effort, so a simple commission can lead to unlimited demand for sales representatives.

Of course, an excessive number of representatives will dilute the earnings of the average representative and make employment undesirable relative to alternatives. Hence, there is a limit on the number of representatives that can be recruited. But the employer will take more, if more sign up; in that sense, a simple commission system can lead to a seeming labor shortage.

In fact, Fuller Brush found itself facing a labor shortage in the mid 1980s, as increases in female workforce participation led to fewer housewives being at home. Eventually, the company - after being spun off from Sara Lee in 1989 - and renamed Fuller Industries, changed its marketing strategy toward mail-order sales and relationship sales (contacts by representatives of friends, relatives, and neighbors rather than cold calling).

Source: Babette Morgan, "Brush Merchant Turns Its Back on Door-to-Door," St. Louis Post-Dispatch, October 21, 1991, Business, p. 6; Doris A. Fuller, "Fuller Brush Man Still Knocking," Los Angeles Times, May 13, 1985, Part 4, pp. 1-2.

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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 that have been presented up to this point in the discussion. 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.[20]

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. Frederick W. Taylor, whose name was previously mentioned in connection with scientific management, proposed a "differential piece rate" which assigned a high rate to be paid above a specified output. Other, similar, pay systems were proposed and implemented early in this century. The Bedaux Point System, the Halsey Plan,

the Rowan Plan, and Merrick multiple piece rate, and the Emerson Plan are among the examples.[21]

All of these systems, however, present a measurement problem. 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.

v. Does Incentive Pay Benefit the Firm?

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 quality may be more difficult to measure. And effort cannot be directly verified. One of the most widely-cited deficiencies of piece rates is that workers have an incentive to hold back output in an attempt to fool management into accepting a lower-than-optimal work norm.

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Box G on piece rate problems

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Box G

**Piece Rate Problems**

Piece rates have an incentive effect, a management consultant reports, but that fact alone does not justify their use. A study of two manufacturers found that piece rates produced a quantity-over-quality mentality among employees. Quality was seen as something for supervisors and managers to worry about, not rank-and-file production employees who were explicitly rewarded on the basis of output. Although employees often developed their own techniques for increasing personal productivity, they had no incentives to pass this information to others or to train new hires. Wastage of material was also a problem, since these costs did not reduce piece-rate rewards.

When the companies dropped piece rates, measured productivity did fall but profitability and sales rose. The firms turned to group incentives and gain sharing as an alternative incentive plan.

Source: Thomas B. Wilson, "Is It Time to Eliminate the Piece Rate Incentive System?," Compensation and Benefits Review, vol. 24 (March 1982), p. 43.

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The motivation for worker restrictions of output is simple enough and has long been understood. (See Box E) Workers assume that management (or its agent) estimates production norms from historical data on what worker output has been previously. Thus, working hard today will lead to an increase of the norm and pressure to work still harder tomorrow, a ratchet effect. The larger workers believe the ratchet to be, the less is the value to them of an incentive bonus.[22] Under some economic models, management can, in principle, offset the incentive to restrict with an appropriate increase in the piece rate.[23] However, such an increase involves greater cost to the firm; hence, the incentive for output restriction reduces the attraction of piece rates and similar systems relative to ordinary time rates.[24]

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Box H on piece rates and quality

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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.

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Box H

**Dropping Piece Rates to Improve Quality**

Piece rates are quite common in apparel manufacturing. But one company, Thor-Lo, a specialty manufacturer of hosiery found it more profitable to drop the piece-rate system, put workers on salary, and emphasize team production techniques. Thor-Lo's market niche is a part of the explanation. It produces high quality socks used for health care purposes and for sports. The emphasis on quality, the firm believes, does not fit well with the quantity emphasis of piece rates.

Source: Steve Cranford, "Sock Maker Marching to Workers' Orders," The Business Journal-Charlotte (November 4, 1991), Sec. 1, p. 1.

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Despite the long-term trend away from incentives, and despite the drawbacks discussed above, there is one important piece of evidence suggesting that firms which use incentives receive a net payoff from them. Comparisons of piece rates and time rates within occupations consistently find that piece rates are higher than time rates, when converted to average hourly equivalents.[25] If firms are willing to pay more to incentive workers, there must be a net benefit to them in the form of higher productivity or reduced supervisory costs, compared to what would occur with time workers.

## 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 innovation in human resource policy - 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.[26]

There are three commonly-cited forms of productivity gain sharing. The Scanlon Plan, modeled after Joseph Scanlon's original program, 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.

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Box I on job security through a Scanlon Plan

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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.

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Box I

**Job Security and Productivity Gains Through a Scanlon Plan**

Installing a Scanlon Plan does not necessarily produce an instantaneous success, two university researchers and a top management official of the Xaloy Company report. Xaloy is a maker of steel cylinders used in plastic manufacturing equipment which employs about 180 workers. A fall in demand for its products in the mid-1980s led Xaloy to reexamine its human resource practices, including compensation. The company concluded that it needed to improve its marketing, but to do so it required increased employee commitment to quality. Conventional bonus plans had been tried previously without notable success. The company therefore selected a Scanlon approach.

Although workers initially approved of the Plan by an 83% vote, the economic difficulties of the firm initially produced no bonuses and consequent decline in morale. A substantial investment was then made in worker training in general business understanding as well as team processes. Gradually, despite the adverse economic climate, the morale situation was turned around and a stream of cost-saving suggestions began to be received. Moreover, the pay flexibility offered by the plan allowed retention of almost all employees during the period of economic difficulty. As the firm began to expand its markets, bonus frequency and size increased. Finally, workers could contrast their experience with large layoffs at competitor firms.

