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**EMPLOYEE-BASED VERSUS EMPLOYER-BASED
SUBSIDIES TO LOW-WAGE WORKERS: A
PUBLIC FINANCE PERSPECTIVE**

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Abstract

We revisit the relative merits of employee-based versus employer-based labor market subsidies. While conventional analyses stress the equivalence of these approaches, we find a modest preference for employee-based approaches. Because the population of low-wage workers overlaps, but is not identical to, the populations of low-skill or low-income workers, simple employer-based approaches are likely to be poorly targeted. Targeting may be improved by identification of eligible workers, but identification itself raises the possibility of detrimental stigma associated with the program. When combined with lower participation rates among firms than among households, the size of employer-based subsidies needed to match the outcome of an employee-based subsidy becomes quite large.

We review the empirical performance of major subsidy programs. We find that employer-based programs have been characterized by low participation rates and relatively little success. In contrast, the Earned Income Tax Credit appears relatively successful in targeting the desired population, inducing additional labor market participation, and raising incomes.

1. Introduction

There has been renewed interest in the topic of labor market subsidies to disadvantaged workers. In part, this reflects widespread concern over shifts in the distribution of earnings and income over the past two decades. At the same time, it is also driven by a reconsideration of the goals of income-support programs, and a new federalist approach to welfare programs in the United States.

Our purpose in this paper is to revisit one aspect of the design of these programs, namely the use of employer-based subsidies versus employee-based subsidies. In doing so, we seek to approach the design of labor market programs within the context of the public finance literature on taxes and subsidies. Thus, we begin by reviewing the lessons of this literature, with the goal of developing criteria for program design. We then turn toward the specifics of the target populations and programs, with an eye toward evaluating the programs found in the United States.

A central issue is the notion of a “target population”; that is, who are we trying to help? In what follows, we treat the target population as individuals from low-income families, a choice that does not coincide with either the population of low-wage workers or the population of low-skilled individuals. However, because wages are an important component of income and because skill levels determine wages, these populations overlap considerably. But, as we show below, these three groups are not perfectly interchangeable and the need to distinguish among them forms the basis for some of our conclusions.

To anticipate the bottom line, we find a modest preference for employee-based approaches. Simple employer-based approaches are unlikely to be well-targeted because low-wage workers are not necessarily either low-skill or low-income. Improved targeting requires identification of workers from low-income families. This identification comes at the expense of stigmatizing the workers, and seems to produce extremely low participation rates among firms. By our calculations, the size of employer-based subsidies needed to match the outcome of an employee-based subsidy becomes quite large. In practice, these considerations appear to be quite important. We find that employer-based programs have been characterized by low participation rates and relatively little success. In contrast, an employee-based approach such as the Earned Income Tax Credit appears relatively successful in targeting the desired population, inducing additional labor market participation, and raising incomes.

2. Analytic Framework

2.1 Basics

No discussion of labor market subsidies is complete without revisiting the basic supply and demand framework shown in Figure 1. In the diagram, $\ell^d(w)$ denotes the demand for low-skill labor and $\ell^s(w)$ denotes the supply of low-skilled labor. The equilibrium quantity of labor (ℓ^*) and the equilibrium wage (w^*) are determined by their intersection.

Consider the introduction of a subsidy to employers of low-skill workers taking the form of a tax credit at the rate of c per dollar of wage payments to these workers. As shown in the figure, this produces three important effects. First, the demand for labor shifts outward; at each level of wage payments to workers, the effective cost to firms falls. Second, the equilibrium quantity of labor used rises to ℓ' . Finally, the market wage rises to w' at the same time the cost

to employers falls to $(1-c)w'$. In effect, the workers capture a wage increase equal to $w'-w^*$, while employers benefit from a decline in wages equal to $w^*-(1-c)w'$.

Of course, in this simple setting, it is equally possible to represent a subsidy given directly to workers; in this case taking the form of a tax credit equal to e per dollar of wage earnings. Again, the subsidy produces three effects. First, the supply curve for labor shifts outward; at each wage, w , offered by firms the workers receives a total of $(1+e)w$, leading to greater labor supply. Second, the equilibrium quantity of labor rises to ℓ'' . Finally, the cost to firms (the market wage) falls to w'' , while the wage *cum* subsidy for workers rises to $(1+e)w''$.

The most important lesson from the basic framework is that for equivalent subsidies (those where $e=c/(1-c)$), the impact of the employer-based subsidy and the impact of the employee-based subsidy is *identical*. That is, $\ell' = \ell''$, $(1-c)w' = w''$, and $w' = (1+e)w''$. In this textbook setting, the economic incidence of the subsidy program does not depend upon the statutory provisions surrounding its implementation. Instead, only market fundamentals—supply and demand elasticities—are crucial to the outcome.

From the standpoint of policy, there are two important implications of this equivalence. First, *ex post*, the evaluation of the program must acknowledge the economic repercussions. Since payments to employers will help workers just as much (or little) as direct payments to the individuals, we cannot rely simply on the size and recipient of subsidy payments to decide the impacts.

Second, because the economic benefits will be determined by market fundamentals, the administrative structure of the program may be chosen to minimize the difficulties of implementation. That is, the administrative structure of the program and distributional objectives are not linked in this simple framework.

For purposes of the remainder, it is useful to pursue this example further. Notice that under the employer-based subsidy, workers gain labor income equal to $w'\ell' - w^*\ell^*$, which consists of two parts: $w'\ell' - w^*\ell^* \equiv (w' - w^*)\ell^* + w'(\ell' - \ell^*)$. The first component represents the wage gains of the labor already employed when the subsidy is instituted, while the latter part shows the income accounted for by new labor at the new (higher) wage. (As noted earlier, the same economic impact would accrue under the employee-base program where the components are $(w''(1+e) - w^*)\ell^*$ and $w''(1+e)(\ell' - \ell^*)$, respectively.)

