THE DESIGN OF A FEDERAL EMPLOYMENT PROGRAM IN A STRATEGY TO RAISE LOW EARNINGS

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In this paper, the author proposes a two-pronged strategy to raise low earnings, consisting of an increase and extension of the Federal minimum wage, and job creation induced by a Federal employment program. After comparing this strategy to prominent alternatives, he focuses on the design of the Federal employment program. He discusses the maintenance of effort problem, close vs. open-ended grants, substitution and lay-off bias among employees, private vs. public sector, direct vs. indirect supervision, subsidizing work vs. training, and other issues that affect the design. He then discusses current programs, and major proposals. Concluding that these have important weaknesses, he proposes an Employment Incentive Program (EIP) that he believes will reduce, though not eliminate, the difficulties, and thus represent an improvement over the available alternatives.

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INTRODUCTION

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"The Design of a Federal Employment Program in a Strategy to Raise Low Earnings," by Laurence S. Seidman is one of the reports submitted to the Manpower Administration of the U.S. Department of Labor by members of a research group at Berkeley concerned with the design and impact of public service employment programs. We use the term "public service employment program" to refer to any policy designed to combat urban poverty through use of Federal subsidies to increase employment of disadvantaged workers.

In this paper, the author proposes a two-pronged strategy to raise low earnings, consisting of an increase and extension of the Federal minimum wage, and job creation induced by a Federal employment program. After comparing this strategy to prominent alternatives, he focuses on the design of the Federal employment program. He discusses the maintenance of effort problem, closed vs. open-ended grants, substitution and layoff bias among employees, private vs. public sector, direct vs. indirect supervision, subsidizing work vs. training, and other issues that affect the design. He then discusses current programs, and major proposals. Concluding that these have important weaknesses, he proposes an Employment Incentive Program (EIP) that he believes will reduce, though not eliminate, the difficulties, and thus represent an improvement over the available alternatives.

Readers interested in other aspects of public employment programs may wish to consult some or all of the other project reports. These include:

"The Effect of Legitimate Opportunities on the Probability of Parolee Recidivism," by Philip Cook

"The Inflationary Effects of Public Service Employment," by Philip Cook and Robert Frank

"Public Service Employment and the Supply of Labor to the Private Sector," by Robert Frank

"The Public Employment Program in San Francisco," by Michael Wiseman

"An Expanded Public Service Employment Program: Some Demand and Supply Considerations," by Frank Levy and Michael Wiseman

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A two-pronged strategy to raise low earnings is proposed. The strategy is aimed at the half of all low-income households in which the head is capable of full-time work. It must be supplemented by transfer programs to households incapable of earning their income. The strategy consists of raising the Federal minimum wage to a relatively high level (roughly $2.40 for the year 1973) and extending its coverage to nearly all workers; and then offsetting the unemployment effect of such a policy by creating additional above-minimum wage jobs through a Federal employment program. A very rough estimate is that the Federal employment program would have to induce the creation of a maximum of two million additional jobs, and that this could be done for about $8 billion.

This high minimum wage strategy (HMW) is compared with the three prominent alternatives: a wage or earnings supplement plan (ES); the negative income tax or demogrant (NIT): and a guaranteed job option for heads of households at a high wage that forces employers to match the wage in order to retain heads (GJO). The efficiencies of all four approaches are shown to be comparable, but other aspects differ significantly. It is argued that both the low wage worker and the general public are likely to prefer the HMW strategy to the alternatives.

The aim of the Federal employment program is to induce additional above-minimum wage employment, at a given level of aggregate demand, and therefore, inflationary pressure. If there is slack in the economy, standard tools are readily available. The program must provide a special stimulus to employment. This can only be achieved by effectively reducing the wage cost of truly additional labor to producers, by subsidizing such employment. Producers will use more above-minimum wage labor, for a given level of demand.

Any Federal employment program must come to grips with the fundamental problem of maintenance of effort. Whenever the Federal government tries to induce independent agents, public or private, to do more of what they are already doing, it becomes difficult to prevent these agents from simply applying Federal funds to what they would have done anyway. Current maintenance of effort regulations are shown to be ineffective. While the maintenance of effort problem is widely acknowledged, its ability to completely undermine Federal grant programs is widely underestimated. It is argued that many Federal grant programs are probably not accomplishing their objective because of this problem. An alternative approach to maintenance of effort is proposed. While no claim is made that it eliminates the difficulties, it offers promise of reducing them. It is argued that an open-ended design together with the new approach to maintenance of effort is necessary if the Federal employment program is to accomplish its objective. While an open-ended design means that each employer is free to try to earn as much subsidy as he can, it does not mean that costs cannot be controlled. Congress can decide what it wants to spend on the program, and then set the subsidy rate so that employers earn approximately the desired amount.

A central problem for a Federal employment program, closely related to maintenance of effort, is the incentive for employers to substitute subsidized for unsubsidized persons, and to layoff unsubsidized rather than subsidized employees whenever employment must be reduced. The simplest solution is to apply the subsidy to all persons who hold non-supervisory jobs. Nevertheless, in an effort to give special assistance to particular groups, nearly all current and proposed programs apply subsidy to only a subcategory of all persons. It is shown that this inevitably leads to serious inequities, and administrative problems.

The Federal employment program must decide whether to include only public employers, only non-profit employers, only the private sector, or all employers. Both Treasury and economic efficiency require inclusion of all employers. Inclusion of profit-seeking employers, however, will cause significant benefits to accrue to owners and managers of business. The best solution is to include all sectors, but to try to recapture this private windfall by

tying an appropriate tax to the program. If this is not possible, a tradeoff between efficiency and progressivity must be faced.

Whether the program can be supervised indirectly, like the tax system, or requires direct supervision, is of great importance. So is the cost to producers of participating in the program, which is determined by the supervision involved. Paying for on-the-job training costs, instead of work, is shown to lead to direct supervision, as well as other inefficiencies.

Current programs and prominant alternatives are compared. The important features of the Public Employment Program (PEP), Job Opportunities in the Business Sector (JOBS), and the WIN tax credit, are analyzed. Two proposals -- tax credits to train the unemployed, and an upgrade program -- are also considered. It is shown that the fundamental problems discussed earlier create serious difficulties for these programs.

Finally, a new proposal is offered: an Employment Incentive Program (EIP). While EIP is not able to eliminate all problems, it is designed to reduce them. Under EIP, employers would be subsidized for having a surplus of non-supervisory employees above a maintenance of effort norm. EIP would use the new approach to maintenance of effort, and an open-ended design. No distinction would be made between employees, so the problems of substitution and layoff bias among employees would be eliminated. Supervision would be indirect, like the tax system. EIP could be restricted to the public, or non-profit sector, or it could be applied to all producers in the economy.

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I. A STRATEGY TO RAISE LOW EARNINGS

In 1971, 5.3 million families had income below the official poverty or low-income level.[1] In about half of these families, the head did not work at all in 1971.[2] Most, though not all, of these family heads were elderly, ill or disabled, or responsible for young children.[3] The low income of these families must be treated by a transfer program unrelated to work, and perhaps child care if this is deemed desirable. Here, we will focus exclusively on how to assist the more than half of all poor families in which the head is capable of work.

A fact of great significance for policy is that of these 2.8 million family heads who worked at all in 1971, 1.1 million or roughly 40% worked year-round, 50-52 weeks, at a full-time job.[4] For these persons, only a higher wage could have raised their annual earnings. An additional 0.2 million worked 40-49 weeks at a full-time job. While the elimination of unemployment could have helped this group, a higher wage would have been equally important. For the remaining half of these 2.8 million, increased full-time employment is the most urgent need, but even these persons would benefit from a higher wage.

Thus, the following central fact emerges: Over one-fifth of all poor families (1.1 million) were headed by someone who worked full-time, 50-52 weeks, and about one-fourth (1.3 million) were headed by someone who worked full-time, at least 40 weeks.

If these 1.1 million families were large, then they would be classified as poor, even though the wage earned was fairly high. This is not the case, however. The mean size of a poor family was only 3.85 persons in 1971, only a bit larger than the 3.50 mean for non-poverty families.[5] On the average, the poverty threshold for these families was roughly $4,000 in 1971, implying a maximum hourly wage of $2.00 for 50 weeks of full-time work.[6] The average hourly wage of the family head would be less if the family received income

other than from the head's earnings. In about 40% of the 1.1 million families, there were two or more earners.[7] Thus, it is likely that most of these family heads earned an average wage of less than $2.00 in 1971.

The following conclusion can be drawn: Over one-fifth of all poverty is caused, not by non-employment or part-time employment, but by a low wage in spite of full-time, year-round work. Furthermore, a low wage is a major cause of over a fourth of poverty.

1. The High Minimum Wage Strategy (HMW)

In 1973, at any point in time roughly 15 million persons hold jobs that pay less than $2.40 an hour.[8] Of the 15 million, roughly 2.2 million are poor family heads.[9] Unfortunately, the composition of the rest of the 15 million must be estimated indirectly, since the 15 million figure is derived from an establishment survey in which employee characteristics were not obtained. A fraction of these are heads of families with income just sufficient to lift them above the official poverty level. As noted above, on the average any year-round, full-time worker who earned more than about $2.13 (adjusting the $2.00 wage in 1971 for the advance in the Consumer Price Index) in 1973 would lift his family out of official poverty.[10] Even if all employed teenagers work for less than $2.40, this would not exceed 6 million, the number of employed teenagers at any point in time.[11] An important fraction of teenagers and second earners are members of poor or near poor households.

If the Federal minimum wage were set at $2.40 in 1973 and extended to cover nearly all workers, then the great majority of the 15 million would remain employed and improve their earnings. Since the average wage of the 15 million is about $2.10, annual earnings would increase about $600, or 15%.[12] Some fraction of the 15 million, however, would become unemployed because of the higher minimum wage. While reliable estimates are not available, it is probably pessimistic to assume that employment would be reduced as much as 2 million. This would imply that a one-seventh increase in the wage, from $2.10 to $2.40, would reduce employment by roughly one-seventh (2 out of 15 million), or an elasticity of demand for labor in the below-$2.40 sector of unity.[13]

This potential unemployment effect usually limits the raising and extending of the minimum wage. Suppose, however, that a Federal employment program could be designed that would induce an increase in employment in the above-$2.40 sector of approximately 2 million. The aim would be to induce an increase in the level of above-$2.40 non-supervisory employment from its current 45 million, to about 47 million.[14] The most attractive 2 million of the 15 million would move into these jobs, and 13 million would remain in their current jobs at the new minimum wage of $2.40. The 2 million new jobs must be non-supervisory (a convenient classification) if they are to match the skills of the 2 million likely to shift.

The two-part strategy of the high (and extensive) minimum wage and the Federal employment program, which will be referred to as the HMW strategy, would seek to shift the size of the two sectors from 15-45 to 13-47, for a given level of aggregate demand, and therefore, inflationary pressure. The Federal program would attempt to induce employers to use more above-$2.40 non-supervisory labor relative to other inputs, for a given product demand. Whether this can in practice be accomplished is the subject of the analysis that follows. Here, the consequences of finding a way to do this will be set out.

An expansion from 45 to 47 million is roughly a 4% increase. If the elasticity of demand for labor in the above-$2.40 sector were unity, this expansion could be induced by subsidizing additional high wage jobs by only 4% of the wage. Since reliable estimates of employer response to wage cuts via a subsidy program are unavailable, let us assume, farly cautiously, that to induce an increase of 4% requires a wage cut of, say, 33%. This means that the elasticity of demand for labor in the over-$2.40 sector is less than 0.2.[15] It should be recognized that since the Federal employment program should be permanent, it is the long-run response, allowing sufficient time for adjusting capital, that is relevant, and is assumed to be at least 0.2. Since the average wage in the over-$2.40 sector is about $3.00, the average subsidy required is $1.00, or annually, $2,000 per employee, though the subsidy must be set higher in regions where the unemployment effect of the minimum wage will be relatively large (i.e. the South), and lower, where the effect will be relatively small.[16]

If the subsidy can be confined to truly additional employees, the cost of the program would be $4 billion (2 million employees at $2,000 per employee). As will be discussed later, no program will be able to prevent paying for a significant number of persons who would have been employed anyway. Later it will be shown that it may be possible to keep this leakage from more than doubling the cost of the program. If the absorption of the 2 million can be achieved for roughly $8 billion, then the HMW strategy will have an anti-poverty efficiency comparable to that of the three prominent alternatives: the wage or earnings supplement; the negative income tax or demogrant; and the raising of the wage of heads of households by guaranteeing them a job at an above poverty wage, thus forcing employers to match that wage in order to retain them.

The HMW strategy will be compared to each of the three alternatives shortly. Here, some arithmetic will illustrate why anti-poverty efficiency is likely to be comparable. Under the HMW strategy, an expenditure of roughly $8 billion, using probably pessimistic assumptions, will raise the earnings of the 15 million by roughly $11.4 billion. The 13 million who remain in the same job increase their earnings an average of $.30 an hour or $600 a year, for a total increase of $7.8 billion. The 2 million who move into better jobs in the above-$2.40 sector increase their earnings an average of $.90 an hour, or $1,800 a year, for a total increase of $3.6 billion. Thus, for each $1 of Federal expenditure, the earnings of low-wage persons increases by more than $1. This contrasts with the negative income tax or demogrant (hereafter referred to as NIT) in which $1 of Federal expenditure leads to $1 increase in income (assuming there is no reduction in work effort). It contrasts with a wage or earnings supplement (hereafter referred to as ES) in which $1 of Federal spending can at best raise income $1, and will probably raise it less than $1, since as a result of the supplement, the pre-supplement wage may fall.[17]

While HMW is likely to be more efficient in raising the earnings of all 15 million, it must be remembered that NIT and ES are able to target Federal expenditure on poor, or near poor, heads of households among the 15 million.

There are a little over 2 million officially poor family heads, and perhaps 3 million near-poor heads. A significant fraction of the non-heads, however, are members of poor or near-poor families. Thus, while NIT and ES may have the edge on strictly anti-poverty efficiency, HMW should do as well in assisting all relatively low-income families. It should also be recognized that most of the 2 million raised to an average of $3.00 an hour, instead of $2.40, will be heads of households, since they are likely to be most attractive to high wage employers.

The wage of household heads can be raised by guaranteeing them the option of working at an above poverty wage. Under this strategy (hereafter referred to as GJO), suppose all heads have the option to work at $2.40. Employers will have to raise their wage, in general, to at least $2.40 to retain them. Some employers will find it worthwhile to do so, even if they must raise the wage of non-heads doing the same work as a result. Others will find it worthwhile, only if they can manage to pay heads more than non-heads who do the same work. Finally, others will prefer to substitute non-heads, rather than raise the wage to $2.40. No reliable estimate of their response is available. If the employers choose to retain less than 3 million of the roughly 5 million heads out of the 15 million, then more than 2 million jobs will have to be created to implement the guarantee. This will make GJO less efficient than HMW, where 2 million jobs must be created in order to raise all 5 million heads to at least $2.40.

The essence of the HMW strategy is that the bulk of the work is done by the Fair Labor Standards Act, at virtually no cost to the Federal treasury. The minimum wage raises the earnings of 13 of the 15 million. Federal funds are concentrated on creating employment for 2 million. This is similar to GJO in that Federal funds are not spent on each person aided, but only on the fraction of beneficiaries who need new jobs. In contrast, NIT and ES both require Federal expenditure for every person aided. HMW funds a relatively small number of jobs, at a relatively high cost per job; NIT and ES fund a relatively large number of persons, but at a smaller cost per person. The arithmetic suggests that Treasury efficiency should be comparable.

The HMW strategy involves two essential components. If the minimum wage alone were raised, then significant unemployment would eventually occur. On the other hand, without the minimum wage, spending $8 billion to help only 2 million might be less desirable than doing something for all 15 million, and in particular, all 5 million heads of households.

It is important to review the elements that will determine the cost of HMW. First, in response to the subsidy, employers may bid up the wage as they compete for new employees. If the subsidy of $1 causes the wage to rise $.25, the wage to employers has only been reduced $.75. The wage will only rise if the supply of labor to high wage employers is not very elastic. As will be shown shortly, there is strong evidence to support the view that the supply of labor to the high wage sector is often artificially restricted. If this is so, then the supply of labor is effectively elastic at the going wage. Furthermore, the existence of unemployment tends to make the supply of labor elastic. Since wages in the high wage sector should therefore not have to be raised to call forth additional employees, it is not likely that the wage will be bid up as a result of the Federal employment program. Any rise in the wage would partially offset the subsidy, and raise the cost of creating a given number of jobs.

Second, employers respond to the net, rather than the gross, subsidy per job. It must be recognized that the gross subsidy will exceed the net if the employer incurs a cost just to participate in the program. This participation cost will be determined by the method of administration and degree of supervision. The greater the participation cost, the greater the cost of inducing a given number of jobs.

Third, the long-run elasticities of demand for labor in the above-minimum wage and below-minimum wage sectors are of course of central importance. The lower the elasticity of demand in the low wage sector, the less will be the unemployment effect of raising the minimum wage, and the less the number of jobs that will have to be created. The higher the elasticity of demand in the high wage sector, the smaller the subsidy required to induce the creation of a given number of additional jobs. Because the Federal em-

ployment program should be permanent, what counts is the response when adequate time is allowed for the adjustment of physical capital, technology, and production processes. Thus, the long-run elasticity is the relevant one.