Source: Steven E. Markham, K. Dow Scott, and Walter G. Cox, "The Evolutionary Development of a Scanlon Plan," Compensation and Benefits Review, vol. 24 (March 1992), pp. 50-56.

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Box J on a hospital Scanlon Plan

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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 not in widespread use and tend to be found in smaller firms. One study estimated that about 400 such plans were in place in the early 1980s.[27] It is quite possible that the number increased after that estimate was made, due to the growth in interest in "pay for performance" generally. However, the number of workers covered by Scanlon Plans would still be very small relative to the overall labor force.

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Box K on Scanlon Plan but concessions

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Rucker and Improshare Plans

Rucker Plans were also developed in the 1930s. They are similar to Scanlon Plans, except that production value is measured

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Box J

**A Modified Scanlon Plan in a Hospital**

We often think of gain sharing, and especially the Scanlon Plan, as a tool for improving manufacturing productivity. But health care is an industry often criticized for lack of adequate attention to cost control. In 1989, Beth Israel Hospital, a nonprofit facility in Boston, adopted a modified Scanlon approach, following a favorable vote by the hospital's 4500 employees. Suggestions received under the program ranged from those applicable to operating highly technical equipment such as a CAT-scanner to preventing thefts by patients. Awards for cost savings are paid both to the initiating individual employees and to their work teams.

Source: Diane E. Lewis, "At Beth Israel Workers' Ideas Count for Plenty," Boston Globe (March 1, 1992), p. 81.

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Box K

**Scanlon Plan, But Still Concessions**

Preston Trucking, like many other firms in the trucking industry, came under increased competitive pressures in the 1980s after truck transportation was deregulated. In response, the firm developed methods of team production. It was felt, however, that the team system needed to be reinforced by the compensation system and so in 1984 a Scanlon Plan was adopted by the company and its various unions (mainly the Teamsters). By many measures, the new arrangements seemed to be successful. Cost-saving suggestions were developed by employees, grievance rates fell, and the firm received outside recognition in books by management experts and even a productivity award from the U.S. Senate. However, the basic competitive forces continued to press the company and its workers. Although covered by the same National Master Freight Agreement that applies to major interstate trucking employers, in 1993 Preston's 3400 Teamster-represented employees made special concessions to the firm - a 9% cut in pay below the general contract rate - to deal with its economic problems. In turn, the firm established a profit sharing plan which might compensate workers for their concessions if profitability is restored.

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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 GDP originating in an industry is estimated using a value-added measure. In practice, however, there will be little difference in the results of using a sales measure (as in Scanlon Plans) or 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. They appear to be concentrated in manufacturing and may be roughly as prevalent as Scanlon Plans.[28]

Payouts under Improshare are often as frequent as weekly.[29] In effect, Improshare plans are a cross between gain sharing and some of the more elaborate piece-rate systems described earlier, but applied on a group basis. Indeed, there is a fuzzy line between this form of gain sharing and group piece rate systems. In one study, 11% of employers reported some use of group incentive systems, some of which may have resembled Improshare arrangements although most probably were not.[30]

Do-It-Yourself Plans

Plans such as Scanlon, Rucker, and Improshare are essentially commercial products. However, firms are free to design gain sharing plans that meet their own needs. They may choose how productivity increases or cost savings are to be measured and link pay to these indexes through a formula they select. There is evidence that most gain sharing is of this customized, do-it-yourself variety.[31] Many of the factors which seem to influence the reported success of gain sharing - such as managerial style and employee involvement mechanisms - are likely to be company-idiosyncratic. Thus, there is reason for companies to consider the option of designing their own plans, if they go the gain sharing route.[32]

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Box L on gain sharing at Magma Copper

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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, 1980s, and early 1990s. 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 1969-90 (business cycle peak to business cycle peak) productivity trend from the data.

Table 3

**Productivity and the Business Cycle, 1969-91**
**(Nonfarm, Business Sector)**

| Period | Annual Rate of Change in Output Per Hour: | |
|---|---|---|
| | As Recorded | Detrended (a) |
| Recession 1969-71 | 2.0% | 1.0% |
| Expansion 1971-73 | 2.8 | 1.7 |
| Recession 1973-74 | -1.9 | -2.9 |
| Expansion 1974-79 | 1.1 | +.1 |
| Recession 1979-82 (b) | 0.2 | -.8 |
| Expansion 1982-90 | 1.0 | .0 |
| Recession 1990-91 | .5 | -.5 |

(a) Over the peak-to-peak period, 1969-90, output per hour rose at about a 1.0% annual rate. Productivity figures from the left-hand column were detrended by subtracting the 1969-90 rate from them.

(b) There were actually two back-to-back recessions during this period.

Source: U.S. President, Economic Report of the President, January 1993 (Washington: GPO, 1993), p. 398.

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Box L

**Gain Sharing at Magma Copper**

Labor relations in the copper mining industry were difficult at many firms when copper prices declined. But at one company, Magma Copper, the 1990s saw a different outlook at its Arizona operations. Until the late 1980s, Magma was known as a relatively high-cost producer. In 1991, the company and its various unions signed a 15-year agreement guaranteeing no strikes or lockouts during the first half of its term. A new gain sharing plan was introduced along with a "high performance team" system of work. Under the team system, workers are given more authority. The first-line supervisor, a foreman, is replaced by a team coordinator under the system. Narrow job classifications were replaced by broader definitions. Magma is said to be the first U.S. company to have developed this combination of gain sharing - based on pre-determined cost targets - and work restructuring.

Source: John Chadwick, "Magma from the Ashes," Mining Journal (October 1982), p. 221.

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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 movements in the capital/labor ratio will be anti-cyclical.[33] However, the relevant measure for capital is the flow 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-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 security 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.

It may be that firms are changing their view of exactly which occupations are "overhead" and are more willing to lay off groups such as middle managers today than in the past. But a procyclical effect can occur even without strict overhead workers. Other

employees, even those more closely linked to production, may be retained to avoid turnover costs.[34] 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.[35] 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.[36]

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.

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Box M on gain sharing at A.O. Smith

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Hiring Plans: Employer vs. Worker Interests.

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Box M

**Gain Sharing at A.O. Smith Corp.**

A.O. Smith, a manufacturer of body parts for trucks and cars had experienced declining employment at its Milwaukee plant. In 1991, a recession year, it signed a 4-year contracts with the Steelworkers and other unions covering about 2,100 employees. The new contracts featured a gain sharing plan to which the company attributed a 20% productivity increase. As a result, the firm was able to retain the jobs it had and add new lines of work. The plan created some variation in take-home pay, with some employees earning more and some less than under previous arrangements. Despite this variation, one union leader said, "I can't complain about it - we're still here."

Source: "Gain-Sharing Contract Pays Off in Job Security at A.O. Smith," The Business Journal-Milwaukee, November 28, 1992, Section 1, p. 3.

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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.[37] In this case, the insiders (workers who already have jobs with the firm) would feel in conflict with outsiders (those who might seek jobs). Profit sharing plans - discussed later in this chapter - raise similar problems, at least in theory.

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..."[38] Anecdotal evidence thus supports the existence of an insider/outsider conflict.

As will be seen 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 microeconomics 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 outsider willingness and availability 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. (See Box F)

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 potential 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, it will be seen that the added wage flexibility, which accompanies productivity gain sharing (and

profit sharing), could improve macroeconomic performance. And, if the employer incentive for additional hiring prevails, lower unemployment could also result.[39]

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.

Despite their imperfections, it is possible that gain sharing plans could raise productivity or lower net costs. Unfortunately, because the plans are not widely used, there has been little hard research concerning their effects. Firms that use gain sharing tend to be strong proponents of the approach. Case study evidence, which may be biased toward plans which are successes on some dimension, tend to report positive results. Workers under such plans tend to receive higher total pay suggesting that - as in the case of incentives - firms find that economic benefits accrue from the use of gain sharing.[40]

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. In one study, about 40% of the workers covered by profit sharing were under discretionary plans in which there was no specific formula relating bonuses to profits.[41] Another study of the computer industry found that the link between profitability and the bonus was weak in roughly half the plans studied.[42]

Loose terminology regarding profit sharing has a long history. For example, in the early part of this century, Henry Ford referred to his firm's policy of paying higher wages to employees who met company 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 with domestic employees takes place.

Unfortunately, there are no comprehensive surveys of the types of formulas in use. If the definition of profit sharing is confined to plans which use a profit-based formula to determine the bonus, one study suggests that one fifth of such plans have a hurdle element in the formula.[43] 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. Table 4 summarizes the coverage of deferred profit sharing plans by broad occupational groups from the BLS survey. Sixteen percent of full-time employees at medium-to-large establishments and 15% at small establishments participated in profit sharing. The proportion of workers covered by profit sharing would be somewhat higher on Table 4 if the survey included cash profit sharing as well as deferred. However, earlier surveys, which did

Table 4

**Deferred Profit Sharing and Employee Stock Ownership Plans**

| | Deferred Profit Sharing | | | Employee Stock Ownership Plans | | |
|---|---|---|---|---|---|---|
| | Medium & Large Establishments 1991 | | Small Establishments (a) 1990 | Medium & Large Establishments 1991 | | Small Establishments (b) 1990 |
| | Full-Time | Part-Time | Full-Time | Full-Time | Part-Time | Full-Time |
| All Employees | 16% | 10% | 15% | 3% | * | 1% |
| Professional/ technical | 13 | - | 16 | 4 | - | 1 |
| Clerical/ Sales | 16 | - | 17 | 4 | - | 1 |
| Production/ Service | 18 | - | 13 | 2 | - | * |

*Less than 0.5%.
- = not available.

(a) When confined to small independent businesses (as opposed to establishments), the data in this column are 14, 15, 16, 13.

(b) When confined to small independent businesses (as opposed to establishments), the data in this column are 1, 2, *, *.

Source: U.S. Bureau of Labor Statistics, press release USDL 92-764, December 9, 1992; U.S. Bureau of Labor Statistics, Employee Benefits in Small Private Establishments, 1990, bulletin 2388 (Washington: GPO, 1991), pp. 79, 85.

include cash plans, found the proportion of full-timers under pure cash plans to be only 1%."

Not surprisingly, part-timers were less likely to participate in profit sharing than full-timers. At one time production workers were somewhat less likely than white-collar workers to be under profit sharing. However, the data of Table 4 suggest that this tendency no longer applied, at least for medium and large firms, by 1991.

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 airlines, telephone communications, and steel.[45] In some cases, union profit sharing plans were later terminated. But they remain in place in others - notably autos.

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Box N on Weyerhaeuser

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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 actually offer potential advantages to their members regarding such plans. These advantages are not available to nonunion workers.[46] The degree to which unions actually undertake to offer these potential services remains to be seen.

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

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Box N

**Profit Sharing Added, Then Dropped at Weyerhaeuser Co.**

In 1986, a period of concession bargaining in the lumber industry, Weyerhaeuser Co., a major forest products supplier, negotiated a contract containing a substantial pay cut ($2.85 per hour) with the Woodworkers and Paperworkers unions after a six-week strike. The cut was larger at Weyerhaeuser than at other lumber and paper companies. But in return, a profit sharing plan was created. The plan was renewed in 1988. However, the fact that it was associated with pay cuts originally, and that large payouts from the plan did not materialize, led to its elimination in negotiations concluded in 1992. Workers received a fixed wage increase at the time of the plan elimination.