Fourth, leakage can raise the cost of the program. It will be shown that for each genuinely additional job funded, it is inevitable that jobs that would have existed anyway will also be funded. The size of the leakage depends on the effectiveness of maintenance of effort standards. This fundamental problem will be analyzed later.

Finally, the size of the base that must absorb the additional employees will affect cost. If all producers in the economy are eligible for subsidy, then 2 million will be added to the 45 million non-supervisory employees in all sectors--only a 4% increase. If the Federal employment program is restricted to the public sector, however, then the 2 million will be added to a base of only about 8 or 9 million--a more than 20% increase. A much larger subsidy per job will be needed to induce a 20% increase than a 4% increase. Thus, the greater the non-supervisory employment of all producers included in the program, the lower will be the cost of the program.

2. Economic Efficiency and Impact of HMW

While this strategy may be efficient for the Federal treasury, its efficiency for the economy is a separate issue. The shift of workers from low wage to high wage jobs will increase national output, and therefore be economically efficient, if the cost of upgrading is less than the increase in productivity. This will be the case if the size of the high wage sector results, not from the free market, but from restrictions such as union bargaining. On the other hand, if the wage differential reflects a free market equilibrium, this implies that the cost of upgrading outweighs the increase in productivity, and the shift will reduce the value of national output.

Under a free labor market, a wage differential cannot be sustained as long as high wage employers find it profitable to hire low-wage workers at an intermediate wage. This will be the case as long as the net productivity (gross productivity minus the cost of upgrading) of the low-wage worker will

increase if he shifts to the high wage job. If so, the employer will offer an intermediate wage, and the worker will be glad to shift, thereby narrowing the wage differential. The differential can be sustained, however, if for all low-wage (or unemployed) workers, net productivity would decrease. If the cost of training the person exceeded the differential, net productivity would decrease if he shifted. The high wage employer could not offer him a wage above his current level, and the differential would be stable, without restrictions.

Even if a shift would increase net productivity, a wage differential can be sustained by restricting wage competition in the high wage sector. If individual workers cannot be hired at an intermediate wage, despite the profitability of doing so, then the differential will remain. Union bargaining is, of course, the primary method of limiting wage competition. Union bargaining results in a smaller high wage sector, and a larger low wage sector, than would occur under a free labor market and an efficient allocation of labor.

While both explanations of the wage differential have merit, it seems certain that restrictions and union bargaining are quite important. Within the same occupation, requiring roughly the same skill and education, there is substantial variation in earnings, even within the same labor market area. Under a free labor market, we would expect persons in the same occupation, having similar skill and education, to have similar earnings. If certain employers paid some members of the occupation a higher wage, other members would offer to work for less. Since their skills are the same, these employers would find it profitable to hire them at an intermediate wage, and the wage would be competed down until it was roughly equalized for all members of the occupation with similar skills. Yet, the actual size of differentials within the same occupation seems too large to support the free market explanation.

Consider the table presented on the following page showing data from a BLS report.[18] Some of the spread in earnings is accounted for by regional differences, or even differences among labor market areas within a single

region. Nevertheless, data on regional differences provided by the same report shows this cannot account for much of the variation in earnings. For

U.S. 1970

Negro Males (year-round, full-time workers)	Median Income	Under $3,000	$3,000 $4,999	$5,000 $6,999	$7,000 $9,999	Over $10,000
Operatives (46%) Union	$7,512	1.5%	17.1%	24.1%	42.9%	14.4%
(54%) Non-union	$5,493	6.3%	35.5%	33.2%	20.6%	4.5%
Non-farm Laborers (36%) Union	$7,192	1.4%	18.3%	27.6%	42.4%	10.3%
(64%) Non-union	$4,690	16.5%	39.5%	27.4%	11.5%	5.2%

example, even the earnings of the median union member in the South, the poorest region ($7.942 for all male union operatives) exceeds the earnings of the median non-union operatives in the most affluent region, the North Central ($7,380).

While the source of wage differentials is obviously complex, this brief analysis suggests that it is just as likely that the minimum wage-Federal employment program strategy will increase economic efficiency as that it will decrease it. The strategy may improve efficiency by undoing the effects of the restrictions, and more closely approximating the allocation between the wage sectors that would have occurred under a free market. It achieves this by subsidizing the wage in the high wage sector, so that these employers face

the lower wage cost that would have emerged under wage competition. The subsidy undoes the misallocation of labor among sectors without undermining the higher wage that results from the union restrictions.

The effect of this strategy on prices is also important. Output of industries with a relatively high concentration of low wage jobs will decrease and prices, increase; conversely, output of industries with a relatively high concentration of high wage jobs will increase, and prices will eventually be less than they would have been. With aggregate demand constant, the average price level should remain the same, unless the introduction of the strategy sets off a round of administered, cost-push inflation. In the current inflationary climate, this will probably occur, to some extent. While prices in the low wage industries are sure to go up, it is less certain that prices in the high wage sector will be altered.

There will also be some tendency for the high wage workers to try to retain the differential, in response to the increase in the minimum wage. It is sometimes assumed that they will automatically be able to do so. In firms where both low and high wage workers are employed, there may well be pressure to restore some of the differential, at least for the lowest paid of the above-minimum wage workers. There are a significant number of high wage firms, however, where few or no workers will be affected by the minimum wage increase. The assertion that employees in these firms will succeed in restoring most or all of the differential rests on the belief that prior to the increase in the minimum wage, worker demand for an increase was less, and employer resistance greater.

There is no reason to expect employer resistance to decline, since an increase after the minimum wage increase will have the same effect on profits (unless low wage competition is important in the industry, and the higher minimum wage has offered protection). If high wage workers now become willing to strike for a higher wage, while previously they were unwilling to do so, this would alter the balance. It is not clear, a priori, that this will occur. These points are not intended to deny that there will be a tendency to partially restore the differential; but only to show that such a process is not

automatic, and will encounter resistance. Past increases in the minimum wage have successfully narrowed the differential in the short-run. While the differential is usually restored over several years, this can be explained by rising productivity, (i.e. the minimum wage falling behind again) rather than a reaction to the higher minimum wage. The issue must be decided on the basis of careful empirical study.

Even if there is a short-run inflationary effect, the strategy aims at a once-and-for-all shift in the size of the two sectors. Thereafter, the economy will grow in these proportions with no further price effects. Public policy must weigh the costs of additional inflation in the short-run against a permanent shift in the distribution of income in favor of the working poor. One of the major costs of inflation is that it redistributes income randomly, and often inequitably. If it is considered desirable to increase the income of the working poor, the short-run inflationary effect that accompanies such a shift may be considered worth incurring.

3. The Problem of Teenage Unemployment

The above strategy, involving the raising and extending of the minimum wage, comes at a time when a subminimum wage for teenagers is being seriously considered, and when teenage unemployment is given as a reason to slow the advance of the minimum wage. An increase and extension of the minimum wage, without supplementary policy, will undoubtedly increase teenage employment.

A trade-off must be squarely faced. There is a direct conflict between the goal of reducing poverty, and the goal of reducing teenage unemployment. A subminimum wage for teenagers will reduce the wages, or employment, of low-skilled adult workers--the very persons most likely to head poor families. Although I have seen quite a few studies of the effect of the minimum wage on teenage unemployment, I have not seen any estimate of the effect of the subminimum wage on low-skilled, adult unemployment. Yet it seems likely that the effect would be serious. Few employers would try to replace highly skilled adults with teenagers, regardless of the wage advantage. On the other hand, most poor family heads hold jobs requiring little training or experience. It is precisely these jobs for which employers should often find substitution profitable. A policy that might seriously harm poor heads of households is not likely to be the best of the available alternatives.

The effect of a low minimum, or subminimum wage on teenagers is mixed. While about 1 million teenagers were unemployed at a point in time in 1972, about 6 million were employed.[19] While a subminimum wage will help the 1 million, it will hurt the 6 million, many of whom are paid close to the legal minimum. While redistributions from the 6 million to the 1 million might be supported, the loss must be recognized as well as the gain.

Consider a choice between four policies. Under the first, the minimum wage is set at $2.40 for all adults, but a subminimum wage of $2.00 is set for teenagers. Under the second, the minimum wage is set for everyone at $2.00, without any complementary anti-poverty program. Under the third, the minimum wage is set for everyone at $2.00, and either NIT, ES, or GJO is used to raise incomes. Under the fourth, the minimum wage is set at $2.40 for everyone, and employment is maintained by the Federal employment program, and a special Federal job program for teenagers.

The first approach involves the risk of significant substitution of teenagers for low-skilled adults, among whom are most poor family heads. The inequity of such substitution is likely to outweigh any gains achieved. The second approach eliminates the incentive for substitution. The lower minimum wage, however, means that the earnings of 13 million persons will be about $5 billion less than it would be at a $2.40 minimum wage (under the current $1.60 minimum, the average wage of the 13 million is $2.10; under a $2.00 minimum, the average would be about $2.20; this is $.20 an hour less than under the $2.40 minimum). The annual earnings of the over 1 million poor family heads who work year-round, full-time will average $400, or 10% less. Under the third approach, the lower minimum wage would be offset by either NIT, ES, or GJO. Each will be compared to HMW shortly.

Under HMW, incomes would be higher for the 13 million due to the $2.40 minimum wage, and employment would be maintained by the Federal employment program, and a special Federal job program for teenagers. Earlier it was estimated that offsetting the reduction in employment from the shift from $1.60 to $2.40 should not cost more than $8 billion. Offsetting a shift from $2.00

to $2.40 should not cost more than $5 or $6 billion. While the burden for maintaining employment could be placed solely on the regular Federal employment program, special concern for teenagers would justify supplementing that program with a special teenage job program. This would insure that teenagers were as well off under this appraoch as under competing alternatives.

Suppose a $2.40 minimum cuts employment 1.2 million compared to a $2.00 minimum (earlier it was assumed that the reduction was 2 million compared to a $1.60 minimum wage). While the regular Federal employment program can attempt to create 1.2 million additional jobs, there may be concern that teenagers will get too small a share without special earmarking of funds. If so, the Federal employment program could create, say, 1.0 million jobs, and an improved Neighborhood Youth Corps (or a better alternative) could create 200,000 jobs earmarked for teenagers. In either case, the cost would be about $5 or $6 billion.

If it is desired to reduce the level of teenage unemployment, or unemployment in general, the Federal employment program can be increased so that it more than offsets the effect of the higher minimum wage, and achieves a net reduction in unemployment. Which stragety is chosen--HMW, NIT, ES, or GJO--depends on other aspects of each strategy besides Treasury efficiency. It is essential, therefore, to compare the most important aspects of each of these with HMW.

4. Comparison With a Wage or Earnings Supplement Plan (ES)

As an alternative to the Family Assistance Plan, the Senate Finance Committee offered a proposal that included a wage supplement for family heads who earn less than the minimum wage, and an earnings bonus for families whose annual earnings are less than some break-even level.[20] Robert Haveman has proposed an earnings subsidy that modifies the Committee's plan.[21] Detailed analysis cannot be pursued here, and only the most important aspects will be highlighted.

Under the HMW strategy, the minimum wage raises the earnings of the vast majority of low wage workers, with virtually no cost to the Federal treasury; Federal funds are spent to create employment to offset any reduction in jobs

induced by the high and extensive minimum wage. Under the supplement plan, the minimum wage is set lower, so there is no reduction in jobs; Federal funds are spent to raise the earnings of low wage persons. Supplement is concentrated on family heads, or families, increasing the anti-poverty effectiveness of the Federal expenditure. The number of jobs that are needed to offset the high minimum wage will be less than the number of family heads aided by the supplement plan. On the other hand, each job will require a greater expense (especially when leakage is considered) than each family head aided. As a result, it is difficult to know which strategy will have a greater anti-low-income efficiency, but the supplement plan is likely to have the edge.

Under the HMW strategy, assume that the 15 million below $2.40 can be raised to at least that level--13 million to $2.40 and 2 million to $3.00--for an expenditure of $8 billion, assuming leakage doubles the cost of the program. Of the 15 million, somewhat more than 2 million are officially poor family heads, and perhaps 3 million others are heads of low income families. Assume 2 of the 5 million are raised to $3.00, since family heads are most likely to get these jobs. Then 3 million have their annual earnings raised $600 per head, and 2 million, $1,800 per head, since their average wage is $2.10. Under the supplement plan, assume the pre-supplement wage falls to $2.00 as a result of the supplement (the pre-supplement wage will fall as long as there is some elasticity to the supply of labor). Then to raise 3 million to $2.40 will cost $2.4 billion, and 2 million to $3.00 will cost $4.0 billion, or $6.4 billion, which compares favorably with $8 billion for the HMW strategy. It should be stressed that the assumptions that must be made to cost out each strategy leave significant uncertainty in the result. The most that can be said is that the treasury efficiencies may be comparable, and more precise estimation is required to know which is likely to do better.

While the cost comparison is uncertain, other differences are more definite. Perhaps the most important is this: under the HMW strategy, low wage competition is significantly reduced; under the supplement plan, low wage competition is increased. In his exposition, Haveman devotes a section to the effect of a supplement plan on the national wage structure. He writes:[22]

> In this context, it seems unlikely that the demand for higher skill workers and the prevailing wage paid them would be greatly undermined by the wage-subsidy provision of the program. This erosion can occur only if employers can easily substitute low for high skill workers in response to a change in relative prices. Such substitution is difficult given the influence of labor organizations and the industrial coverage of the minimum wage.

Haveman focuses his analysis on the possibilities for substitution within a single firm between high and low skilled labor, and correctly concludes that this should be limited. He does not address, however, the effect on competition between low wage and high wage firms in the same industry, and specifically on the workers in the high wage firms. It is union workers in relatively high wage textile plants who vigorously support the raising of the minimum wage, in order to reduce competition from low wage, non-union textile plants. In contrast, the supplement plan will reduce the wage cost to low wage employers. High wage employers will have to lower prices and wages, or reduce their sales and thus employment. The reality of this competition is testified to by the strong support for the raising and extending of the minimum wage by relatively high wage unions in industries with low wage non-union competition. Whether one feels such competition is good or bad, the opposite effects of the two strategies should be clearly recognized.

A second difference is the attitude of recipients and the public towards the minimum wage and supplements. The minimum wage is usually regarded as a protection against exploitation for workers with low skill lacking union protection. The wage protected by the law is regarded by most, particularly the recipient, as a wage he is entitled to, and that he has earned. A supplement, however, is usually regarded as unearned, since it does not come from the employer. In fact, the payment from the employer will be lower. The recipient may well resent his low wage, and regard the supplement as a form of welfare. The public is likely to resent bearing a burden it believes the low wage employer should be bearing. This will be particularly true if it is understood that low wage employers will have a lower wage cost as a result of the supplement, and even additional profits.

Third, under the supplement plan, all family heads aided remain in the same jobs. While their hourly income improves, nothing else changes. In contrast, under the HMW strategy, Federal funds are spent on inducing relatively high wage employment, offering opportunities for training and movement up the job ladder, union protection, and so on. In the above example, perhaps 2 out of the 5 million will move into better jobs.

Finally, under the supplement plan, additional profits are earned by low wage employers. Under the HMW strategy, subsidy goes to employers of all non-supervisory employees, no matter how high their wage, as long as they meet the standards of the high minimum wage. Employers who pay low wages will not benefit under HMW.

5. Comparison With the Negative Income Tax or Demogrant (NIT)

The negative income tax or demogrant plan is likely to be more efficient than either ES or HMW.[23] Unlike ES, there is no reason to expect the wage earned to be reduced. Once again, the efficiencies cannot be compared with certainty. Other aspects, however, are certain.

Under NIT, persons receive the maximum net transfer from the government if their earnings are zero. As their earnings increase, the net transfer decreases until it reaches zero at the break-even level of earnings. As is well known, the NIT therefore reduces the reward from work. Each additional hour of work at a job paying $2.40 an hour will increase the income of the person significantly less than $2.40. Most NIT schemes reduce the hourly reward to less than 50% of the wage. Whether the high marginal tax rate will reduce work effort is uncertain.

The low wage worker who is willing to work is likely to prefer the Fair Labor Standards Act to the NIT. He is likely to regard the transfer as a form of welfare, since it is unearned income not paid for by his employer. He may feel the government is aiding him because of his inability to earn a living on his own. While the Fair Labor Standards Act is also a form of governmental assistance, he does not regard it as a handout, but as a means of forcing his employer to give him his due. It protects him against exploitation in the absence of a union.

The public is likely to feel the same way. The experience in the last presidential campaign suggests that much of the public regards the NIT as welfare that should not be given to persons capable of work. Even if the NIT limited payments to persons actually working full-time, many would still believe it was the responsibility of employers, not taxpayers, to provide a decent income for workers. Such a highly restricted NIT would, at least, not be accused of giving money to persons unwilling to work. The NIT plans that have been proposed, however, either require only the willingness to register for work or training, or have no work requirement whatsoever. It is well documented, and well known, that many who register for work are never put to the test; therefore, registration does not test the willingness to work.[24] Even if the NIT's high marginal tax rate does not reduce work effort for the majority of recipients, the fact that a minority of able-bodied persons are able to receive transfers without working will be regarded as unfair by much of the public. Unless a guaranteed job program and a tough work requirement are added, the NIT will be unable to assure the public that payments are not being made to able-bodied persons unwilling to work.

In contrast, the minimum wage law has widespread acceptance with the public. The main opposition to the Fair Labor Standards Act comes from employers who are affected. Perhaps the public is less aware of the cost of the minimum wage to the consumer than of the cost of the NIT to the taxpayer. But probably more important is that the public believes that low-skilled workers should be protected from exploitation, and that employees are entitled to minimum standards from their employers.