Source: Various issues of Current Wage Developments and the Monthly Labor Review.

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of a shift in this attitude among certain key union leaders. Thus, for those officials, profit sharing has a new-found appeal, at least relative to previous attitudes.[47]

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.[48] The tax system probably accounts for the very small proportion of workers noted earlier under pure cash profit sharing.

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 Human Resource 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, human resource specialists have often not viewed profit sharing as a simple 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. In addition, the restriction of output, quality, and material wastage problems sometimes associated with piece rates should not be present in profit sharing. Profit sharing does not involve the setting of time-and-motion work norms. And perverse behavior emphasizing quantity over quality or wasting valuable materials would cut into profits and reduce the reward.

Traditional proponents of profit sharing have argued that the firm should not view the expected share bonus as a substitute for the wage. Rather, it should pay the going wage and allow the bonus to perceived as something extra. In modern economic parlance, what is being proposed is a "gift exchange," i.e., extra pay as a "gift" from the employer in exchange for extra effort and loyalty from the employees.[49]

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 human resource management 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.[50] This history of union avoidance accounted, in part, for the one-time tradition of union aversion to profit sharing arrangements. To the extent that there are still union suspicions, history plays a role.

As in the case of productivity gain sharing, much of the evidence on the effectiveness of profit sharing from the human resource 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 human resource program. Econometric research has generally suggested a productivity-boosting effect of profit sharing although there are contradictory studies and the results obtained are often sensitive to specification.[51] Despite the favorable evidence, profit sharing - as Table 4 shows - 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.[52] In effect, they argue that coverage, not statistical research, is the ultimate empirical test. 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.[53] 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 human resource management 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 social 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.[54] 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 previously 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.[55] In short, firms would regard a dollar of wages as part of the marginal cost of production but would not so regard a dollar of profit sharing bonus payments.[56]

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 stimulated considerable debate in economic circles. One criticism is that if firms pay premiums to affect employee behavior, Weitzman's desirable effects may be thwarted.[57] Another

criticism 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.

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Box O on profit sharing in prison

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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, i.e., formula-based) 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. Other things equal, we would expect plans with large payouts to have the most dramatic effect on

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Box O

**Profit Sharing in Prison?**

Michigan prison inmates manufacture such items as shoes, bedding, and clothing and receive a small hourly wage plus a profit sharing plan based on the profits earned on these items by the state Department of Corrections. But during the recession of the early 1990s, sales fell sufficiently so that profit-related bonuses to the 1100 prisoners who participate in the program were eliminated. Just as in the private sector, profit sharing plans can make total compensation responsive to the ups and downs of the business cycle.

Source: "Guys With No Way to Lock in a Profit," Los Angeles Times, July 9, 1992, p. D1.

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behavior. Small-payout plans may be symbolic of a stakeholder role for employees, but do not provide much direct incentive.

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 human resource management 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.[58] 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.

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Box P on ESOP personalities

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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![59] Not surprisingly, when Congress decided to reform the tax code in 1986, the tax subsidy to PAYSOPs was eliminated. And these plans disappeared or were folded into other deferred pay programs. The PAYSOP episode demonstrated that with

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Box P

## ESOP Personalities

Louis O. Kelso is usually seen as the father of the Employee Stock Ownership Plan although the notion of worker-owned enterprises long predates his activities on behalf of ESOPs. Like various advocates of cooperative and utopian movements found in earlier history, Kelso, who died in 1991, saw employee stock ownership as a way of transforming capitalist society into something better. His first book, co-authored with philosopher Mortimer Adler and published in 1958, was entitled The Capitalist Manifesto and set forward the general framework for ESOPs. Other books followed along the same lines. And Kelso formed his own consulting firm to promote business adoption of the ESOP approach.

Despite the books, Kelso's biggest success was in capturing the eye of one man, Senator Russell Long of Louisiana, chairman of the powerful Senate Finance Committee - the committee which handles tax legislation - in the 1970s. From the mid 1970s until Long's retirement from the Senate in 1986, each iteration of the tax code contained new incentives for ESOPs and related plans. Long's attraction to the ESOP idea apparently stemmed from his own personal history. Long was the son of Huey Long, a powerful Louisiana governor and senator whose populist "share the wealth" movement during the Great Depression attracted millions of followers until he was assassinated. Although Huey Long's proposal for exactly how wealth should be shared were vague, the ESOP idea - with its notion of spreading stock ownership was attractive to son Russell.

Source: "Louis Kelso, Employee Stock Ownership Pioneer, Dies," Washington Post, February 22, 1991, p. D5; and other documents.

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enough subsidy, large numbers of firms could be induced to cover their workers with ESOP-like arrangements. By 1986, 30% of full-time employees at medium-to-large private establishments were covered by PAYSOPs.[60] But the cost was large and Congress is unlikely to want to be so generous in the future.

Regular ESOPs also receive special tax considerations. Lost federal tax revenue due to ESOP-related features of the tax code (beyond those which apply to other types of deferred pensions) amounted to $2.2 billion in fiscal year 1993. There are two basic types of ESOPs recognized by the tax code. 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.[61]

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 mechanism for workers to own stock. 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 deduction 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, <u>there is no subsidy</u> involved in allowing a tax d eduction 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 rose rapidly after the tax code was revised in 1974.[62]

Similarly, absent the leveraging feature, it would appear that ESOPs are dominated by ordinary pensions when the tax treatment of interest vs. dividends is considered. If an employer borrowed to finance an ordinary pension, the interest on that debt is tax deductible. However, if the employer instead creates stock for an ESOP to finance the same future obligation, the dividends paid on that stock are not deductible.[63] But, again, once the tax code was revised in 1974, ESOP usage grew rapidly.

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

Table 5

**Number of Employee Stock Ownership Plans, 1975-90**

| | Number of Plans | Percent Increase Since Previous Period |
|---|---|---|
| 1975 | 1601 | - |
| 1980 | 5009 | 213% |
| 1985 | 7402 | 48% |
| 1990 | 9870 | 33% |

Source: Data from National Center for Employee Ownership, Inc. reproduced in U.S. Bureau of the Census, Statistical Abstract of the United States: 1992 (Washington: GPO, 1992), p. 534.

contributed to the ESOP trust could be artificially inflated to obtain an excessive tax deduction. A 1989 report based on 467 ESOPs found that only 12% were associated with firms whose stock was publicly traded.[64] But since larger firms tend to be publicly traded, it has been estimated that about half of the workers covered by ESOPs are in such firms.[65]

Concerns that the ESOP mechanism was being abused were first 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.[66] 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 allowed banks and other lenders to exclude half of the interest they receive from ESOPs from corporate income taxes. Borrowing through an ESOP was thus made cheaper than borrowing directly, since lenders would give reduced interest rates to ESOPs reflecting the tax subsidy. But in 1989, this benefit was restricted to firms with at least 50% worker ownership, a level far above that found at most ESOP companies.

Another concern about ESOP abuse arose over the use of ESOPs by incumbent management as a hostile takeover defense in the 1980s.

By placing voting stock in the hands of a presumably friendly ESOP, the acquisition of voting control by outsiders was made more difficult. The fear of hostile takeovers appeared to fuel a surge of interest in ESOPs once this tactic was understood. In some cases, standard pension plans were terminated - an action that usually harms employees below retirement age - and the proceeds used to create ESOPs, something that may have mainly been of benefit to existing management. Apart from the original management motivation for creating an ESOP, the concentration of the retirement portfolio of employees in a single asset - the stock of a single employer - seems an unwise portfolio strategy.

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Box Q on ESOP Risks

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The Incidence of ESOPs and their Future.

In the early 1990s, according to Table 4, ESOPs covered 3% of the full-timer workers in medium to large establishments and 1% in small establishments. Part-timers were rarely covered by such programs. Given the tax subsidy available to ESOPs, and the general fervor with which they have been promoted, these coverage estimates are not particularly impressive. They may strike readers who have come across studies suggesting that employee stock ownership is the wave of the future as surprisingly low.[67] ESOP proponents tend to cite much higher figures for coverage, based on

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Box Q

**ESOP Risks**

Thomson McKinnon, a small brokerage firm, was 77% employee owned through an ESOP with about 5000 participants. Prior to the 1987 stock market crash, the ESOP was worth $140 million. But the crash dealt the firm a serious blow and a few years later it found itself in liquidation and the ESOP's shares essentially worthless. Plan trustees were soon sued by former employees charging mismanagement, suit fueled by revelations of seemingly-excessive management perks and compensation.

Source: Anne B. Fisher, "Employees Left Holding the Bag," Fortune (May 20, 1991), p. 83; Gretchen Morgenson, "The Captains Who Didn't Go Down with the Ship," Forbes (August 21, 1989), p. 39.

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private studies. But the figures of Table 4, since they come from a neutral and responsible government statistical agency, must be given strong weight.

ESOPs have strong proponents and much of the research done on ESOPs has been by proponents.[68] But there is mixed evidence on their contribution to firm productivity or profitability. A study by the U.S. General Accounting Office found that ESOPs had no effect on profitability; some indication of a positive effect on productivity was found only when ESOPs were combined with worker participation in management decision making.[69]

Apart from any effect on corporate performance, there was a surge of interest during the 1980s 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. Less publicity has accrued to cases where worker ownership has flopped, such as Rath Packing, a meatpacking company which went bankrupt under an ESOP.[70]

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Box R: ESOP Saves Jobs

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Box S: ESOP at a failing co.

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Box R

**An ESOP Saves Jobs**

The American steel industry underwent substantial restructuring and downsizing in the 1980s. But some smaller steel companies were able to establish profitable niches and prosper despite the overall industry situation. After a lengthy strike in the mid 1980s, Gilmore Steel Corp. was sold to an ESOP and became Oregon Steel. The new firm manufactures specialty tubing for transporting natural gas. Apart from the ESOP, the compensation system for employees was changed to a combination of profit sharing and fixed salaries (not hourly rates). After restoring profitability and saving jobs, the company again went public in 1988 to obtain new capital. At market values, many employees discovered their ESOP shares were worth $100,000 or more.

Source: William McCall, "ESOP Saves Oregon Steel Plant, Enriches Workers," Chicago Tribune (December 13, 1992), business section, p. 11.

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Box S

**Employee Ownership of a Failing Enterprise**

In 1985, the 227 employees of Seymour Specialty Wire Company, a brass product manufacturer in Seymour, Connecticut, bought the company through an ESOP from its previous owners, National Distillers. The parent firm had announced its intention previously to sell Seymour due to declining profitability. Market pressures from abroad and from substitute materials such as plastics were undermining the economic base of the 107-year old firm. The union at Seymour, a local of the United Auto Workers joined with various community organizations, religious, and political leaders to engineer the buyout. Part of the buyout plan included a 10% wage cut, a plan of workforce reduction via attrition, and elaborate arrangements for worker participation in management.

The new owners billed the firm as "the largest democratic, worker-owned business in the nation." At one point, the new firm was used for shooting the film "Other Peoples Money" with Gregory Peck and Danny DeVito. However, the company experienced difficulties in trying to develop its democratic, shared decision making process. Although progress seemed to be occurring in resolving these difficulties, by 1992 the company had closed its doors, laid off all its worker/owners, and entered chapter 11 bankruptcy. The same underlying external economic pressures that threatened the company prior to the ESOP, when combined with general recession, could not be overcome.