A final contrast between NIT and HMW focuses on the Federal employment program. The NIT does not improve the job of a single worker. Funds are spent raising the incomes of persons in their current jobs. Under HMW, the Fair Labor Standards Act does this for free to the Treasury, and Federal funds are reserved to subsidize the creation of additional high wage jobs. In the illustration given earlier, 2 million of the 15 million low wage workers would advance to better jobs, averaging $3.00 an hour. Most of these 2 million are likely to be family heads, a significant fraction of the roughly

5 million heads among the 15 million. These 2 million would enter the high wage job ladder, receive union protection, and other fringe benefits.

It should be repeated once again that these contrasts between HMW and NIT apply only to households in which the head is capable of full-time work. All other households must be assisted by some kind of transfer program, such as NIT and cannot benefit from HMW.

6. Comparison With a Guaranteed Job Option (GJO)

It must be emphasized that the issue here is whether GJO is a substitute for a high minimum wage. A job opportunity can be guaranteed under the HMW framework by expanding the size of the Federal employment program, and perhaps supplementing it with residual jobs in special Federal projects. The feasibility of complementing HMW with a guaranteed job program is being evaluated in a forthcoming report by this author. The question here is whether the market wage effect of a GJO should replace a high minimum wage.

Earlier it was noted that even if such a GPO is administratively feasible, it may not be more efficient than HMW, since more jobs may have to be created under GJO than under HMW to get all family heads above $2.40. Under both HMW and GJO, employer must pay family heads at least $2.40 to retain them. Under HMW, employers must also pay non-heads at least $2.40; they have no incentive to substitute non-heads for heads. Under GJO, however, employers will have the option of hiring non-heads at less than $2.40. Less heads will be offered regular jobs at $2.40 under GJO than under HMW, and more jobs will have to be created for heads under GJO. Since GJO will create no jobs for non-heads, unlike HMW, it is hard to tell which would be more efficient.

Implementing a GJO at a relatively high wage like $2.40 would not be easy. Several proposals for a guaranteed job program have unfortunately devoted little attention to how the jobs would be created.[25] Whether this can be successfully done cannot be pursued here. Because a high wage guarantee, particularly in the absence of a high minimum wage, will place a great burden on the guaranteed job program, it is likely that if a GJO is attempted, it will at first be done at a lower wage, as proposed by the Senate Finance Committee.[26] The point here is that there is no need to wait until the especially

difficult administrative problems of a high wage guarantee are solved, and such a GJO is successfully implemented. A Federal employment program less sweeping than a GJO will allow the minimum wage to be raised and extended, achieving the same reduction in poverty for roughly the same cost.

7. The Role of the Fair Labor Standards Act

Under the HMW strategy, the FLSA would set a high minimum wage, and extend its coverage to nearly all workers. Whether coverage should be made completely universal, or some exceptions allowed, is left open. While many of the current exemptions are explained simply by effective lobbying by particular employers, others are the result of a judgment that workers would be laid off, or small businesses would be forced into bankruptcy. If it is desired to preserve or encourage small business, it would be fairer to cut taxes on such businesses rather than exempt them from the minimum wage law.

Nevertheless, it must be recognized that some businesses will be forced to layoff a significant number of workers if a high minimum wage is suddenly applied. Even though the HMW strategy assumes that the Federal employment program is already operating, and additional jobs are available, there is still the problem of transition for the workers laid off.

HMW calls for a significant reduction in exemptions, and staged elimination of those still allowed, so that a time table for universal coverage is established. When such coverage should be completed, however, requires careful consideration of the effects on employees and businesses.

8. The Role of the Federal Employment Program

Although the Federal employment program has been presented as part of a strategy to raise low earnings, it, of course, does not depend on being complemented by a high minimum wage policy. While such a program enables the minimum wage to be pushed that much further, it, of course, directly benefits those who obtain high wage employment as a result of the program, regardless of what is done with the minimum wage. Without the minimum wage, however, such a program is bound to be inefficient as an anti-poverty device compared

to the alternatives. From this viewpoint, such a program could be faulted for concentrating a great deal of money on relatively few low-income persons, while the majority of the working poor go unaided. Only when it is realized that such a program makes it possible to push the minimum wage further, without increasing unemployment, does its anti-poverty efficiency become comparable.

In the rest of this evaluation, the analysis will focus exclusively on the design of such a Federal employment program. While the Federal program is conceived as part of the strategy described above, the discussion will relate only to the design of such a program, and not to the use of the minimum wage. The analysis should therefore be relevant to those who favor a low minimum wage, as well as to those who favor a high minimum wage policy.

II. THE OBJECTIVE OF THE FEDERAL EMPLOYMENT PROGRAM

Before beginning the analysis of the design of the Federal employment program, its purpose must be clearly understood. Its objective is to increase employment above the minimum wage for a given level of aggregate demand, and therefore, inflationary pressure. If there is slack in the economy, employment can easily be increased by expanding aggregate demand through the usual tools of fiscal and monetary policy. Private employment can be increased through tax cuts and an expanded money supply; state and local government employment can be increased by general revenue sharing or other grants; Federal employment can be increased by greater Federal spending on Federal production.

The special challenge of the Federal employment program to be analyzed here is to induce an increase in employment that pays at least the minimum wage without an increase in aggregate demand. It attempts to induce more adequate-wage employment once aggregate demand can no longer be expanded because of the inflation constraint. This can be accomplished by increasing the output of above minimum wage producers, while decreasing the output of previously below minimum wage producers; and by inducing all producers to use more-adequate wage, non-supervisory labor relative to other inputs.

The method of inducing both effects is to subsidize producers to increase such employment. The wage cost of truly additional labor must be effectively reduced to producers. A wage subsidy will reduce the price of labor to employ-

ers as long as the supply of labor is not completely inelastic. If the supply were completely inelastic, producers would simply bid up the wage until the increase offset the subsidy. The supply of labor to the high wage sector, however, should be highly elastic because of the existence of low-wage and unemployed workers, who would be eager to enter the sector at the going wage or less, but who are prevented from doing so by restrictions on wage competition in a significant fraction of the high wage sector. Evidence of such restrictions was cited earlier, in the discussion of the economic efficiency of HMW.

Thus, the subsidy should effectively reduce the cost of labor to relatively high wage producers. The lower costs incurred by high wage producers will enable them to expand output relative to previously below minimum wage producers, whose output will actually contract if a high and extensive minimum wage raises their labor cost. Further, the reduced wage cost will encourage all producers to use more of such labor relative to other inputs. Such shifts in factor proportions will be limited in the short-run, but greater in the long-run when producers are given time to alter their physical capital, and other inputs, in response to the new factor prices they face.

A reduction in the wage cost to employers is required to induce additional employment, even if the additional workers have the same skills and reliability as workers already employed (i.e. even if labor is homogeneous). The subsidy strategy does not depend on whether the program is directed at disadvantaged workers, or all workers. Diminishing returns will cause the marginal productivity of additional employees to decline, even if their skills are the same as current employees. Subsidy is needed to counter diminishing returns, regardless of the quality of additional employees.

It follows that if the increase in employment is to be permanent, the subsidy to additional employment must be permanent. This does not mean that particular employees must be permanently subsidized. It means that whenever subsidy is terminated on one set of employees, subsidy must be applied to an equal number of new hires. Whether the old trainees or employees are retained

once their subsidy ends will not be determined by whether they have mastered their jobs; it will be determined by whether any unsubsidized, regular job slots have opened up. If such vacancies do not occur, then these persons will be laid off when their subsidy ends.

Alternative Federal employment programs designed to treat the problem of low earnings will be judged on their performance under an aggregate demand, or inflation constraint. To the extent they improve earnings and employment simply by increasing aggregate demand, they contribute nothing new to standard policy. If there is slack in the economy, standard tools are readily available. What is needed is a new instrument that will increase employment even after the constraint becomes operative.

If the economy is at its target level of aggregate demand for goods and services, both private and public, then the introduction of the Federal employment program, like any government expenditure, would push the level of aggregate demand beyond its target unless it is offset by an equal reduction in aggregate demand. This can be achieved by an appropriate increase in taxes to finance the program, or a cutback in other government expenditure. The Federal employment program must be judged by whether it induces a net increase in employment, even when it is offset by taxes or cutbacks so that aggregate demand is held constant. If relative factor prices faced by producers in the economy are shifted in favor of non-supervisory labor by the program, then it should result in a significant net increase in employment, even when offset.

In contrast, if an ordinary Federal expenditure--which does not alter factor prices for producers--is appropriately offset by taxes or an expenditure reduction, then employment will remain approximately the same. It follows that if a Federal employment program is shown to be equivalent to general revenue sharing, or an unconditional grant to producers in either sector, then if it is appropriately offset, it will not induce a significant net increase in employment. Like general revenue sharing, such a program gives no special stimulus to employment; the offsetting policy will therefore decrease employment by roughly the same amount.

The Federal employment program, therefore, must do considerably better than general revenue sharing. If the program is shown to be equivalent to

general revenue sharing, it is not what we are seeking. Such a program will not be able to increase employment without increasing aggregate demand, and violating the inflation constraint.

III. THE FUNDAMENTAL PROBLEM OF MAINTENANCE OF EFFORT

The aim of the Federal employment program is to induce independent agents, either public or private, to do more of what they are already doing--namely, employing non-supervisory personnel at above the minimum wage. Whenever the Federal government tries to induce these independent agents to increase some activity they are already performing, the problem of maintenance of effort arises. What is to prevent the independent agents from reducing their own effort, and substituting Federal funds for their own without genuinely increasing the particular activity?

While the maintenance of effort problem is familiar to most persons in government, its seriousness is often underestimated. It is usually assumed that, yes, there is a maintenance of effort problem but, no, it does not seriously undermine the basic objective of the grant program. Administrators proceed in the belief that the program is still doing some good, in spite of this problem. Yet, in most cases, there is little basis for such confidence. It is often likely that the program is in fact being undermined.

An example will illustrate the problem. Suppose a local government would employ 100 persons above $2.40 an hour if there were no Federal program. Suppose the Federal government offers to pay the salaries of five additional employees, at $6,000 each. In the first year, the program will succeed, if it was not anticipated by the local government. Having 100 employees on board at the time the program is introduced, the local government adds five additional persons to bring its total to 105, receiving $30,000 from the Federal government.

If the program is a permanent one, however, the Federal government will offer to fund five persons (at least) in succeeding years as well. Once the local government anticipates the Federal grant, the problem becomes serious.

Suppose the local government would have employed 105 persons in the following year without the Federal grant. It can claim that it would have remained at 100, and use the Federal grant to fund five persons who would have been employed anyway. The $30,000 saved can be spent on other things, or returned to the locality in the form of less taxes. The Federal government may believe it has succeeded in increasing employment by five. The local government will label five employees as grant recipients, as if to verify this.

Yet the Federal grant, earmarked to increase employment, has been converted into an unearmarked grant of $30,000. The grant has been decategorized. The effect on employment will be no greater than the effect of $30,000 general revenue sharing. The local government may spend some of this money on increased high wage employment, but it is also free to cut taxes, or spend the funds on other things.

Of course, Federal grant programs are aware of this process, and try to prevent it from occurring. Nearly all programs of this kind use maintenance of effort regulations to try to stop such substitution. A most relevant example are the guidelines for the Public Employment Program, authorized by the Emergency Employment Act of 1971. They read as follows:[27]

Maintenance of Effort

Section 12(a)(1) of the Act prohibits the Secretary from granting funds unless he determines that the program:

1. will result in an increase in employment opportunities over those which would otherwise be available;
2. will not result in the displacement of currently employed workers, including partial displacement such as a reduction in the hours of non-overtime work or employment;
3. will not impair existing contracts for service or result in the substitution of Federal for other funds in connection with work that would otherwise be performed.

The intent is clear. The question is whether these provisions work in practice. The Emergency Employment Act of 1971 (EEA) which authorized the Public Employment Program (PEP) became law on July 12, Congress appropriated funds on August 9, and the grants were made during the next few months. In

its first year, therefore, PEP funds were granted to program agents after these agents had passed their own budgets for that fiscal year. This made it difficult for the agents to respond to PEP by adjusting their own budgets. The fact that PEP was largely unanticipated helped to enforce the maintenance of effort provisions.

In the second year, however, program agents realized that PEP would probably be refunded at roughly the same level as in the first year. As a result, agents were able to take PEP into account in planning their budgets for the fiscal year July 1972 to June 1973. Consider the case of a typical local government. When PEP was introduced, it had 15 recreation employees in that department, and, under PEP, it added a 16th. Suppose that in the following year it would have added a 16th recreation worker, had there been no PEP program. With PEP, it would almost certainly continue to fund only 15 slots from its own revenues, and continue to have the 16th slot funded by PEP. It has invisibly converted the PEP grant into general revenue sharing.

None of the Manpower Administration project officers whom I interviewed even attempted to investigate this kind of substitution. The only maintenance of effort violation they watched for was direct, overt substitution--the lay-off of a regular employee in order to replace him with a PEP employee. They felt that trying to detect the indirect substitution described above would be a futile exercise.

They are right. The crux of the problem is that a hypothetical is involved. We need to know what the program agent would have done, this year, had there been no Federal program, but in fact did not do, since there is a Federal program. The problem is not simply to discover the agent's intentions. The problem is that the agent need never have formulated its intentions. It is likely that there is nothing to discover. What must be grasped is that the program agent need never decide what it would have done without the Federal program once the program is in operation. In most cases, it can honestly respond that it has nothing to reveal.

Maintenance of effort provisions, enforced by adequate supervision, can restrain direct substitution. This creates the impression that the regulations

do work, and the problem is being contained. Yet it is indirect substitution--a process that cannot be prevented by current regulations--that is alone sufficient to seriously undermine the objectives of the program. Over the five years between 1967 and 1971, state and local government employment, without PEP, increased about 1.5 million, or an average of about 300,000 per year.[28] In 1972, a year of recovery from recession, the increase without PEP would undoubtedly have been greater than 300,000. Under PEP, about 160,000 jobs were funded. It would have been natural, and largely invisible, for program agents to finance about 160,000 less jobs from their own funds than they otherwise would have, and added the 160,000 from PEP. Since they would have been adding roughly as many jobs from their own revenues, this substitution would have gone unnoticed.

Each of the several program agents I interviewed during the first year of PEP, having been told to expect roughly the same PEP funding in the second year, planned their budgets accordingly. Almost all of these local administrators were unaware that their planning violated the maintenance of effort regulations of the program. Yet, how can responsible administrators pretend PEP funds do not exist when they plan their budget, when they, in fact, know these funds are available? Without such pretending, the maintenance of effort provisions will be violated.

If PEP funding were uncertain each year, and could not be anticipated, program agents would not be able to count on PEP, and effort would be better maintained. A policy of permanent uncertainty, however, entails serious costs. Suppose, for example, that PEP funds were not allocated until July, each year, after program agents had passed their budgets for the fiscal year. Late allocation in itself is not sufficient to prevent substitution if each agent is able to anticipate approximately what it will receive. In the second year of PEP, funds were allocated late, but each agent knew it would receive about what it got in the first year, and planned accordingly. To discourage substitution in planning, the program must actually surprise most agents; it must allot them an amount they truly did not expect.

But this very condition--to catch them unprepared--obviously has severe disadvantages. It means that PEP jobs will be appended on to departments, rather than fully integrated into the job structure. It means that equipment, office space, and other supplies will not be set aside for the new employees. Nor will adequate supervision be planned. Furthermore, program agents will naturally resent this intentional uncertainty. For these and other reasons, pressure has already developed to fund PEP one year in advance. Senator Cranston's expanded public service employment bill contains the following sensible provision:[29]

> Section 4(d) For the purpose of affording adequate notice of funding available under this Act, appropriations under this Act are authorized to be included in the appropriations Act for the fiscal year preceding the fiscal year for which they are available for obligation.

Whether or not advanced funding is adopted, this proposal reflects the costs of the uncertainty that has accompanied PEP funding. It suggests that an attempt to increase uncertainty in order to limit substitution is a self-defeating policy. Another way must be found to maintain effort.

It should be noted that the maintenance of effort problem applies to regular Federal agencies as well. If these agencies are subsidized to increase employment, they will also plan their own budget requests with this in mind. The Office of Management and Budget, and Congress, will be unable to determine what the agencies would have requested had there been no Federal employment program. As long as the agency has its own objectives, it will act like any other independent agent.

It would be possible to create a special Federal agency--perhaps called the Federal Projects Administration--whose sole purpose would be to create jobs. If such an agency were funded entirely through the Federal employment program, according to the number of persons it employed, then there would be no maintenance of effort problem. While such an agency might be useful to some extent, particularly as an employer of last resort in a guaranteed job program, its projects must not replace work that would have been done by regular public or private producers. As a result of this restriction, more meaningful and

useful work will be induced if the Federal employment program relies primarily on inducing regular producers, public and private, to use more labor relative to other inputs.

1. Open-ended vs Closed-ended Grants

The aim of the Federal employment program is to induce producers, faced with a given product demand, to increase above-minimum-wage employment. The method is to reduce the cost of additional labor to producers by subsidizing the wages of employees. Because of the maintenance of effort problem, however, the design of the Federal subsidy--whether it is open or closed-ended--will usually determine whether the cost of additional labor is effectively reduced, and the incentive to shift factors and expand output actually created.

Under a closed-ended design, the maximum amount each program agent can receive is effectively limited. Under PEP, the Federal government subsidizes 90% of the wage, but the amount of subsidy is limited. Each program agent is allotted a maximum amount, which depends on the unemployment in its jurisdiction. The ceiling is effective, rather than merely nominal, since all program agents requested their maximum, and most would have requested more, had they not been limited. Under an open-ended design, a program agent is free to request as much aid as it wants, provided it puts up its matching share. Under the WIN tax credit, private businesses receive a tax credit equal to 20% of the wage for each welfare recipient they employ. While there is a nominal ceiling on the credit a business can earn, it is not likely to be effective for most businesses; it is higher than most businesses would freely request, given the productivity to them of additional welfare recipients, and the fact that they must pay most of the wage. The WIN tax credit is effectively open-ended for most businesses; since the ceiling does not restrict their free choice, an additional WIN employee would cost them less than his wage. In contrast, under PEP, since the ceiling is reached, an additional employee beyond this, costs the program agent the full 100% of the wage.

If there were no maintenance of effort problem, either design would induce an increase in employment. Because of the seriousness of the maintenance of effort problem, an important conclusion emerges: only the open-ended de-

sign guarantees that the cost of truly additional labor will be effectively reduced; therefore, only the open-ended design insures that there will be an increase in employment relative to other inputs.

To see this, consider a program agent who would have hired 105 employees without the Federal employment program, and last year hired 100. If it receives a closed-ended grant of $6,000 per employee for a maximum of five employees, it will use the subsidy for the five it would have hired anyway. A truly additional employee--the 106th--would still cost it 100% of the wage, since the ceiling has been reached. While it has $30,000 more in revenue due to the grant, the cost of truly additional labor has not been reduced, and there is no reason to expect the agent to employ more labor relative to other inputs. Suppose, in contrast, that the grant were open-ended, and that the subsidy was $3,000 per employee, without limit. The agent would again use Federal funds for the five employees it would have hired anyway, this time substituting $15,000 instead of $30,000. A truly additional employee--the 106th--will now cost the agent $3,000 less than the wage; the same is true for each additional employee. The cost of additional labor is effectively reduced, and the agent will increase employment relative to other inputs if it is given time to adjust. Suppose the agent hires 110 employees. This will cost the Federal government the same $30,000 that accomplished nothing (except general revenue sharing) under the closed-ended design.

If the maintenance of effort standard had been set at 105, instead of 100, then both designs would have increased employment. In practice, however, serious leakage is inevitable, under either design. The virtue of the open-ended design is not that it overcomes the maintenance of effort problem, but that it alone guarantees a genuine increase in spite of this problem.

The example brings out another crucial difference: the open-ended design can always achieve the same increase in employment for significantly less money than the closed-ended design. Suppose the maintenance of effort norm had been set at 105, so that the closed-ended design did achieve an increase of five employees, to 110. If the ceiling is effective, and not merely nominal, the agent would have wanted to hire more than five at a subsidy of $6,000

per person. In the example, it was assumed that $3,000 per person would accomplish this. Whenever an agent wants to go beyond the ceiling at the going subsidy rate, it could have been induced to reach the ceiling at a lower subsidy rate.

The magnitudes are likely to be significant. Under the PEP subsidy rate of 90%, every program agent in the country requested its maximum limit. This means that nearly every program agent would have hired the same number of persons at a lower subsidy rate. In its first year, when PEP did do better than general revenue sharing because it was unanticipated, under an open-ended design PEP might have achieved the same increase at perhaps half the cost. While this is only conjecture, the fact that every program agent requested its limit at a subsidy rate of 90% suggests that the rate could have been reduced significantly before most agents would request less than the original limit.

The attraction of the closed-ended design with a high subsidy rate, on the other hand, is that it makes sure that funds are allocated to public program agents according to the unemployment in their jurisdictions. The high subsidy rate enables each program agent to accept its maximum allotment. The ceiling on the grant prevents any program agent from receiving more than its proper share. The closed-ended design not only achieves a fair allocation among program agents, it achieves a fair distribution of assistance among the unemployed in different jurisdictions.

Unfortunately, fairness is of little use if the goal of the program is not attained. Because of the maintenance of effort problem, the closed-ended grant will induce little if any relative increase in employment; it will hardly do better than general revenue sharing. Since the open-ended design is essential to achieve the objective of the program, a method must be found to bring about a fair allocation among jurisdictions under the open-ended design.

If each public program agent faces the same subsidy rate under the open-ended design, funds will not be allocated to jurisdictions in proportion to the number of unemployed. The response of each program agent will differ according to the size of the agent, and its elasticity of demand for labor. There are several possible responses to an undesirable allocation of funds.

Under the first, the subsidy rate could be raised for program agents that responded too much. Unfortunately, this would create the incentive for program agents to under-respond in order to receive a higher subsidy rate. Also, the fairness of rewarding a poor response, and penalizing a good one might be questioned.

Under the second, the program would be expanded to include other producers in the jurisdiction besides the single public program agent. Even if the local government responds poorly, other producers may take up the slack. The greater the number of producers eligible for the program, the less will be the impact of the local government's response on the total response of the jurisdiction. If the response of the jurisdiction is low relative to the number of unemployed, then the subsidy rate could be reduced. As long as the number of participating producers is too large for successful collusion, no producer will have an incentive to respond poorly to try to affect the subsidy rate in the following year, since no single producer will be able to control the area's response, which alone will determine the subsidy rate.

Under the closed-ended design of the PEP program, each public program agent was required to hire persons who lived within its jurisdiction. Under the open-ended design, competition among program agents is important to prevent collusion. Program agents should be prevented from hiring only persons who live in its jurisdiction. Thus, within any labor market area, even if the program is restricted to the public sector, there will be several local governments, as well as state and Federal agencies. The number should be large enough to prevent collusion, and intentional under-responding. Even if several of the public program agents respond poorly, the others may take up the slack. As long as all jobs are open to persons regardless of their residence, persons in the jurisdiction of a program agent that responds poorly will have the same opportunity for employment. Competition among employers for subsidy is further increased if non-profit organizations are included, and, finally, if private businesses are included.

The varying of subsidy rates among regions, sub-regions, and even labor market areas (defined for administrative purposes according to political

boundaries) will enable Congress to achieve any allocation of funds among areas that it desires. As long as individual program agents are unable to control the subsidy rate that applies to them, intentional under-responding will not be tried. The existence of more than a few program agents in the same administrative area, all facing the same subsidy rate, with the rate determined by the aggregate response of all program agents, should guarantee sufficient competition. Rather than try to equalize the ratio of jobs created to number of unemployed in each area, it might be reasonable to settle for a lower ratio in areas that require a high subsidy rate, and a higher ratio in areas that require only a lower rate. The important point is that under the open-ended design, Congress can achieve whatever allocation of funds among areas it desires.

It must be emphasized that program cost can be controlled under an open-ended design. The subsidy rate should be set so that the expected response will generate the total Federal expenditure that is desired. If the subsidy rate is set low enough, even a very small program cost can be achieved. It is true that there will be some variance of actual cost around the target under an open-ended design. In contrast, a closed-ended design has the advantage of certainty. Once a given program has been in operation, however, the relationship between the Federal subsidy rate and program cost will be able to be estimated with reasonable accuracy. If high priority is set on not exceeding a certain cost, the Federal subsidy rate can be set sufficiently low so that the probability of exceeding this cost is very small.

The open-ended design is the rule, not the exception, on the revenue side of the Federal budget. The Federal government could be more certain of its revenues if it set actual tax liabilities for each taxpaying unit at the beginning of each year. Instead, however, it sets tax rates. The unit's tax liability depends on what its tax base turns out to be. Tax rates are set so that estimated revenues are as desired. Because uncertainty characterizes the entire revenue side of the budget, there does not seem to be a valid reason for refusing to admit some uncertainty on the expenditure side.

The uncertainty of the exact program cost under the open-ended design must be weighed against the certainty that it is more effective. How much more effective depends on the price elasticity of the demand for labor of program agents. If program agents do not respond to a cut in the wage, then the open-ended design is no better than the closed-ended design or an unconditional grant. If the price elasticity, even in the long-run when time for full adjustment is allowed, is assumed to be zero, the conclusion should not be to choose a closed-ended design, but rather, to abandon the Federal employment program altogether.

Unfortuantely, estimates of the price elasticity of the demand for labor are unreliable for estimating the effect of a Federal employment program with an open-ended design. Some estimates have been attempted in several empirical production function studies.[30] Besides the difficult econometric problems involved, the expected response to a wage cut via a Federal subsidy depends crucially on how the program is administered. If the cost to the agent of participating in the program, undergoing supervision, having its books inspected, and so on is high, then the nominal subsidy rate overstates the effective reduction in cost.

In spite of these difficulties, the econometric studies assert that the long-run price elasticity of demand for labor is positive.[31] If these studies are correct, then as long as the participation cost does not exceed the subsidy, the net subsidy will be positive, and there will be an increase in employment. No matter how great the participation cost, it is true it can always be offset by a large enough subsidy. The higher the gross subsidy, however, the greater the cost of the program. The way the program is administered therefore becomes very important. Since the participation cost is spread over relatively few additional employees. participation will not be worthwhile unless the cost is low, or the subsidy, high. Alternative methods of administration will be considered later.

Experience with PEP and JOBS, however, suggests that the participation cost should be able to be kept low enough to achieve a positive net subsidy when the gross subsidy is less than 100% of the wage. Both programs have a

high participation cost, involving negotiations, contracts, direct supervision, and inspection. Nevertheless, both programs elicited response. In the first year of PEP, when there was little substitution of funds because the program was unanticipated, the strong universal response from all program agents suggests both a positive net subsidy, and a positive elasticity of demand for labor. The fact that quite a few private employers are willing to put up with the very high participation cost of the JOBS program implies that the gross subsidy for a small number of additional employees offset the participation cost, for at least a fraction of the private sector.

2. The Open-ended Design and Maintenance of Effort

While an open-ended design should be utilized in the Federal employment program, for the reasons given, its adoption raises the maintenance of effort problem with new urgency. When the design is closed-ended, each program agent is strictly limited in the amount it can receive, and therefore, the amount it can substitute. Even if there is no attempt to maintain effort, abuse is limited by the ceiling. Under the open-ended design, in contrast, there is no limit to substitution. It becomes essential to set an enforcible maintenance of effort norm for each program agent.

The setting of this norm, however, is bound to be more controversial under an open-ended than under a closed-ended grant. Under the closed-ended design, the position of the norm does not affect the amount the program agent will receive. In the earlier example, the agent will receive $30,000 for five employees whether the norm is set at 100, or 105. Under the open-ended design, the position of the norm does affect the amount the agent will receive. If the norm is set at 100, the agent will receive $30,000 for ten employees; if it is set at 105, the agent will receive only $15,000 for five employees.

The decision to use an open-ended design therefore requires a method for setting the norm that is regarded as reasonably fair. This problem is avoided by the use of a closed-ended design, where abuse is limited by the

ceiling on the grant rather than the maintenance of effort norm, and where program agents care less about such a norm because it does not affect the size of their grant. Unfortunately, the open-ended design, not the closed-ended one, is necessary to accomplish the goal of the program. The need to develop a method of setting a norm for each program agent cannot be escaped.

Before considering an alternative to current maintenance of effort regulations, it will be instructive to examine how the maintenance of effort problem is handled under the investment tax credit.

3. Comparison with the Investment Tax Credit

The investment tax credit raises the same maintenance of effort problem. The purpose of the investment tax credit is to induce private businesses to do more of what they would already be doing--namely, purchasing capital goods. Ideally, the Federal government would like each business to reveal how much investment it would have undertaken without the credit, and then, the Federal government would offer a credit only on investment beyond that point. In practice, of course, this is impossible.

Yet the investment tax credit originally proposed to Congress by President Kennedy in 1961 did attempt to more closely approach this ideal than the program that was finally enacted. The current investment tax credit is a credit on gross investment. The tax liability of a business is reduced by an amount equal to 7% of all investment undertaken in the given year. The original proposal was for a credit on net investment. Only investment in excess of current depreciation would earn the business credit. In his message to Congress, the President explained the use of net investment:[32]

> In arriving at this form of tax encouragement to investment, careful consideration was given to other alternatives. If the credit were given across the board to all new investment, a much larger revenue loss would result from those expenditures which would have been undertaken anyway or represent no new level of effort. Our objective is to provide the largest possible inducement to new investment which would not otherwise be undertaken.

In spite of this argument, Congress passed a gross investment credit instead, for reasons that will be reviewed shortly. No attempt was made to maintain the effort. In 1972, gross investment was projected as $174 billion, while capital consumption allowances (depreciation) were $104 billion.[33]

Depreciation has been in the order of two-thirds of gross investment in recent years. In fiscal year 1971, the revenue loss or cost of the investment tax credit was $3.6 billion.[34] If the argument given in the President's message is correct--that most businesses would invest as much as current depreciation anyway--then leakage under the credit was at least $2.4 billion. Businesses simply substituted this amount of Federal funds for their own during that fiscal year. The $2.4 billion did not accomplish the Federal objective, but simply made the businesses that much better off.

It should be realized that even a net investment credit does not strive for the ideal. Most businesses, on the average, will invest roughly 50% more than their current depreciation, according to their performance without the credit.[35] A norm that aimed at the ideal would offer a credit only for investment in excess of 150% of current depreciation. Of course, given the variance around the mean, many businesses would not invest enough to be eligible for any credit under such a norm. These businesses would not be subject to the special incentive to increase investment. Even the net investment credit will eliminate the fraction of businesses for which gross investment would have been less then depreciation. Only a gross investment credit--where the norm is zero--will provide an incentive to all businesses, regardless of current depreciation.

It is important to consider the reasons why a gross, rather than net, investment credit was enacted. The investment tax credit has an open-ended design, despite a nominal high ceiling, and thus has the virtue that, despite considerable leakage, the cost of truly additional investment is effectively reduced. The open-ended design, however, means that the position of the norm affects the amount of subsidy each business will receive. Suppose the design were closed-ended, and the credit were limited to 20% of depreciation. Then all businesses that would have invested at least 120% of depreciation would be indifferent between a gross or net credit. Under an open-ended design, these businesses earn much more subsidy under the gross than under the net credit. Thus, all businesses--even those that would have invested enough to qualify for credit under the net credit--strongly preferred the gross credit.

Businesses that would not qualify for subsidy under the net investment credit argued that the depreciation norm was arbitrary and unfair. Firms in declining industries, and firms that just completed a period of expansion, complained they would be treated unfairly. Tax experts warned that a net credit would encourage corporations to create new subsidiaries unburdened with depreciation which could earn credit on all its investment, and then rent the capital equipment to the parent corporation. While this gimmick cannot be applied to an employment program, since employees who work for the subsidiary cannot be "rented" to the parent, it indicates that efforts to subvert any norm must be anticipated. While these arguments need not be decisive, they are symptomatic of the controversy that is bound to arise over the positioning of the maintenance of effort norm under an open-ended design.

Economic efficiency--as opposed to Treasury efficiency--also argues for a gross investment credit. A given increase in investment will yield the greatest economic return if all producers are subject to the same incentive, and none are excluded from the program. Suppose that without the tax credit, all businesses invest until the marginal rate of return on additional investment no longer exceeds the market rate of interest. Assume this rate of return is 10%. A tax credit on investment means that businesses subject to the credit will undertake investment with a return less than 10%; suppose the credit induces each of these businesses to invest until the last $1 invested in each one yields 8%. If any of these businesses invested $1 less while another invested a $1 more, the economic return would not increase. If there are businesses not subject to the credit, however, they may be foregoing investment that would yield a 9% return. If investment were shifted from the included firms to the excluded ones, the total economic return on a given aggregate level of investment could be increased. Since a given aggregate level of investment represents a given total cost for society, economic efficiency requires that it yield a maximum return. Since the gross investment credit, with its zero norm, will include all producers, it will be more economically efficient than the net investment credit, which is bound to exclude a fraction of producers.

The trade-off is between economic efficiency, and Treasury efficiency. Since the net investment credit would include most businesses, the loss in economic efficiency would not be great, while the gain in Treasury efficiency would be quite large. There is also a trade-off between fairness to certain businesses--those that are declining for various reasons--and fairness to taxpayers, who must pay for the huge leakage under the zero norm. These issues must be weighed.

4. An Alternative Approach

Current maintenance of effort provisions are ineffective. Because the Federal employment program must use an open-ended design if it is to accomplish its goal, an alternative technique for maintaining effort must be devised. The gross investment tax credit makes no attempt to maintain effort, and simply uses a zero norm. This choice is difficult to defend for the investment credit, and would be impossible to defend in a Federal employment program, where the leakage from subsidizing all employees would be enormous.

The logic of the alternative approach is seen in the net investment credit. The argument for the net credit is that the investment a business would have undertaken without the Federal program is correlated with the depreciation the business incurs with the program. The strategy is to find an activity whose actual magnitude once the program is operating should be correlated with the magnitude the target activity would have taken on had there been no program. The greater actual depreciation under the investment tax credit, the greater would have been investment had there been no tax credit.

It should be possible to use this strategy for the Federal employment program. A plausible candidate for an index is the change in operating cost (i.e. cost incurred by the program agent excluding capital outlay, depreciation, and interest charges). Suppose that with the Federal employment program in effect, the operating cost of agent A increases by 10% in successive years, while the operating cost of agent B increases by 2%. Then it seems reasonable to assume that, had there been no program, the labor cost of A would have increased by a greater percent than the labor cost of B. Given

the actual change in the average salary per employee, the change in labor cost can be transformed into a change in employment.