Source: Michael Remez, "Union Leader Has Hopes for Failed Business," Hartford Courant (August 10, 1992), business weekly, p. 3; U.S. Department of Labor, Bureau of Labor-Management Relations and Cooperative Programs, "Saving Jobs and Putting Democracy to Work: Labor-Management Cooperation at Seymour Specialty Wire," labor-management cooperation brief no. 11, September 1987.

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As long as some provisions of the tax code continue to favor ESOPs, they will remain on the scene. There will be well-publicized success stories and less publicity to failures. Even successes may turn out to be less idyllic than originally promised; perhaps the company is saved but downsizing is nonetheless required. Readers are advised to take a critical, clinical view concerning claims made about ESOPs. Because of the ownership element, the tendency to view them as the heralds of a new economic order is always present. Instead, it is best to regard ESOPs as simply a compensation option.

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Box T: ESOP doesn't guarantee job

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There is an economic justification for limiting the role of public policy, i.e., the tax code, in promoting ESOP formation. 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

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Box T

**ESOP Does Not Guarantee a Job**

During the 1980s, Weirton Steel was often cited as one of the most prominent success stories of employee ownership. The company was formed when National Steel sought to abandon its operations in Weirton, West Virginia. A community effort in cooperation with an independent union which represented the workers a National Steel produced a worker buyout. National Steel had a special incentive - significant pension liabilities if it shut the plant without finding a new owner - to facilitate the takeover. And workers took a 20% pay cut a long wage freeze thereafter to make the buyout possible. In 1989, workers took a cut in profit sharing bonuses and agreed to permit some outside (minority) ownership in order to raise new investment funds. But although the ESOP which bought the plant in 1984 saved jobs at that time, 1000 jobs (out of 8200) were eliminated in 1991 with others slated to be axed later.

Source: Maria Mallory, "How Can We Be Laid Off If We Own the Company?," Business Week (September 9, 1991), p. 66.

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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.[71] Thus, profit sharing plans have a better claim than ESOPs on the tax subsidy which ESOPs currently receive.

## V. Conclusions.

Firms face compensation decisions that are much more complicated than simply determining the average wage. How to pay is as important as what to pay. A variety of alternative ways of structuring pay are in use, some based on time units of labor input, and others based on output, revenue, value added, or profits. The alternative systems serve complex functions of monitoring and motivating the workforce. Systems which involve the employee in economic sharing may or may not be linked to quality of working life arrangements which also provide for a share in decision making.

All of the alternative systems have their proponents. Generally, all could do with more research on their ultimate

effects on firm economic performance.[72] The case for ESOPs is probably the shakiest of all of the alternatives, since ESOPs seem to be mainly dependent on tax advantages rather than clear cut evidence of a positive impact on profitability or productivity. Incentive workers seem usually to earn more than comparable time workers, suggesting that firms which use incentive systems receive a payoff in higher productivity or reduced costs.

## EXERCISE FOR THE STUDENT

Imagine you are a human resource executive in a large firm with many plants and operating units. Your workforce is paid on a time-based system and you are considering the installation of an alternative system of pay. Because you have many plants in your company, you have the opportunity to experiment with alternative systems at different locations. Develop a research design so that you will be able to determine if installation of a particular plan will improve company performance. Be sure to specify what objectives you are seeking.

## KEY QUESTIONS AND PHRASES

1. What factors have contributed to the long term decline in the use of incentive systems relative to time-based pay?

2. What impact did the phenomenon of union concession bargaining in the 1980s have on pay plans in the union sector?

3. Do piece rates marry the interests of employer and employee?

4. What can be inferred from the average wage differential between incentive workers and time workers?

5. How has the tax code influenced the choice of pay systems?

6. How does the business cycle affect productivity?

Phrases:

commissions, derived demand for labor, ESOP, exempt employee, Fair Labor Standards Act, Improshare Plan, insider-outsider model, leveraged ESOP, moonlighting, piece rate, profit sharing, restriction of output, Rucker Plan, Scanlon Plan, scientific management, team production, time and motion study, unemployment rate.

## FOOTNOTES

1. Frederick W. Taylor, The Principles of Scientific Management (New York: Harper & Brothers Publishers, 1911). Taylor's interests went beyond pay systems into all manner of managerial innovation. In many respects, the notion that management could be studied systematically and improved developed from Taylor's work. If you are reading this textbook as a student in a business school, much of what you are learning goes back to that notion.

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

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, thirteenth edition (Washington: BNA, 1992), p. 125.

6. Unions did not achieve this goal. The demand for a guaranteed annual wage evolved instead into supplemental unemployment benefit systems which add to the payments unemployed workers receive from state unemployment insurance systems.

7. 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.

8. As indicated in an earlier footnote, 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.

9. A small additional number of the unemployed are individuals who have found a job which they have not yet started, and which they will start within 30 days. To be counted as employed or unemployed, an individual must be part of the noninstitutional population (i.e., not in a jail, hospital, or similar institution) and at least 16 years of age.

10. 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.

11. Stephen J. Trejo, "Does the Statutory Overtime Premium Discourage Long Workweeks?," paper presented to Public Finance, Labor, Econometrics Workshop, UCLA Department of Economics, April 1992. Although it may seem evident that the imposed premium reduces hours, in theory - under implicit contracting - employers and employees might adjust the hourly wage such that the premium did not raise the weekly wage and thus remove the overtime-reducing effect.

12. The concept of a map of indifference curves is drawn from consumer theory. Each curve represents a menu of alternative combinations - in this case of leisure and earnings - which leave the worker's utility (state of welfare or well-being) unchanged. The curves are concave, representing diminishing marginal utility of the two "goods." Students who have had an elementary microeconomics course should be familiar with indifference curve analysis. If the concept is unfamiliar, consult any standard microeconomics textbook.