Operating cost will be used for illustrative purposes throughout this analysis. It may well be that some other variable, or set of variables, is a better predictor of employment--or more precisely, the number of full-time equivalent employees (a measure that combines full-time and part-time employees according to the hours they work). For example, variable cost may do better. Careful empirical analysis is required to select the variables that best predict the number of non-supervisory employees. Data generated by program agents in recent years should be used to develop the index. Using regression analysis, it should be possible to select a set of independent variables that predict reasonably well the dependent variable--the change in full-time equivalent employment for non-supervisory employees.

The key feature of the index is that it attempts only to predict the change in non-supervisory employment. Clearly, some program agents will use a lot of labor relative to total operating cost, while others will use little. Any index that tried to predict the level of employment from the level of operating cost would almost certainly fail. Fortunately, the maintenance of effort index need not perform this more difficult task. What counts are changes from the base period level. Thus, program agent A may have used 100 non-supervisory employees for every $1 million in operating cost in the year prior to the introduction of the Federal program; while agent B may have used only 50 employees for each $1 million. To accomplish its objective, the index must predict how employment would have changed from 100, or 50, when operating cost changes from $1 million. While this is certainly a challenging task, it is more manageable than an attempt to predict the level of employment, given the level of particular variables.

How accurate a maintenance of effort index can be devised must await empirical analysis, and experimentation with variables. The feasibility of this approach, however, can be judged even without such analysis. The reasonable equity of the index, and therefore its acceptance, does not primarily depend on the goodness of fit of the best regression equation. It depends on

the notion that if agent A increases his operating cost by a greater percentage than agent B, than A can afford to increase the number of employees he finances on his own (assuming the average salary level changes similarly for both agents) by a greater percent than can agent B. Perfect fairness would require the norm to reflect exactly what the agent would have done. Tolerable fairness requires the norm to reflect what the agent can afford to do. An index that requires program agents to finance more employees, the more their expenditures increase, should be regarded as tolerably fair.

While such an index should be reasonably fair and accurate when the program is first introduced, as time passes some agents may diverge significantly from their norms; the number of persons they would have employed in non-supervisory positions will differ significantly from the norm they are assigned. The more accurate the index, the less this will occur, but even the best index will not eliminate this problem. Agents who would have employed less than their norm will enjoy substituting Federal funds for their own. Agents who would have employed less than their norm may be unable to attain their norm, and will therefore earn no subsidy.

While this problem cannot be eliminated, steps can be taken to reduce inequity, and leakage. It might at first be thought that the problem can be contained by simply raising the norm, in the following year, if the agent earns substantial subsidy, and lowering it, if the agent earns no subsidy. Unfortuantely, this natural response would be equivalent to reducing the net subsidy, and reducing the employment effect of a given Federal expenditure. Each agent would realize that more sibsidy this year will mean less subsidy next year, because next year's norm depends on this year's response.

The effective subsidy rate will be reduced as long as the adjustment of a program agent's norm next year depends on its own response this year. It follows that adjustment of a particular agent's norm must be independent of the behavior of that agent. In spite of this constraint, progress can be made. A second-best strategy is to adjust the norm for a group of program

agents. Since all agents in the group will be treated uniformly, and the adjustment will depend on the behavior of the whole group, rather than the individual agent, then as long as the group is large enough to prevent collusion, group adjustments will not reduce the effective subsidy rate. The difficult task then becomes the placing of agents in the appropriate group.

The easiest grouping is geographic. A uniform adjustment of the norm can be applied to all program agents in a subregion, or preferably, in a labor market area. If the number of employees subsidized in the area is large relative to total employment in the area, then the norm might be raised uniformly for all agents. The adjustment can be made with the aim of equating the ratio of employees subsidized to total employment for all geographic areas. This ratio is only used for illustration. Another target may be more appropriate. Such an adjustment will prevent an unfair dispersion in benefits among labor market areas.

Within each labor market area, however, there are bound to be some agents enjoying substantial leakage, while others earn no subsidy at all. If the program applies to the private sector, some industries may systematically do better or worse than average. Perhaps large or small agents will do better or worse than average. Groups defined by other characteristics may vary from the average. Variation by industry, and by size, will illustaate how this problem might be handled.

All agents might be placed in a four-digit census industry category. If total employees subsidized was large relative to total employment, for all agents in that category, then the norm would be raised uniformly for all agents in the following year. The adjustment can be made with the aim of equating the ratio of employees subsidized to total employment for all geographic areas. Once again, this ratio is only used for illustration; another target may be more appropriate. A finer industrial classification might be attempted. The gain in equity and reduction of leakage must be weighed against the increased administrative complexity. An alternative method of grouping would be to add a dummy variable for industry to the regression equation that determines the index.

Because size is a continous variable, it might be more natural to

achieve the grouping by adding this variable to the regression equation that determines the index. In this way, agents of different size would automatically be treated differently.

Clearly, grouping--whether achieved explicitly, or implicitly by adding a variable to the index equation--will be controversial. Since the group into which an agent is placed determines its norm, agents will want a classification system that will give them a lower norm; they will want variables added to the equation that determines the index that are likely to reduce their norm. Agents that feel the current grouping works against them will undoubtedly object that the program is arbitrary and unfair.

While any grouping will always favor some agents more than others, this does not mean that the grouping, or the variables used in the index equation, must be arbitrary. Objective standards can be devised to determine when a particular classification scheme is warranted. For example, suppose that dummy variables for industrial classification are statistically significant in an equation predicting the change in employment from its base period value. Then an industrial grouping would be objectively justified. Other statistical measures might be used to develop the groupings. Such groupings, or equation variables, should also have a common sense plausibility. Surely, labor market area, industrial classification, and size, are three plausible dimensions. While particular agents may object, these groupings would strike most as fair.

Perhaps most important, it must be remembered that the worst an agent can do under any grouping or index is to earn no subsidy; this is the agent's situation without any Federal employment program. The grouping system or index equation determines how much each agent will benefit from the program. A program that distributes only benefits, even if unequally, should be considered more acceptable by agents than one which distributes actual losses (the financing of the program may affect this, as will be discussed in the non-profit vs. profit section, later).

The more refined the grouping, or index, the smaller the leakage that will occur. Under such grouping, norms will approximate what the agent would

have done for more agents than under less refined grouping, where dispersion will probably be greater. Refinement should be pushed to the point where the additional gain in reducing leakage is outweighed by administrative complexity.

The purpose of this section has not been to propose particular indices, or grouping schemes, but only to support the assertion that a workable maintenance of effort index should be able to be devised. Such an index will have many imperfections, and its development will require careful empirical analysis and ingenuity. This alternative approach to the maintenance of effort problem, however, seems promising enough to allow the conclusion that it is likely to be a significant improvement over current regulations. Although more complex than the current regulations, it will have the advantage of enabling the program to achieve its objective.

5. Substitution and Lay-off Bias Among Employees

When the Federal government subsidizes independent agents to increase a specific activity they are already performing, they may not only reduce their own effort for the subsidized activity; they may also substitute the subsidized activity for a closely related unsubsidized one. Since they thereby reduce effort for the unsubsidized activity, such substitution is often called a maintenance of effort problem.

It is more useful, however, to realize that the problem is really one of defining the subsidized activity too narrowly. One of the objectives of a subsidy program is to induce the recipient to substitute more of the desired activity for other activities. Thus, the Federal employment program seeks to induce producers to use more labor relative to other inputs. If a producer failed to maintain effort in its use of other inputs, this would not be considered a problem, but rather, a desirable result. If the producer, however, substitutes subsidized employees for unsubsidized employees, this may be undesirable.

Unlike the regular maintenance of effort problem, this one can be solved simply by broadening the category to be subsidized. If all non-supervisory employees, rather than a subcategory of these, are subsidized, the incentive to substitute among employees is eliminated. Unfortunately,

broadening the subsidized category also eliminates the possibility of providing special assistance to a special subcategory of workers.

Before proceeding, it is worth repeating that subsidy is needed to induce additional employment, whether the subsidy applies only to a special, low-skilled category, or to all employees. The subsidy is needed to counter diminishing returns. The marginal productivity of labor declines, even if the quality of additional employees stays the same. While a larger subsidy will be needed if quality also declines, the subsidy strategy is justified, even if this is not the case, and the subsidy applies to all persons.

There is only one alternative to broadening the subsidized category to include all persons. A quota of unsubsidized employees must be made immune to substitution. This can be done simply by requiring the program agent to maintain a specific number of unsubsidized employees. Any attempt to substitute a subsidized employee for one of these unsubsidized employees will not succeed, since the new employee will have to fill the quota, and therefore be ineligible for subsidy. Similarly, if employment must be cutback, the employer will not try to retain his subsidized employees, and lay off unsubsidized ones, since for each unsubsidized one who is laid off, a previously subsidized employee must lose his subsidy, in order to fill the quota.

Thus, the program agent must finance a specific number of employees not in the special subcategory, just as it must finance a specific number of employees in the special subcategory. It must maintain effort on non-designated employees just as it must maintain effort on designated ones. The above strategy, therefore, is equivalent to broadening the maintenance of effort requirement to include all employees. The only two possible alternatives can be stated as follows: Either the subsidy itself must be applied to all employees, or the maintenance of effort norm must be broadened to try to protect undesignated employees.

The merits of these two fundamental alternatives will now be evaluated. The issue is of great importance. Nearly every current or proposed Federal employment program directs subsidy at a special subcategory of persons, rather than all persons employed in non-supervisory jobs. The WIN tax credit specifies welfare recipients referred by the WIN program;

JOBS specifies new hires who are disadvantaged; PEP applies to previously unemployed or underemployed new hires, and requires some representation from various groups; various proposals recommend subsidy for heads of households, persons with low earnings in the previous year, and so on. Substitution among employees, like the maintenance of effort problem, is contained under a closed-ended design. Substitution among employees is limited by the number that can be hired under the grant.

When the open-ended design is used, however, the problem of substitution among employees, like maintenance of effort, becomes urgent. Since the Federal employment program must use an open-ended design, for reasons given earlier, it becomes essential to know whether serious inequities can be prevented if only a special subcategory is subsidized. Can the second alternative--broadening the maintenance of effort quota to include all employees--work satisfactorily?

Suppose the subsidy is restricted to a subcategory of employees, but the maintenance of effort norm applies to all employees. For example, suppose that only new hires who are heads of households are subsidized. If the maintenance of effort norm applied only to heads of households, employers would have an incentive to substitute heads for non-heads. Under an open-ended design, required for program success, considerable substitution would occur, both direct and indirect. If the norm applies to all employees, however, the unlimited substitution is prevented.

The maintenance of effort norm means that the program agent is ineligible for subsidy on a specific number, or quota, of employees at any point in time. These employees are safe from substitution, as long as the norm does not decline, thereby reducing the quota. Any employee who replaces one of these unsubsidized employees would also be inelibible for subsidy, since the quota must be maintained. If employment must be reduced, the employer will be indifferent between laying off a subsidized employee, and one of these unsubsidized employees. In either case, he will lose subsidy for one employee. If he lays off one of the unsubsidized employees, one of the previously subsidized employees will have to take his place filling the quota.

Whenever the norm declines, and the quota is reduced, however, some of the previously protected unsubsidized employees are no longer safe. They are in excess of the norm, and no longer needed to meet the program agent's quota. If the program agent holds total employment constant, it will have the incentive to replace these excess unsubsidized employees with persons eligible for subsidy. This, of course, is substitution. If the agent must reduce employment, it will prefer laying off these excess unsubsidized employees, rather than subsidized employees. Hereafter, this will be referred to as lay-off bias.

Consider concretely what this would mean. Suppose a business is either in a declining industry, contracting in a cyclical downturn, or after a seasonal peak. Its change in operating cost calls for a decline in its norm. If employment must be reduced, who should be laid off? Since its quota has fallen, the program agent will have the incentive to lay off excess unsubsidized employees, rather than subsidized employees. The employee who is laid off may also be a head of household, and he will probably have greater seniority than the subsidized employees. The inequities and resentment will be serious.

Whenever the quota is reduced, an excess of unsubsidized employees will be created. These will be less valuable to the employer. He will tend to lay them off if employment must be cut, or replace them with subsidized employees if employment can be maintained. Only two responses are possible. Under the first, quotas would not be permitted to be reduced. Under the second, additional regulations would be introduced that tried to minimize the inequities resulting from reductions in quotas. Each will be considered in turn.

If quotas cannot be reduced, then new inequities and inefficiencies are created. The purpose of the maintenance of effort norm is to approximate what the program agent would have done without the subsidy. This is fair to program agents, as well as efficient in reducing leakage. If quotas cannot be reduced when the change in operating costs warrants it, then agents in declining industries will soon be eliminated from the program, since they will be unable to meet their initial quota. Agents declining in cyclical

downturns will be eliminated. Even more serious, every agent with seasonal peaks will be unable to fill its quota during seasonal troughs, if absolute employment would have declined. The seasonal problem could be eliminated by changing the quota only once a year, and somehow setting the quota at the seasonal trough. Even if this could be done, serious leakage would occur, since employment throughout the year would have exceeded employment in the trough, anyway. These consequences of prohibiting decreases in quotas seem unacceptable.

The remaining alternative is to try to minimize the inequities that result when quotas are reduced. Perhaps the most serious inequity is when an employee with greater seniority is laid off or replaced because a subsidized employee is favored. While strong unions may be able to prevent this, many work sites do not have strong unions. The only way to prevent this is to cancel the subsidy of an employee if an unsubsidized employee of greater seniority is laid off. This regulation would eliminate the incentive to lay off an unsubsidized employee rather than a subsidized one of less seniority, since the subsidy would be cancelled as soon as the lay-off occurred.

Unfortunately, this regulation would have unacceptable consequences. Program agents must reduce employment, quite often, for either secular, cyclical, or seasonal reasons, and therefore lay off employees. If such lay-offs required subsidies to be cancelled, then many program agents would be frequently cancelling subsidies. When a subsidized employee was hired, it would be difficult to judge how long his subsidy would last. Agents with secular declines in employment would soon be allowed no subsidy. Without this regulation, declines in employment will usually be accompanied by declines in the agent's quota, so that the number of employees earning subsidy need not be reduced. This regulation would subvert that stability.

As long as subsidy is restricted to a subcategory of employees, there is no way to adequately protect unsubsidized employees from serious inequities. Broadening the maintenance of effort quota to include unsubsidized employees will not work, since the quota must frequently be reduced, leaving some unsubsidized employees vulnerable.

Unless we are willing to accept serious inequities, it will be necessary to apply the subsidy to all persons employed in non-supervisory jobs.

While categories such as disadvantaged, and welfare recipients, are obvious, it is often not realized that new hires is a special category that invites substitution. If employers are subsidized for hiring additional employees, an incentive is created to replace current employees with new ones. Even if a maintenance of effort norm is used to protect current employees, subsidy will be attached to the new hires. If the norm must be reduced, the employer will prefer to lay off unsubsidized employees rather than the new hires.

The alternative to subsidizing employers for hiring additional employees, is to subsidize them for having a surplus of employees above a norm. The target of the subsidy would be the stock of employees on board, rather than the flow of new hires. If the surplus above the norm is subsidized, then distinctions among employees are finally eliminated. If employment must be reduced, when the norm is reduced, the subsidy earned is unaffected by who is laid off. There is no distinction between new hires and old hires.

Subsidizing the surplus of employees eliminates a problem that usually plagues employment and on-the-job training programs. Whenever the employees who are receiving subsidy can be specified, a time limit for the subsidy is usually set. It seems natural to require that a particular employee not be subsidized indefinitely. This view follows from the mistaken notion that the sole purpose of the subsidy is to offset lower quality. If this were the case, it would indeed be pointless to continue subsidy on an employee who has held his job successfully for a certain period of time.

The fundamental reason for the subsidy, however, is to offset diminishing returns to labor. The number of unsubsidized employees is limited, at any point in time, because of this, whether employee quality declines or not. When subsidy is terminated for an employee, he will only be retained if he can fill a regular unsubsidized vacancy. No matter how well he has learned his job, the level of unsubsidized employment will be determined by the diminishing marginal productivity of labor. If the employer retains this employee, it can only be in place of someone else.

Consider a stationary program agent. Without subsidy, it finds it worthwhile to hire 20 employees. With subsidy, it becomes worthwhile to hire 24. Suppose that the conditions that determine its level of employment do not alter. Suppose subsidy on the four new hires is limited to two years. At the end of the two years, four new persons can be hired, so employment will continue to be permanently increased to 24. Since unsubsidized employment remains at 20, the four previously subsidized employees can only be retained if four vacancies open-up at the end of two years. Since the subsidy sustains employment at 24, but only if 4 new employees are added every two years, then 4 unsubsidized employees must leave every two years. If they leave voluntarily, through natural turnover, then there is no problem. This will not always be the case, however.

It is true that it would be possible to eliminate this problem by allowing employees to be subsidized indefinitely. If the original four new hires were subsidized indefinitely, then employment would also increase permanently to 24. There would be no need to worry about 4 positions opening up every two years. Whenever vacancies occurred among the unsubsidized 20 jobs--if ever--only then would new employees be hired. While this would be more sensible, it runs counter to the notion that the person is being subsidized only until he improves his skills. It also seems unfair to give particular persons the advantage of permanent subsidy.

When subsidy is no longer attached to particular persons--but depends only on the surplus of total employment above a norm--then the <u>time limit problem vanishes</u>. In the above example, suppose employment above 20 were subsidized, and this induced the hiring of 4 persons. No particular four persons have the subsidy attached to them. There is no need for vacancies to open-up at periodic intervals in order to retain any of the 24 persons now employed. Thus, subsidizing the surplus eliminates the time limit problem.

Subsidizing the surplus above the maintenance of effort norm also eliminates the administrative problems of certifying eligibility of particular persons for subsidy. No administrative machinery is needed to make sure subsidy is only earned on the designated persons. No employees are labeled as the subsidized ones. The possibility of stigma is thereby removed.

Subsidizing the surplus of employees, regardless of characteristics, removes the incentive for substitution, or lay-off bias. Ignoring employee characteristics does not mean that the program must fund employers who discriminate. All program agents seeking subsidy should be required to give evidence that they are in compliance with the Civil Rights Act and the standards of the Equal Employment Opportunity Commission. This could be done, perhaps, by requiring the program agent to submit figures on the race and sex composition of its workforce, and a brief statement why the figures are evidence that it is in compliance, when it files its annual request for subsidy. This should raise significantly the participation cost of an employer who blatantly discriminates, but should hardly affect the average non-discriminating employer. Only a small sample of program agents would be investigated.

If these anti-discrimination provisions eliminate agents that clearly discriminate from the program, then the equity argument for narrow categorization is weakened. If discrimination is not involved, then it may be unfair to give one group an advantage with subsidy. Why should someone who has not been on welfare be less attractive to employers than one who has, as under the WIN tax credit? Is it fair for a low-skilled white person to be at a disadvantage in finding a job because the subsidy is restricted to minorities, or the "disadvantaged?" Why should a person who seeks a better job be penalized because he already has one, and is not unemployed, and therefore ineligible for subsidy?

A reasonable reply is that discrimination will continue to be serious in spite of such provisions, and narrow categorization and substitution are needed to compensate for it. Indeed, the Federal employment program can be used solely as an anti-discrimination device. The aim would not be to increase the total number of above-minimum-wage jobs, but rather, to increase a particular group's share of fixed number of jobs. If this is the goal, then a closed-ended design is adequate, and preferable since it reduces undesirable substitution. PEP and JOBS may be viewed, not as programs designed to increase the number of jobs, but rather as programs to bring a greater share of the fixed number of jobs to the disadvantaged.

It must always be remembered, however, that if total employment is not increased, then the gain of one set of persons must be at the expense of another. If narrow categorization simply undid the effects of discrimination, equity would be on its side. Unfortunately, narrow categorization inevitably results in substitution most would consider inequitable. Why should a near-disadvantaged minority person, who perhaps was employed too often to qualify for subsidy, be leap-frogged over by a disadvantaged minority person, when a better job opens up, solely because of the subsidy? If all minority persons are subsidized, is this fair to the poor white family head who also has difficulty supporting his family? Should a person be laid off and replaced because the employer wants to earn subsidy? Although a regulation may prohibit this, suppose it is unenforcible, for the reasons given earlier?

There is one special category of persons that is particularly appealing in light of the goal of reducing poverty. That category is heads of households. If the Federal employment program restricted subsidy to heads of households, its anti-poverty efficiency would undoubtedly increase. The inequities of substitution and lay off bias are perhaps least in this case, since all persons who are the prime supporters of their families will never be at a disadvantage. Nevertheless, the difficulties endemic to special categorization persist here, as well. Later, in the discussion of the proposed Employment Incentive Program, the question of limiting the program to heads of households will be considered in some detail.

There is a trade-off involved. Narrow categorization can improve the situation of the target group, but only by generating serious inequities and resentment. If a closed-ended design is used to try to reduce undesirable substitution, there will be little genuine increase in employment because the cost of truly additional labor is not effectively reduced. A small program, and a small subsidy rate, will reduce substitution, and lay-off bias, but also reduce the impact of the program. A program with significant impact may generate enough opposition to undermine political support for the program.

The alternative approach eliminates the problem by subsidizing all employees. It offers less immediate and direct asssitance to particular target groups. Broad categorization, however, may eventually do as much or more for

these groups, for three reasons. First, an open-ended design can be used, inducing an increase in total employment. The target group will therefore be competing for a greater, not constant, number of jobs. Second, the absence of complex regulations requiring direct supervision means that a much larger number of program agents can be brought into the program, further increasing the number of jobs generated. Third, the absence of unfair substitution and lay-off bias should eliminate this source of opposition to the program, and increase the chance that it will be operated on a larger scale, and become permanent.

IV. THE NON-PROFIT VS THE PROFIT SECTOR

Since the Federal objective is to induce a genuine increase in adequate-wage employment, it might be natural to assume that any producer, public or private, non-profit or profit, should be included in the program. Indeed, it will be shown that maximum efficiency for the Treasury, and probably for the economy requires the inclusion of all producers. A fair allocation of funds among areas is also aided by increasing the number of participating program agents. These, however, are not the only aspects that must be considered. The effect on income distritution must also be weighed. Since a program that includes the profit sector is likely to benefit the affluent much more than one that does not, there will be a trade-off between the efficiency and progressivity of the program, unless progressive financing is tied to the inclusion of the profit sector.

Exclusion reduces Treasury efficiency. Suppose that under an open-ended design--which earlier was shown to be more efficient than a closed-ended design--included producers increase total employment a certain amount. To induce a further increase in employment among these producers, the subsidy per employee would have to be raised. If the excluded producers are now included, however, they will further increase employment at the same subsidy rate. The original increase in employment can therefore be achieved at a lower subsidy per employee, since now the contribution from the excluded producers can be added. Thus, the Treasury can accomplish a given increase in employment for minimum cost if all producers are included.

Exclusion will also reduce enonomic efficiency, unless too many resources are already allocated to the excluded sector. Assume that resources are initially properly allocated between the included and excluded sectors. This means that the marginal productivity of labor in the two sectors is roughly the same. Economic efficiency requires that each additional employee should work where his marginal productivity--his contribution to output--is highest. To achieve this, additional workers should be spread around among all producers so that the marginal productivity of labor declines evenly among all producers. If one sector is excluded, however, all additional workers will be added to the included sector. Marginal productivity in that sector will fall below its value in the excluded sector. If some of the additional workers were shifted, output would increase in value.

Marginal productivity would be the same among all producers if they all bought labor at the same wage, sold their output in a competitive market for a price, and tried to maximize profits. Under these conditions, each producer would hire labor until the value of its marginal product (its marginal productivity) just equalled its wage. While profit-making businesses approximate these conditions, public producers neither sell their output for a price nor try to maximize profit. Without a market price, it is difficult to place a value on the marginal product of labor; and even if it could be so valued, the producer does not have the profit motive to hire labor until the value of its marginal product equals its wage.

It is therefore difficult to know whether the marginal productivity of labor is roughly the same in the public and private sectors; or more broadly, whether too many resources are allocated to one sector or the other. The efficiency of the current allocation of resources between public and private sectors is a complex topic in its own right, and cannot be pursued here. It must be realized, however, that exclusion is economically efficient only if the marginal productivity in the included sector is not simply initially higher, but also remains higher after all additional employees have been absorbed. If the Federal employment program is large enough to induce the absorption of 1 or even 2 million employees, the decline in marginal

productivity might exceed the initial gap. If the initial gap would be offset, efficiency requires that both sectors be included, but a lower subsidy rate be applied to the previously excluded sector.

Earlier, it was explained that to achieve a fair allocation of funds and jobs among areas, it will be necessary to vary the subsidy rate among areas. The lower the aggregate response of all participating producers in the area to subsidies, the greater the subsidy rate will have to be set to achieve a given target. If the number of producers in an administrative area is very small, collusion becomes possible. The producers can intentionally under-respond, in order to induce a higher subsidy rate for the following year. If the number is large enough so that even tacit collusion is unfeasible, then producers will respond properly to the subsidy rate.

A greater number of participating producers not only reduces the possibility of collusion; it also may reduce the variance in subsidy rates among areas. There may be a law of large numbers effect. If the program is restricted to a small number of producers, it may be that the mean response in each area will have a greater variance than if each area contains a large number of producers. The large number of producers reduces the ability of any small group with a high or low responsiveness to dominate the average, and thus, the subsidy rate required.

Even a public sector program which excludes all private firms--profit and non-profit--can be made sufficiently competitive to eliminate collusion. There are enough local governments, and state and Federal agencies in every labor market area to make collusion unlikely, even if a separate subsidy rate were set for each labor market area. If a single rate is used for a larger sub-region, collusion would be impossible, but there is an increased possibility that particular labor markets may receive less than a fair share. The principle should be that the administrative area should be large enough to prevent collusion, but beyond this, not so large that particular labor market areas within the area receive much less than their fair share. The federal program should require that all program agents hire persons regardless of their residence so that job seekers can apply to any program agent in his labor market. It will probably not be possible to

prevent local governments from favoring their constituents, but state and Federal agencies should pick up the slack in a jurisdiction where the local government creates few additional jobs.

Of course, inclusion of the non-profit sector will improve the allocation, and inclusion of the profit sector as well would be best of all with respect to this problem.

While treasury efficiency, and probably economic efficiency require including all sectors, the effect on the distribution of income must be weighed. In the earlier analysis of maintenance of effort, it was shown that significant leakage is inevitable, even if a maintenance of effort index replaces current regulations. A significant fraction of Federal employment program funds will be equivalent to unconditional grants for the program agents. The distribution of benefits from unconditional grants to private, profit-making firms is likely to favor the affluent significantly more than such grants to public, or even private, non-profit firms.

The incidence of an unconditional grant to the profit sector, the public sector, or the private non-profit sector is not a simple matter, but requires careful analysis. It seems likely, however, that much of the ultimate benefit from the grant in the profit sector will accrue to stockholders and managers of the firm, though some may accrue to workers, suppliers, consumers, and borrowers, if the grant is lent. In the non-profit sector, however, owners are unable to directly appropriate the grant. While managers' salaries may increase, it is likely that the grant will either finance additional output, or enable less taxes in the public sector. The increase in public output, which is distributed free, or less state or local taxes, are likely to benefit middle and lower income groups more than would equivalent unconditional grants to the profit sector.

If the program is restricted to the public, or even the non-profit sector, however, the loss in Treasury efficiency will be severe. The profit sector contains roughly 80% of the non-supervisory employment in the economy.[36] Instead of trying to absorb an additional 2 million into 45 million, the 2 million would have to be absorbed into only about 8 or 9 million. This

would require a much larger subsidy per employee, and a much larger total cost for any employment objective. The anti-poverty efficiency of the program coupled with the minimum wage would almost certainly be less than the alternatives, though this approach still might be favored for other reasons.

It would be most unfortunate if the large efficiency gain of including the profit sector had to be foregone due to the effect on the distribution of income. A logical response to this dilemma is to include the profit sector, but to try to tax away as much of the private windfall as possible. How to best do this involves the complex problem tax incidence.

Suppose that out of a Federal employment program expenditure of $5 billion, $2 billion was expected to be equivalent to an unconditional grant to profit-making corporations, Then one possibility would be to partly finance the program by increasing the corporation income tax so that it raises an additional $2 billion in revenue. Unfortunately, this may not be the most effective way to recapture the $2 billion. An asymmetry may be at work. When corporations receive income grants of $2 billion, they may pass little of it on to workers, suppliers, consumers, or borrowers. When after-tax profits are reduced due to an increase in the corporation income tax, however, they may respond in a way that succeeds in passing on most of the tax to workers, suppliers, consumers, or borrowers. The response of corporations to income grants, and income taxes, is a topic on which outstanding economists differ 180 degrees.[37]

At any rate, the aim should be to see whether a tax that offsets the distributional effect can be tied to the Federal employment program. This would be a more sensible solution than excluding 80% of the economy, and seriously reducing the Treasury efficiency, and probably the economic efficiency of the program. If this cannot be done, a hard choice must be made between efficiency and progressivity.

V. ADMINISTRATION, PARTICIPATION COST, AND EFFICIENCY

The method of administering the Federal employment program is not a mere detail. It is crucial to the program's impact. The central distinction is whether program agents are directly supervised by Federal project officers

or whether, as under the tax system, program agents file claims for subsidy or tax credit without supervision, and only a sample are investigated. If our tax system required each taxpaying unit to be directly supervised, taxes would have to be raised from a small number of units. Similarly, if direct supervison is required, the program will inevitably be limited to a small fraction of producers in the economy, and therefore be much less efficient.

What determines whether a program requires direct supervision? Consider the JOBS program, which involves direct supervision of participating firms by Federal project officers. Individual contracts are negotiated with each firm that participates. If the employer convinces the project officer that training costs will be high, the contract provides for larger subsidies. Training costs are difficult to measure. It would be difficult, in an ex post investigation, to determine whether the firm had in fact incurred the training costs it claimed. Training costs depend on how much time supervisors spend, how much equipment is released from maximum productivity so that the new employee may use it, and so on. While it is not clear that the project officer is able to measure these costs very well in advance, he can at least prod the employer into specifying how the training will occur, and derive an estimate in this way. When the employer specifies the training cost, he knows it will be reviewed by the project officer before the contract is approved.

A program that tries to finance costs that are difficult to measure and verify cannot be administered like the tax system. In contrast to JOBS, consider the WIN tax credit. Here, no attempt is made to finance the specific training costs involved in employing WIN persons. The method is simply to pay 20% of the wage as a tax credit. The only information required is the wage actually paid to the person. This is easily measured, and there is no ambiguity. While payroll records can of course be falsified, experience with the tax system indicates this can be held to an acceptable level. The reason is the lack of ambiguity, which increases the chance of being found in clear violation, should an investigation be conducted. If the program subsidizes training costs, any employer who claims 10% more cost than he actually incurred would be able to offer a good case to an ex post investigator. It would be

difficult for the investigator to discover how much time the supervisor actually spent with the trainee, how much this time was worth, and so on. The basic principle is that ambiguity makes indirect administration unworkable.

Once direct supervision is required, the number of program agents that can participate falls drastically, due to the limitation on the number of Federal project officers. Even if a large number of private firms had wanted to participate in the JOBS program, the government simply would not have been able to handle it. The exclusion of most firms in the economy would result in a serious efficiency loss.

The second consequence of direct supervision is that it raises the participation cost to the program agent. Even under indirect supervision, as under the tax system, a positive participation cost is incurred which reduces the effective subsidy rate below its nominal level. Participation in the WIN tax credit requires some additional bookkeeping, and some effort from management, personnel, and supervisors. If the chance of being investigated by the government is increased because of participation, this is also a cost. Thus indirect administration still entails a positive participation cost for program agents.

In the case of direct supervision, however, the participation cost may become prohibitive. Negotiating contracts with Federal project officers, inspection by these officers both prior to the contract and during the program, are costs likely to be significant to most businesses. It is well known that many businesses preferred to forego the JOBS subsidy and hire disadvantaged persons without compensation, rather than submit to the administrative process.[38] Thus, to induce the same response, the subsidy under a directly supervised program will have to be considerably larger than the subsidy under an indirectly administered program.

While there has been discussion of whether direct subsidies are better than tax credits, this issue is minor compared with the distinction between direct and indirect supervision. Whether the employer files his claim with the Manpower Administration or the Internal Revenue Service does not make much difference. There are sound reasons for preferring direct subsidies to

tax credits for all government expenditure programs.[39] It is more essential to recognize, however, that either a direct subsidy or tax credit that requires direct supervision will be far less efficient than a direct subsidy or tax credit that does not.

VI. PAYING FOR WORK, NOT ON-THE-JOB TRAINING

The Federal employment program can either subsidize hours worked, or training costs incurred. Both the JOBS program, and a proposal for tax credits for training, choose the latter. In the last section, the administrative cost of paying for training, rather than work, was highlighted. Here, additional arguments against paying for on-the-job training costs will be given.

Subsidizing on-the-job training, rather than work, often rests on the idea that the only purpose of the subsidy is to offset the lower skills of additional employees. While this is indeed one purpose, it is often not understood that subsidy would still be necessary to induce additional employment if additional employees had the same skills as those already working. Subsidy would still be needed to counter diminishing returns.

This failure to recognize diminishing returns leads to the policy that subsidy should be terminated once training has been completed. Earlier discussion of the time limit problem, however, showed that this will result in lay offs unless termination happens to be synchronized with the opening up of vacancies through natural turnover or growth. Thus if subsidy is to be for training, the time limit should be set, not by how long it takes to upgrade skills, but by how long it takes before vacancies can be expected to open up.

Beyond the time limit problem, subsidizing training, rather than work, is inefficient. Lester Thurow has underlined this point as follows:[40]

> Current training programs make a basic mistake. It is a mistake made in many government expenditure programs and regulatory efforts. They focus on inputs (training programs) rather than the desired output (higher earned incomes). As a result, they provide very little incentive to economize in training costs, to provide good training, and to accomplish the ultimate objective of raising in-

comes. Business is given incentives to training, not incentives to find the best method for raising incomes. Training programs may not be the best method to raise incomes.

It is more efficient to have the Federal government subsidize the wage, and let those firms that can afford to employ additional workers do so. These will be program agents where the net productivity of the new hires (gross productivity minus training costs) is relatively high. In general, funds will go to program agents who can productively employ persons with less training. Subsidizing on-the-job training costs directs funds towards program agents that find it costly to train persons; workers are hired in jobs where their net productivity is relatively low.