13. It will be seen in the next chapter that the employer benefits from paying a premium for incremental hours worked rather than simply raising the basic hourly wage.

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

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

16. John F. Stinson, Jr., "Multiple Jobholding Up Sharply in the 1980s," Monthly Labor Review, vol. 113 (July 1990), pp. 3-10.

17. An alternative explanation of employer control of hours relates to the implicit contracting notion described in a previous chapter. If workers are underpaid early in their careers and underpaid later, they will tend to want to "underwork" and later "overwork," given their hourly pay rates. Hence, employers would have to set hours as part of the implicit contract. Empirical information on desired hours, however, does not suggest that young workers want to reduce hours while senior workers want to increase them. See Edward P. Lazear, "Agency, Earnings Profiles, Productivity, and Hours Restrictions," American Economic Review, vol. 71 (September 1981), pp. 606-620; and Susan E. Shank, "Preferred Hours of Work and Corresponding Earnings," Monthly Labor Review, vol. 109 (November 1986), pp. 40-44; Kevin Lang, "Understanding Over- and Underemployment," NBER Reporter (Summer 1988), pp. 6-9.

18. 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.

19. 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.

20. Strictly speaking, this statement should be modified to take account of the materials input into production. The employer cannot give away 100% of value added, i.e., net rather than gross revenue after deduction of materials cost. Nor can the employer set a piece rate such that it consumes the margin between output price and unit materials cost.

21. For details of these systems, see Benjamin W. Niebel, Motion and Time Study, fourth edition (Homewood, Ill.: Richard D. Irwin, 1967), chapter 25.

22. Martin L. Weitzman, "The 'Ratchet Principle' and Performance Incentives," Bell Journal of Economics, vol. 11 (Spring 1980), pp. 302-308.

23. Edward P. Lazear, "Salaries and Piece Rates," Journal of Business, vol. 59 (July 1986), pp. 405-431, especially pp. 422-425.

24. The fact that the cost of piece rates rises relative to time rates does not mean that using a piece rate will necessarily be uneconomical for a given firm. Each firm must weigh the costs and benefits of alternative systems.

25. Eric Seiler, "Piece Rates vs. Time Rates: The Effect of Incentives on Earnings," Review of Economics and Statistics, vol. 66 (August 1984), pp. 363-376. Another study finds that the differential between incentive and time workers lies across, rather than within, establishments. That is, workers at the same establishment receive similar pay, regardless of pay system used. But some establishments specialize in incentive pay, while others use mainly time pay. See John H. Pencavel, "Work Effort, On-the-Job Screening, and Alternative Methods of Remuneration" in Ronald G. Ehrenberg, ed., Research in Labor Economics, vol. 1 (Greenwich, Conn.: JAI Press, 1977), pp. 225-259, especially pp. 241-248. See also Daniel J.B. Mitchell, David Lewin, and Edward E. Lawler III, "Alternative Pay Systems, Firm Performance, and Productivity" in

Alan Blinder, ed., Paying for Productivity: A Look at the Evidence (Washington: Brookings Institution, 1990), pp. 52-55.

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

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

28. Steven E. Markham, K. Dow Scott, and Beverly L. Little, "National Gainsharing Study: The Importance of Industry Differences," Compensation and Benefits Review, vol. 24 (March 1992), pp. 34-45, especially pp. 35, 37.

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

30. Bureau of National Affairs, Inc., Non-Traditional Incentive Pay Programs, Personnel Policies Forum No. 148 (May 1991), p. 2. Two percent of the same group of respondents reported using gain sharing explicitly.

31. Firms which reported having gain sharing programs in a survey taken in the mid 1980s indicated that many of the plans were not of the Scanlon, Rucker, or Improshare types described below in the text. Some were described as "profit sharing," but geared to a subunit of the firm such as division. See Carla O'Dell and Jerry McAdams, People, Performance, and Pay (Houston: American Productivity Center, 1987), pp. 43-44.

32. A review of the factors associated with success of gain sharing can be found in R.J. Bullock and Mark E. Tubbs, "A Case Meta-Analysis of Gainsharing Plans as Organizational Development Interventions," Journal of Applied Behavioral Science, vol. 26 (3:1990), pp. 383-404.

33. 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.

34. For example, a 6-month lag was found even in the adjustment of the hours of production workers in manufacturing (a group that should be very sensitive to output). And since hours per worker can be adjusted to meet labor demand, the employment of production workers was always less than proportionate to output. See Christopher A. Sims, "Output and Labor Input in Manufacturing," Brookings Papers on Economic Activity (3:1974), pp. 695-728.

35. 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.

36. Technically, if productivity is measured using deflated values, and if pricing is perfectly competitive, there might not be a procyclical productivity effect, even with labor hoarding. The marginal value of the increment to output would just equal the marginal value of the increment to labor input. If price is above marginal cost (it could not be below for long) due to market power or any other reason, the procyclical effect will be observed even using value measurements. See Julio J. Rotemberg and Lawrence H. Summers, "Labor Hoarding, Inflexible Prices and Procyclical Productivity," working paper no. 2591, National Bureau of Economic Research, May 1988.

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

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

39. One way of looking at this issue is to consider price (and, therefore, wage) rigidity as having a negative externality on other firms. If a firm's prices are rigid (unresponsive to demand) because of wage rigidity, it will adjust to demand fluctuations exclusively through output. But its larger output swings make demand more variable for other firms, especially suppliers. The firm does not bear the cost of this negative external effect, creating (macro)economic inefficiency. To the extent that flexibility was increased -- as might occur through gain sharing -- efficiency is improved. The externality approach can be found in Laurence Ball and David Romer, "Are Prices too Sticky?," working paper no. 2171, National Bureau of Economic Research, February 1987.