The motive behind a training subsidy is understandable. It is assumed that only if the employee receives decent training will they be less vulnerable in the future. While this is correct, the cost of training does not necessarily reflect the quality of training, or more precisely, the skill and experience the person acquires on-the-job, which determines his future position in the labor market. Effective direct supervision may succeed in improving the quality of training, and separating cost inflation from costs that are necessary for good training. Such effective scrutiny, and supervision, is in itself expensive, and also means that the program must inevitably be a small one.

Under the alternative of subsidizing the wage, regardless of training cost, the person learns whatever is necessary to do his job productively, so that he is profitable to his employer, He acquires experience on the job. To employ a person profitably, the employer must make sure he learns the skills necessary for the job. Thus, the wage subsidy without supervision may not sacrifice much with respect to the development of skills and work experience. It is certain to eliminate the cost inflation from training not really necessary to the job.

The above argument does not mean that institutional training programs are inefficient. Obviously, it is more efficient for some skills to be learned in an institutional setting, rather than on-the-job. The above

argument does suggest, however, that an attempt should be made to subsidize the output of institutional training programs--higher earned incomes of trainees--rather than the inputs utilized--namely, training costs. Whether this can be done in practice cannot be pursued here.

VII. A COMPARISON OF ALTERNATIVE PROGRAMS

In this section, six alternative Federal employment programs will be compared in light of the principles that have been developed.

1. The Public Employment Program (PEP)

The analysis of PEP in this section relates only to its impact on the problem of low earnings. Its merit as a counter-cyclical program, for which it is fairly well designed, will be discussed by this author in a forthcoming report.

PEP is seriously undermined by the maintenance of effort problem. While it succeeded in inducing a special increase in employment in its first year, it lost its ability to do so as soon as it became anticipated. In its second year, PEP's effect on employment was little better than an equivalent amount of general revenue sharing. Most program agents simply retained PEP employees instead of hiring additional employees with their own funds. Although PEP's maintenance of effort regulations were fairly successful in preventing direct substitution among employees, they did not even attempt to prevent the substitution of funds that occurred in the second year. Yet such substitution was sufficient to undermine any special stimulus to employment.

Even if maintenance of effort provisions cannot prevent substitution of funds, a special increase in employment (i.e. better than general revenue sharing) can be achieved if the cost of truly additional labor is effectively reduced. While this is guaranteed under an open-ended grant, PEP's closed-ended design prevents this from happening. In most cases, once the program is anticipated, the entire grant is used to fund jobs that would have been funded by the program agent. No Federal funds are available to subsidize truly additional employees. Additional labor is no cheaper than before, and no special incentive is created.

While PEP's effect on employment is little better than general revenue sharing, it does shift somewhat the composition of employment. This is because a portion of each PEP grant can be applied only to particular subcategories of workers, rather than to the broader category of all workers. Some PEP employees must be "disadvantaged," some must be veterans, and so on, for each program agent. As long as the PEP requirement for a subcategory is greater than the program agent would have freely hired, that group will receive a greater share of the jobs under PEP than it would under general revenue sharing.

PEP has a time limit problem. Subsidy for particular persons is not supposed to last indefinitely. Rather than specify a definite cut-off period, agents are supposed to exert effort to place PEP employees in regular unsubsidized positions. It is feared that if the time limit is toughened, a significant fraction of PEP employees will be laid off at the end of their limit.

PEP used a high subsidy rate of 90%. Since all program agents requested their maximum, many could have requested more, and created more jobs, under an open-ended subsidy of 90%. This means that the same number of jobs could have been induced under an open-ended design with a lower subsidy rate. PEP's closed-ended design was costly to the Treasury.

If PEP retains its closed-ended design and weak maintenance of effort provisions, it will remain equivalent to general revenue sharing coupled with affirmative action for particular labor force groups. If it adopts the open-ended design, its maintenance of effort problem will become urgent, as substitution of funds is no longer limited by the ceiling on the grant. A new approach to the maintenance of effort will therefore be required.

2. Job Opportunities in the Business Sector (JOBS)

JOBS is seriously undermined by the maintenance of effort problem. The program offered no effective way to prevent employers from placing JOBS employees in jobs they would have filled anyway. Like PEP, the hiring of JOBS employees may have increased employment in the short-run, but before long, the program agent simply retained the JOBS employees instead of filling vacancies (due to growth or turnover) from its own funds. Like PEP, JOBS'

closed-ended design prevents a reduction in the cost of truly additional labor. Once the maximum number of employees have been hired, additional labor is no cheaper than before. Since the JOBS employees simply fill jobs that would have been filled anyway (before too long), little additional labor is hired.

Like PEP, JOBS does shift somewhat the composition of employment. JOBS employees must be "disadvantaged." While program agents may have hired persons who meet the requirements for disadvantaged, even without JOBS, it is likely that disadvantaged persons receive a greater share of employment than they otherwise would. Thus, JOBS operates as an affirmative action program without offering a special stimulus to employment.

JOBS has a time limit problem. Subsidy is terminated when training is completed. Yet the training period may not be long enough to allow vacancies to open up, so that former trainees can be absorbed.

JOBS pays for training costs, rather than for work. As a result, it offers no incentive to economize in training costs; the greater the training costs, up to some maximum, the more the business is paid. No incentive is created to have those businesses that train most efficiently do so. Because training costs are difficult to measure, direct supervision, requiring negotiations, and individual contracts, is necessary. This limits the program to a small fraction of the private sector, since Manpower Admimistration project officers are limited. It raises the participation cost to businesses, discouraging many altogether, and requiring large gross subsidies for those that do participate.

As a private sector program, leakage of funds due to the maintenance of effort problem has distributive implications. Most businesses in JOBS receive grants that are really unconditional, except that disadvantaged persons must receive a greater share of the same number of jobs that otherwise would have been created. It is likely that Federal funds in large part benefit the owners and managers of the business.

In sum, JOBS, like PEP, has some positive impact as an affirmative action,program. The disadvantaged receive a larger share of a constant number of jobs. No special stimulus to employment is provided, however, and JOBS has other important structural weaknesses.

3. The WIN Tax Credit

Under the WIN tax credit, authorized by the Revenue Act of 1971, employers receive a tax credit equal to 20% of the wage on each graduate of the Work Incentive Program (the training program for welfare recipients) they hire.

The WIN tax credit offers no effective method for securing maintenance of effort. Employers are required to declare that they are not substituting the WIN employee for others, directly or indirectly, but such a provision cannot be effective against indirect substitution, which alone is sufficient to undermine maintenance of effort.

Unlike PEP and JOBS, however, the WIN tax credit is open-ended in design, despite a high nominal ceiling. Most employers are free to hire as many WIN persons as they wish. As a result, the cost of additional labor is effectively reduced, and despite the leakage, a special stimulus to employment is achieved. Unfortunately, the open-ended design also makes the maintenance of effort problem and the problem of substitution and lay-off bias among employees, more urgent.

With the closed-ended ceiling removed, the only check to considerable substitution is the unattractiveness of welfare recipients as employees. The tax credit of 20% may be too low to induce most businesses to substitute welfare recipients for regular employees. If businesses are not willing to substitute, however, they will not be willing to hire many additional welfare employees either. Thus, if the subsidy rate is high enough to do much good, it will be high enough to induce considerable substitution.

The WIN tax credit provides subsidy for only a special subcategory of persons--new hires who are welfare recipients--and tries to protect all employees by applying maintenance of effort provisions to all employees. While these regulations do not work, anyway, even effective maintenance of effort regulations will be unable to prevent serious inequities, as long as subsidy is restricted to a special subcategory.

The justification for this subcategory--welfare recipients--can be understood, yet remains questionable. Obviously, the purpose is to reduce the welfare rolls, and assist recipients. It may be asked, however, why the

person on welfare should have an advantage over a person working full-time at a low wage who wants to improve his job? Is it fair for non-welfare persons to be told by employers that the welfare recipient is more attractive because of his subsidy? If the tax credit is regarded as small by employers, substitution will not be serious, but the credit will have little impact. If the credit succeeds in making recipients attractive to many employers, then serious inequities will result.

WIN has a time limit problem. Tax credit for particular employees must be terminated at the end of two years (credit is only paid for one year, but the employer must retain the employee an additional year). At the end of that period, if regular vacancies do not occur, the individual will be laid off.

As a private sector program, like JOBS, the inevitable leakage means owners and managers will receive a windfall from the program. No attempt has been made to tax back this windfall by tying the WIN tax credit to a tax capable of doing this.

4. Tax Credits for Training the Unemployed

This proposal is described by Kenneth Biederman in a paper for the Joint Economic Committee.[41] Essentially this proposal has also been introduced in Congress.[42]

This proposal has the problems of the WIN tax credit, plus the inefficiency of paying for training, instead of only work (the proposal calls for financing both). No method for maintaining effort is suggested. Since only a special subcategory is subsidized--new hires who are disadvantaged, or unemployed--substitution among employees is a serious problem. If a closed-ended design is chosen, substitution is limited, but so is the ability of the program to induce an increase in employment. Under a closed-ended design, like JOBS and PEP, its contribution would be as an affirmative action program. Under an open-ended design, additional employment would be induced, but the maintenance of effort and substitution problems would get out of control.

5. An Upgrade Program

This proposal is a modification of one outlined by Lester Thurow in his Poverty and Discrimination.[43] Employers would be subsidized for raising

the wage of previously low wage persons. The base year wage of the worker must be below some level. The employer would receive payment for each hour actually worked. Subsidy could either equal a fixed percentage of the wage paid; or a fixed percentage, plus a percentage of the difference between the wage and the base wage. A minimum upgrade in the wage might be required for the employer to earn subsidy. The subsidy for a given employee would be limited to some specified number of years.

The upgrade program has several advantages. Higher earned income, not training costs, are paid for. The program can be administered like the tax system, and thus all producers in the economy can be included. It is open-ended in its design, and should therefore induce a genuine increase in employment, in high wage program agents. Treating all low wage persons alike should be an improvement over the WIN tax credit, where welfare recipients have an advantage over other low wage persons.

Unfortunately, the upgrade program is undermined by maintenance of effort, substitution and lay-off bias among employees, and the time limit problem. No attempt is made to maintain effort. Yet many persons are ordinarily upgraded. Leakage would be significant.

More serious, however, are the problems that stem from attaching subsidy to particular persons. Substitution among employees, and lay-off bias, are inevitable. When subsidy is terminated for a person, he may be laid off, if a regular slot does not open up at that time. While a maintenance of effort index could be added, there is no way to eliminate these problems in an upgrade program, in which subsidy must be attached to particular persons--namely, those with a lower wage in the previous year.

6. An Employment Incentive Program (EIP)

This proposal is offered in light of the principles developed in this evaluation, and the problems that pervade the alternatives thus far considered. The Employment Incentive Program does not pretend to eliminate all of these difficulties. EIP is designed, however, with the goal of reducing the severity of these problems. EIP can be restricted to the public or non-profit sector; or it can be applied to all producers, public and private. This

choice will be considered after the distinguishing features of EIP have been set out.

EIP will use a maintenance of effort index, rather than the standard regulations now used by all programs. The maintenance of effort norm for each program agent will be set by formula. The initial quota for a program agent will equal its number of non-supervisory employees in the period just prior to the introduction of the program. The quota or norm--the number of non-supervisory employees it must finance itself--will then vary with the change in the agent's operating cost, or perhaps other variables that more effectively predict the changes that would have occurred in non-supervisory employment had there been no program. For example, if the operating cost increases 6% over the initial level, and the average non-supervisory wage in the sub-region increased 4%, then the quota might be raised 2%. The formula could of course be more complex, if this would improve the accuracy of the index in predicting how non-supervisory employment would have changed.

The subsidy earned will depend solely on the number of non-supervisory employees on board relative to the norm. No distinctions will be made among employees; subsidy will be earned on the surplus of employees beyond the norm. The greater this surplus, the greater the subsidy. The program agent will not be subsidized for adding new hires; or new hires with special characteristics, such as head of household, disadvantaged, or welfare recipient. The agent will be subsidized for having a surplus of non-supervisory employees relative to its norm. Since all non-supervisory employees contribute to the surplus, there is no incentive to substitute one set of persons for another, or to lay off particular employees.

EIP will be open-ended. Program agents will be free to earn as much subsidy as they can, by employing as great a surplus of non-supervisory employees as they wish. The greater the surplus, the greater the subsidy earned, without limit. It must be emphasized, that the total cost of EIP can be set at whatever level Congress desires in spite of the open-ended design. The subsidy rate can be set low enough to achieve any total cost desired (in the limit, obviously, a zero subsidy will result in a zero program cost). As with tax rates, the EIP subsidy rate will have to be set so that the expected cost is at the target level.

An example will illustrate the program. While the change in operating cost is used in this example, this is only for the purpose of illustration. Other variables may turn out to be a better index. Suppose in the year prior to the introduction of EIP, a program agent incurred an operating cost of $30 million, and a non-supervisory labor cost of $7.5 million. At the average annual salary of $7,500, this corresponded to 1,000 full-time equivalent employees, (the full-time equivalent measure combines part-time employees into full-time equivalents according to the hours they work), on the average. The average might be computed by taking the number on board on the first of each month, and averaging these twelve numbers. This means that a monthly operating cost of $2.5 million corresponded to $.625 million of labor cost, or 1,000 employees. These are its base period values.

Suppose that in the first month of the program, the operating cost was $2.7 million, 8% above its base of $2.5 million. It might be assumed that the labor cost would also be 8% larger (of course, alternative assumptions might be better). Suppose the average wage in the region for that month was 5% higher than during the base year. Then it might be assumed that its average number of non-supervisory employees would be 3% higher, or 1,030 full-time equivalent employees. If the program agent averaged 1,060 employees for the month, it would be subsidized on its surplus of 30 employees. Subsidy would be computed as follows. 30 full-time equivalent employees would work about 160 non-overtime hours a month. If the subsidy were $1.00 an hour for each non-overtime hour of surplus employees, the subsidy would be $160 per employee for the month, or $4,800 for the 30 employees. If the surplus had been 31 employees, an additional $160 would have been earned. Thus, the program agent could calculate that for each additional full-time non-supervisory employee, the cost to the agent would be $160 less than the monthly salary. At an average monthly salary of $625, this would reduce the cost to the employer 25% on the average, for each additional non-supervisory employee.

This formula is used only for illustration. It might be that labor cost would not be expected to change by the same percentage as operating cost, but by a different percent. The change in non-labor cost might be a better

index than operating cost. The addition of other variables might improve the index. Careful empirical study of the current relationship between these variables and non-supervisory employment is needed in order to choose the best index possible.

Each program agent would file its request for subsidy once a year with the Manpower Administration. It would submit its base year figures, and its operating cost and employment for each month. It would claim the amount of subsidy to which it was entitled according to the formula. The Manpower Administration would pay the subsidy, after checking the computation. A sample of program agents would be investigated, as under the tax system. Thus, EIP will not involve direct supervision.

EIP would only apply to program agents covered by, or meeting the standards of the Federal minimum wage law. If the program agent paid any employee a wage less than the Federal minimum wage, it would not be eligible for subsidy. This is the simplest way to insure that EIP subsidizes only above minimum wage employment. All program agents covered by the minimum wage would qualify. Program agents not covered by the minimum would have the option of either voluntarily paying all employees at least the Federal minimum wage, in order to qualify, or foregoing participation in EIP. Any program agent filing for subsidy would have to declare that it paid all employees at least the Federal minimum wage.

On filing for subsidy, each program agent would also have to declare that it was in compliance with the Civil Rights Act, and the standards of the Equal Employment Opportunity Commission. It might be required to submit the race and sex percentages of its employees, and a brief statement of why these percentages are consistent with the above standards. If all program agents were investigated, not only would the administrative cost be huge, but even non-discriminating agents might be discouraged from participating. Thus, only a small sample should be investigated, and subsidy should otherwise not be denied. Penalties for violation, however, should be severe.

The EIP subsidy per hour should differ for each sub-region. Sub-regions should be large enough to insure enough program agents in the area to

prevent collusion. The sub-regional subsidy rate must be set by a formula, so that politics does not influence discretionary decisions. One formula might be as follows. The aim would be to set a rate so that each sub-region achieves the same ratio of the number of subsidized employees to the number of unemployed in the sub-region. This ratio can be computed for each sub-region, and the whole nation, in the previous year. Then for each sub-region with a below average ratio, the subsidy rate can be raised, and conversely for each sub-region with an above average ratio. Political factors in Congress will undoubtedly shape the formula used.

EIP has no time limit problem. Since subsidy is not attached to particular employees, but depends only on the total number of employees and the norm, there is nothing to limit.

The maintenance of effort index is not without difficulties. In the earlier discussion of an alternative approach to maintenance of effort, these difficulties were examined, and a method to reduce, though not eliminate, these problems was outlined. The aim should be to group program agents more homogeneously, along dimensions such as geographical area, industrial classification, and size. The grouping can be explicit, or implicit through the introduction of additional variables into the equation that determines the index. It should be possible to reduce leakage, and inequities, in this way. Refinement should be continued until the cost in administrative complexity outweighs the benefit.

When compared to an ideal--subsidizing only employees beyond the number that each agent would have hired anyway--the method proposed here for EIP leaves much to be desired. When compared to the alternatives available, however, it should represent a significant improvement. The index should work well enough to contain leakage, though certainly not eliminate it, and to treat program agents reasonably fairly, even under an open-ended design.

EIP can be restricted to the public sector, to the non-profit sector, or applied to all producers, public and private. If EIP is restricted to the public sector, there is no problem of setting base year values for new agents. If non-profit or profit firms are included, then new agents will pose a problem. This can be handled by requiring an agent to operate for several years before

it becomes eligible for EIP. Its average relation between operating costs and non-supervisory employment over this period will be used to set its base period values once it becomes eligible. The period must be long enough for the agent to have no incentive to use less employees relative to operating cost than it otherwise would in order to secure a favorable base. In order to be fair to new firms, and not discourage new entry, ineligibility for EIP should be compensated for by a reduction in the corporation income tax, by an amount likely to be comparable to the subsidy it would have earned had it been eligible for EIP.

If the effect on the distribution of income can be offset, it would be clearly better to apply EIP to the profit sector. The economic efficiency and Treasury efficiency of EIP will be much greater if the profit sector is included. A tax capable of taxing back much of the expected leakage in the profit sector must be tied to EIP. If the distributional effect cannot be offset, a hard choice must be made.

Some arithmetic can help clarify the choice. Earlier, it was estimated that if subsidy were confined to additional employees, and no leakage occurred, a program applying to all producers would cost about $4 billion to induce 2 million additional jobs. Each program agent would on the average increase employment about 4%. Thus, an agent that would have employed 100, would employ 104. For leakage to double the cost of the program, the norm would have to be set at 96, instead of 100. Whether this is a reasonable estimate of leakage depends on the stability of the relation between operating cost, or other variables, and employment. Careful empirical analysis is necessary to estimate leakage. Assume leakage doubles the cost to $8 billion.

When a base of 45 million non-supervisory employees is used--the number in the entire economy--it is assumed that an annual subsidy of $2,000 per surplus employee will induce an increase of 2 million. If EIP is restricted to the public sector, the base is only about 8 or 9 million. The addition of private non-profit firms will raise the base somewhat. There is no reliable way to predict the subsidy needed to induce the non-profit sector alone to absorb 2 million. It is likely that the subsidy per employee will

have to be two or three times as large. This would raise the cost of the program to $16 or $24 billion. Put another way, $8 billion would only achieve an increase of perhaps 750,000 to 1 million jobs. Clearly, the loss in Treasury efficiency is likely to be very large.

The moderate income person pays the same tax whether the $8 billion is spent in the non-profit sector, or both sectors. If the leakage occurs in the public sector, he will benefit from the public services produced, or local tax reduction. If the leakage occurs in the profit-sector, he will not gain from it; the gain will go primarily to owners and managers. The number of persons receiving adequate wage jobs will be double or triple if all producers are included. The choice is ultimately a matter of values.

7. Should EIP Be Restricted to the Disadvantaged?

One of the important features of EIP is that it subsidizes a surplus of non-supervisory employees, above the norm, without regard to the characteristics of the employees. As a result, there is no incentive to substitute new hires for current employees; or one set of persons for another. No set of employees can be labeled the subsidized ones. There is no need to certify persons as eligible for subsidy. Thus, administration is considerable simplified.

If subsidy is restricted to disadvantaged persons, there will be no way to protect non-disadvantaged persons against substitution, or lay-off bias. Since many of these will be persons whose families depend on them for support, serious inequities are inevitable. Even if the subsidy is limited to disadvantaged heads of households, most will still believe it is unfair for one household head to be preferred to another, simply because of subsidy.

It is impossible to set the subsidy so that it just compensates for the bias employers have against disadvantaged persons, or their lower productivity. Both bias and productivity will vary among employers. A subsidy large enough to offset either of these in one employer will make the disadvantaged person more attractive to another employer. Any subsidy large enough to have impact is bound to make the disadvantaged more attractive than other low-skilled persons for many employers.

Because of the consequences, the definition of disadvantaged is bound to be difficult. Wherever the line is drawn, persons with low-skill who must support families will be left out, and therefore vulnerable. Under a small, closed-ended program, opposition to the program might be contained. Since the program must be large and open-ended to have impact, reaction against the program, once its consequences for the non-disadvantaged are grasped, should be severe. Opposition should be worse than in the case of racial quotas.

EIP requires evidence of compliance with the Civil Rights Act, and the EEOC standards. This is the most that can be done without introducing discrimination in reverse, because of subsidy. It should be realized that the disadvantaged will gain from EIP even if it applies to all employees, for the additional above-minimum wage jobs must go to those who now do not have them.

8. Should EIP Be Restricted to Heads of Households?

Perhaps the most appealing special subcategory is heads of households. One economist who favors targeting subsidy on heads of households puts the issue as follows:

> Assume that there is only one additional job available and two involuntarily unemployed persons. Let one of these be a father of five and let the other be a teenage member of a high income family who is living at home (or any other secondary worker). Assume further that the teenager is slightly more productive. From society's point of view it would be better if the father gets the last remaining job; yet the employer seeking to maximize profits will make the offer to the teenager. The proposed policies are intended to create a situation in which primary family members are guaranteed those jobs that provide adequate wages.

Whether heads of households should have an advantage in the labor market ultimately requires a value judgement. It will be instructive to set out the inevitable difficulties that arise if an attempt is made to restrict EIP to heads of households. What follows is a review of the earlier discussion of substitution and lay-off bias among employees, as illustrated by the case of heads of households.

Suppose subsidy is given for each head of household beyond the mainte-

nance of effort norm. For example, if the program agent is expected to employ 100 non-supervisory employees anyway, then 100 employees are ineligible for subsidy, and only heads beyond this number can be subsidized. Thus, if 105 employees are on board, five will be subsidized, provided either of two conditions is satisfied. Either the heads must also be new hires; or they must simply be heads, regardless of when they were hired. These are the only two possibilities, and they will be considered in turn.

If the heads must also be new hires, then heads who are not new hires will be vulnerable to substitution and lay-off bias. Whenever the maintenance of effort norm must be reduced--for example, because operating cost has declined or risen slowly--an excess of unsubsidized employees is created. If employment is maintained, the employer will have an incentive to replace these employees with heads who are new hires. If employment must be reduced, the employer will retain new hires who are subsidized, and lay off unsubsidized employees. Even if we are willing to favor heads over non-heads, there is no justification for favoring heads who are new hires over heads who are not.

The other alternative is that the five employees must simply be heads, regardless of when they were hired. While this eliminates the distinction among heads, it also undermines the attempt to limit subsidy to heads. The result of this condition is to subsidize all persons beyond the maintenance of effort norm. To see this, assume that the program agent initially has 100 non-supervisory employees, of whom 50 are heads of households. Suppose five non-heads are added, bringing the total to 105. Since the maintenance of effort norm is 100, 55 non-heads, and 45 heads can be selected to fill this quota, and 5 heads can be chosen for subsidy. As long as there are heads helping to fill the quota, the addition of non-heads will free these heads for subsidy. The attempt to limit subsidy to heads will fail.

Subsidy can be effectively limited to heads only if a maintenance of effort norm that applies only to heads is introduced. Under this approach, the program agent would be subsidized for having a surplus of heads of households above a norm that applies only to heads, provided the regular maintenance of effort norm is also satisfied. The head-maintenance of effort norm

cannot replace the norm that applies to all non-supervisory employees, but must supplement it. If the regular norm were eliminated, then heads would be substituted for non-heads without limit, involving substantial outright lay-offs.

Unlike non-supervisory employment, head of household employment cannot bear a stable relation to a variable like operating costs. Heads are close substitutes for non-heads with similar skill. The norm will inevitably be arbitrary. Suppose average head of household employment in the year prior to the program is used as a base. When operating costs change relative to the base year, there is simply no way to estimate what would have happened to head employment. An arbitrary rule will have to be invoked. One rule might be: whenever the maintenance of effort norm for all non-supervisory employees increases, raise the head norm by the same amount; but whenever the regular norm decreases, hold the head norm constant. It might be reasonable to expect that with the advent of the program, employers would add heads, but lay off non-heads, whenever their employment changed. Obviously, other rules are possible.

Earlier, in the discussion of substitution among employees, it was shown that even with a maintenance of effort quota for non-heads, substitution and lay-off bias were inevitable, since the quota would frequently have to be reduced, in response to secular, cyclical, or seasonal contractions. Applying the maintenance of effort norm to all employees limits this, but it cannot eliminate it. Non-heads will find themselves replaced by heads, or laid off instead of heads, regardless of seniority or productivity (unless they are productive enough to offset the subsidy, which is unlikely). <u>This may be considered desirable, acceptable, or intolerable, but it should be clearly understood that it is inevitable.</u>

Employers will have to keep track of how many heads they are employing. Employees and job applicants will have an incentive to claim they are heads. Employers will have an incentive to overstate the number of heads, in order to earn more subsidy. An employer who is investigated can always claim that the employee misled him; if the employee is still on board, he will undoubtedly

deny this. One approach would be to require employers to collect affidavits from employees declaring they are heads of households. The employer might be required to file these with his request for subsidy, or simply have them available, should he be investigated. Some fraction of non-heads would probably give false affidavits, but employers would be required to warn the applicant that this was a Federal crime.

Because of the consequences, the decision of who to count as a head of household will be a difficult one. The program might apply only to households with at least one dependent child; also include husband-wife households without children; or also include single individuals supporting themselves. In a household with more than two members, who is the head can be left for the members to decide, or guidelines can be imposed. It is likely that in either case, the great majority of heads will be men. Since heads will tend to be substituted for non-heads, women may well be adversely affected. It is even possible that a head of household program, though neutral on its face, might be held to illegally discriminate against women. At any rate, this aspect must be weighed.

Restricting EIP to heads of households would of course improve its anti-poverty efficiency. The question is whether we are prepared to favor heads over non-heads, even when this means that non-heads will be directly replaced by heads, or laid off instead of heads, or paid less than heads for the same work, simply because of subsidy. The program will also become administratively more complex, and the maintenance of effort norms more arbitrary. Favoring heads will worsen job opportunities for women (who will usually not be heads) and teenagers. The concept of equal pay for equal work, regardless of who does it, will be amended.

It is my judgement that restriction of EIP to heads of households, all things considered, is not worthwhile. I am not ready to accept the view that heads should always be favored over non-heads in the labor market, given the full range of consequences of such a policy. The additional administrative problems also impress me as serious. The decision to apply EIP to all non-supervisory employees is compatible, however, with an attempt to guarantee a job for all heads of households. Such a guarantee could be implemented by

using a high subsidy rate for EIP, and supplementing it with special Federal work projects in which heads would be favored. While a guarantee would be made easier if EIP were restricted to heads, it can also be implemented without such a restriction.

An Employment Incentive Program that applies to all non-supervisory employees seems to me to be better than a restricted one. While EIP does not eliminate all problems, it should be an improvement over all available, feasible alternatives.

FOOTNOTES

1) U.S. Bureau of the Census, Current Population Reports, Consumer Income, Series P-60, No. 86, Dec. 1972, Table 26, p. 97.
2) Ibid.
3) Ibid.
4) Ibid.
5) Ibid., Table H, p. 8.
6) According to the above source, p. 18, the poverty threshold for a family of three was $3,229, and of four, was $4,137 in 1971. Interpolating for 3.85, the mean size of a poor family, gives roughly $4,000.
7) Consumer Income, No. 86, Table 24, p. 93.
8) In April 1970, the Bureau of Labor Statistics conducted a survey of establishments for the Employment Standards Administration (which is responsible for administering the Fair Labor Standards Act). The results were published in Wages and Hours of Work of Nonsupervisory Employees in all Nonfarm Industries by Coverage Status under the Fair Labor Standards Act, ESA, 1972. The survey included all industries except farming, domestic, and government. It showed that in the survey week, 11.2 million jobs in these sectors paid $2.00 or less. $2.00 in 1970 corresponds to roughly $2.40 in 1973, since average hourly earnings in the retail sector, which constituted one-third of the 11.2 million jobs, rose about $.40 between 1969 and 1972, according to the Economic Report of the President, 1973, Table C-30.

   Estimates of farmworkers, doemstic workers, and public employees must be added. There were 1.2 million farmworkers at all wage levels, according to the ESA report, Minimum Wage and Maximum Hours, 1971, in 1970. The Background Material on the Fair Labor Standards Act Amendments of 1972, July 1972, prepared for the Subcommittee on Labor of the Committee on Labor and Public Welfare of the U.S. Senate shows that a large percentage of all farmworkers would be under $2.00 in 1970. A rough estimate would be 0.9 million. According to the same ESA 1971 report, there were 8 million non-supervisory public sector jobs at all wage levels. A rough estimate is

that 1 million would be under $2.00 (the same fraction as in manufacturing). Finally, the same report shows 1.8 million private household workers, 87% of whom were less than $2.00. (1.5 million).

This gives a total of 14.6 million as a rough estimate of all below $2.00 jobs in 1970. Between 1969 and 1972, total employment in the economy increased about 5%, according to the Manpower Report of the President, 1973, Table A-1. Thus, 15 million is a rough estimate of the number of jobs in the economy at a point in time in 1973 that pay less than $2.40.

9) Consumer Income, P-60, No. 88, Table 4. No. 88 was published June, 1973, based on data from the survey week, March 1973.

10) Between 1971 and 1972, the poverty threshold for a non-farm family of four was raised from $4,137 to $4,275, a 3.3% increase in response to the increase in the CPI. The 1973 poverty wage would therefore be about 6.6% higher than the 1971 wage of $2.00, and thus, $2.13.

11) Manpower Report of the President, 1973, Table A-5.

12) The April 1970 report cited in fn. 8.

13) In an econometric study of the demand for low wage labor, Albert Zucker concludes, ". . .the true elasticities would not appear to be substantially different from unity" in the long-run. I am unable to comment on his techniques, or whether his result is representative. (Zucker, Minimum Wages and the Long-run Elasticity of Demand for Low-Wage Labor). Zucker refers to Reynolds and Gregory's study which found similar results for Puerto Rico (1965). All such estimates must be regarded as fairly uncertain, however.

14) Using data from the ESA's Minimum Wage and Maximum Hours report of 1972, there would be roughly 60 million non-supervisory employees in all sectors of the economy in 1973.

15) In an econometric study, Waud finds that a 1% decrease in the wage of a production worker hour in non-durable manufacturing will on the average increase man-hours worked by 0.4% (elasticity of 0.4). In durable manufacturing, the average elasticity was 1.5. The elasticity of employment should be less than the elasticity of man-hours, since man-hours can increase by adding hours per employee. (Journal of Political Economy,

May/June 1968). No attempt is made here to evaluate his technique, or to claim his result is representative. It is likely that the assumption of 0.2 is conservative, however.

16) April 1970 study, cited in fn. 8.

17) Barth, Michael, Universal Wage-Rate Subsidy: Benefits and Effects, in The Economics of Federal Subsidy Programs, Compendium for the Joint Economic Committee, Part 4, August 28, 1972.

18) Bureau of Labor Statistics, Selected Earnings and Demographic Characteristics of Union Members, 1970, 1971.

19) See fn. 11.

20) Senate Finance Committee, Welfare Reform, Guaranteed Job Opportunity, April 28, 1972, explanation of the committee decisions.

21) Haveman, Robert, Work-Conditioned Subsidies as an Income Maintenance Strategy, Studies in Public Welfare, Paper No. 9 (Part 1), prepared for Subcommittee on Fisal Policy of the Joint Economic Committee, August 20, 1973.

22) Ibid., p. 55.

23) Okner, Benjamin, The Role of Demogrants as an Income Maintenance Strategy, in same volume as Havemen's.

24) Levitan, Rein, Marwick, Work and Welfare Go to Together, 1972.

25) See the Senate Finance Committee Proposal, cited in fn. 20, or Packer, Arnold, Categorical Public Employment Guarantees: A Proposed Solution to the Poverty Problem, in the same volume as Haveman's.

26) The Senate Finance Committee proposed a maximum annual salary of $2,400, in 1972.

27) The Public Employment Program Handbook, April 1972, pp. 34-35.

28) Economic Report of the President, 1973, Table C-29.

29) Senator Cranston's bill, reprinted in Manpower Reform, 1972 of the Senate Subcommittee on Employment, Manpower, and Poverty.

30) See Waud's study, fn. 15.

31) Ibid.

32) House Ways and Means Committee, Hearings on the President's Tax Reform Proposals, 1961, Volume I, p. 6.

33) Economic Report of the President, 1973, Tables C-13 and C-14.

34) Annual Report of the Secretary of the Treasury on the State of the Finances, Fiscal Year 1970, pp. 306-308, Statement of Murray Weidenbaum, Assistant Secretary of the Treasury.

35) See fn. 33, for investment and depreciation during years before the credit was first enacted (1962), and when it was suspended (1969-71).

36) According to Table C-29, Economic Report of the President, 1973, government had about 13 out of the 73 million wage and salary workers (excluding agriculture) in the economy.

37) Pechman, Joseph, Federal Tax Policy (1971), p. 111. Pechman writes: "Unfortunately, economics has not yet provided a scientific basis for accepting or rejecting one side or the other."

38) Levitan, Mangum, Taggart, Economic Opportunity in the Ghetto, Chapter 2.

39) Surrey, Stanley, Tax Subsidies as a Device for Implementing Government Policy, in the Economics of Federal Subsidy Programs, Part 1, a Compendium of the Joint Economic Committee, May 1972.

40) Thurow, Lester, Tax Credits for Training the Disadvantaged submitted to a Brookings Institution seminar.

41) Biederman, Kenneth, Alternative Tax Subsidies for the Training and Employment of the Unemployed, The Economics of Federal Subsidy Programs, Part 4, a Compendium of the Joint Economic Committee.

42) Ibid., cited by Biederman.

43) Thurow, Lester, Poverty and Discrimination, Appendix I. While Thurow's plan differs in certain respects from the upgrade program summarized here, it is identical in its weaknesses.