40. R.J. Bullock and Edward E. Lawler, "Gainsharing: A Few Questions, and Fewer Answers," Human Resource Management, vol. 23 (Spring 1984), pp. 23-40.

41. U.S. Bureau of Labor Statistics, Employee Benefits in Medium and Large Firms, 1989, bulletin 2363 (Washington: GPO, 1990), p. 110.

42. Michael D. Bradley and Stephen C. Smith, "The Comparative Institutions of Profit Sharing: The U.S. Computer Industry," Journal of Economic Issues, vol. 26 (June 1992), pp. 573-582.

43. Profit Sharing Council of American, 34th Annual Survey of Profit Sharing and 401(k) Plans Reflecting 1990 Plan Year Experience (Chicago: PSCA, 1991), p. 11. 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.

44. U.S. Bureau of Labor Statistics, Employee Benefits in Medium and Large Firms, 1986, bulletin 2363 (Washington: GPO, 1990), p. 111.

45. Daniel J.B. Mitchell, "Shifting Norms in Wage Determination," Brookings Papers on Economic Activity (2:1985), pp. 575-599.

46. Daniel J.B. Mitchell, "The Share Economy and Industrial Relations: An Overview of the Weitzman Proposal," Industrial Relations, vol. 26 (Winter 1987), pp. 1-17.

47. 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.

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

49. George A. Akerlof, "Labor Contracts as Partial Gift Exchanges," Quarterly Journal of Economics, vol. 97 (November 1982), pp. 543-569. There is a potential conflict between the gift view of profit sharing and the Weitzman argument for macroeconomic benefits. Part of Weitzman's argument -- as will be discussed in a later chapter -- depends on the firm reducing the wage and substituting the profit sharing bonus.

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

51. Douglas L. Kruse and Martin L. Weitzman, "Profit Sharing and Productivity" in Alan S. Blinder, ed., Paying for Productivity: A Look at the Evidence (Washington: Brookings Institution, 1990), pp. 95-140.

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

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

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

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

56. Some empirical evidence in support of this proposition can be found in Douglas Kruse, "Profit Sharing in the 1980s: Disguised Wages or a Fundamentally Different Form of Compensation?" in Randall Eberts and Erica Groshen, eds., Structural Changes in U.S. Labor Markets: Causes and Consequences (Armonk, N.Y.: M.E. Sharpe, 1991), pp. 67-99.

57. David Levine, "Efficiency Wages in Weitzman's Share Economy," Industrial Relations, vol. 23 (Fall 1989), pp. 321-334. The efficiency wage concept is discussed in the next chapter.

58. Louis Kelso, The Capitalist Manifesto (New York: Random House, 1958). Kelso authored or co-authored a series of books thereafter. The most last was Louis O. Kelso and Patricia Hetter Kelso, Democracy and Economic Power: Extending the ESOP Revolution (Cambridge, Mass.: Ballinger Publishing Co., 1986). In it the authors argued for all manner of stock ownership arrangements under such names as MUSOP, CSOP, GSOP, ICOP, COMCOP, and PUBCOP and proclaimed that "it is time that we do for economic power what the founding fathers did for political power; put it on the road to democracy." (p. 9)

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

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

61. Pension programs, and other forms of employee benefits, are discussed in a later chapter.

62. Unfortunately, consistent data on ESOPs is lacking. The data source underlying Table 5 reports a higher number of ESOP-covered workers than seems consistent with the government estimates of Table 4.

63. Myron S. Scholes and Mark A. Wolfson, "Employee Stock Ownership Plans and Corporate Restructuring: Myths and Realities," Financial Management, vol. 19 (Spring 1990), pp. 12-28, especially pp. 24-26.

64. ESOP Association, ESOP Survey, 1989 (Washington: ESOP Association, 1989), p. 2.

65. Joseph Raphael Blasi and Douglas Lynn Kruse, The New Owners: The Mass Emergence of Employee Ownership in Public Companies and What It Means to American Business (New York: HarperBusiness, 1991), p. 13.

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

67. Joseph Raphael Blasi and Douglas Lynn Kruse, The New Owners: The Mass Emergence of Employee Ownership in Public Companies and What it Means to American Business (New York: HarperBusiness, 1991). It might be noted that Blasi and Kruse include forms of stock ownership apart from ESOPs. For example, they include ownership of company stock by conventional pension plans. (Although pensions are not allowed to put a substantial fraction of their assets in the stock of their company - for reasons of portfolio balance - they can put some company stock in the pension fund).

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

69. U.S. General Accounting Office, Employee Stock Ownership Plans: Little Evidence of Effects on Corporate Performance, GAO/PEMD-88-1 (Washington: GAO, 1987).

70. 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.

71. It is possible to imagine ESOPs with different structures than those currently in use. For example, it has been proposed that ESOPs could issue shares to workers that were contingent on continued employment. See J.E. Meade, Alternative Systems of Business Organization and of Workers' Remuneration (Boston: Allen & Unwin, 1986), pp. 115-119.

72. For a review of the research issues, see Ronald G. Ehrenberg and George T. Milkovich, "Compensation and Firm Performance" in Morris M. Kleiner, Richard N. Block, Myron Roomkin, and Sidney W. Salsburg, eds., Human Resources and the Performance of the Firm (Madison: Wisc.: IRRA, 1987), pp. 87-122. Another useful review is Barry Gerhart, George T. Milkovich, and Brian Murray, "Pay, Performance, and Participation" in David Lewin, Olivia S. Mitchell, and Peter D. Sherer, eds., Research Frontiers in Industrial Relations and Human Resources (Madison: IRRA, 1992), pp. 193-238.