The equivalence of employer- and employee-based programs require that the “existing” and “new” labor supply be the same—respond the same to market incentives, enter identically in program objectives, and be otherwise interchangeable.

We turn now to those situations where this may not be the case.

2.2 Extensions and Issues

The basic framework is ideal for making the point that net economic benefits have nothing to do with administrative practices in a simple setting. However, in turning from textbooks to actual programs, the framework raises as many questions as it resolves. In particular:

Objectives of Subsidy Programs. What is the purpose of a wage-subsidy program? Observation suggests (at least) three possible answers.¹ One could pose the design issue from the perspective of optimal tax theory. In that approach, the goal is to choose a subsidy (tax) so as to maximize social welfare subject to a restriction on the total size of government outlays. In designing the program, the degree to which the subsidy permits the policy maker to meet the distributional objectives would count as social benefits. However, at the same time, the deadweight costs stemming from distorted economic decisions (especially labor supply) would reduce social welfare. Accordingly, a key part of the optimal policy framework is the primacy

placed on individuals' preferences and the utility loss due to distortions of their decisions. To see the point in the context of Figure 1, note that the wage subsidy increases labor usage from ℓ^* to ℓ' . However, for each unit of labor utilized beyond ℓ^* the disutility incurred by workers (as measured by the wage necessary to induce supply, or height of the supply curve) exceeds the value of the corresponding output (as measured by the height of the demand curve). In the broad scope of affairs, the subsidy programs induces a socially inefficient mix of too much work (too little leisure) and too much consumption.

But introspection alone indicates that “workfare” and related programs are borne of the idea that individuals *should* work more; i.e., that their decisions to not work (at current wages, etc.) are not respected by the policymaker. If so, the optimal tax approach of balancing distributive goals against labor supply distributions simply makes no sense. Thus, a second approach would be to focus on the labor supply effects, but in a paternal and normative way: people *should* work, additional work is not a “bad” distortion, and the goal of the program is to expand employment *per se*. Focusing on generating new employment may have a large impact on program design. For example, in an effort to get the greatest “bang for the buck” policy makers may attempt to focus subsidies only on new hires. To the extent that subsidies are intended to be received only by marginal net expansions of employment, it leads to an emphasis on employer-based approaches where it is easier to document and track the quantity of labor.

In other policy contexts, a similar focus on the changing “quantities” without regard to the welfare or deadweight loss implications, leads to a non-linear structure very different from the basic subsidy. For example, in the literature on saving incentives, Bernheim and Scholz (1993) propose a subsidy for saving (tax-exemption of the return) for saving above a minimum threshold. In our context, this approach would manifest itself by having participants qualify for

benefits only if they work in excess of a minimum standard.² In this way, an approach focusing on quantities can lead to programs structured very differently than the traditional subsidy.

The final way in which such programs are typically evaluated is strictly on their distributional effects. That is, the program is viewed as a success if it either (a) raises the wage rates paid to the target population, or (b) raises the incomes of these individuals, without explicit weight being given to the distortions introduced by the program. Moving to the “distributional” approach places an emphasis on both prices and quantities; the goal is to raise earnings. In this setting, employee-based subsidies are easier to implement because the policy maker is not required to monitor separately jobs, hours, and wage rates.

How, then, should one proceed? In what follows, we focus on the latter approach and concentrate on the income-distributional effects of the subsidy-design problem. Programs should not be egregiously distortionary, of course. But we believe the primary objective of subsidy programs is to raise the incomes of participants. One consequence of the tactic is to orient the discussion around the *incomes* of workers, which may derive from multiple employers or in part from other members of the household. In this way, it shifts the weight of preference toward employee-based programs.

Information and Targeting. The basic framework is built upon complete information. There is a target population that is identified perfectly to policymakers. Firms are aware of the target population and can calculate the supply of these workers to their firm and the impact of the subsidy on the wage. Similarly, individuals know that they are members (or not) of the target population, can calculate the impact of the program on their net pay, and can identify firms that are participants in the program. In short, it is possible to draw the supply curve, demand curve, compute the intersection, and evaluate the outcome.

In practice, it can be quite challenging to identify members of the target population. To get a sense of the difficulty, consider the information in Tables 1 and 2, which is based on a 1994 sample of households from the 1994 calendar year in the Survey of Income and Program Participation (SIPP). The main message of Tables 1 and 2 is that it is a mistake to utilize the terms “low-wage,” “low-skill,” and “poor” interchangeably.³

From Table 1 we begin by highlighting that low-wage and poor are not the same. We define a low-wage worker as someone whose average annual wage is below \$5.93, which marks the lowest quintile of the wage distribution.⁴ We define poor as pre-tax and pre-transfer household income below the poverty line for the household size. Using these definitions, only 15.0 percent of the households with low-wage workers are poor. The mean annual, pre-transfer income of families with a low-wage earner is \$37,650 compared to \$5,654 for poor households. (Using a different measure of central tendency, the median for low-wage earners is \$31,402 versus \$5,304 for the poor.) These dramatic differences in economic status derive from large differences in labor force participation—households with a low-wage worker have an average of 2.1 workers, versus only 0.5 for poor households.

Demographic differences explain some of the difference in the rate of employment. In particular, households with a low-wage worker are much less likely to be headed by a single female (9.6 percent versus 23.0 percent) than poor households. This leads one to suspect that low-wage workers may often be secondary earners in relatively well-off households, and not necessarily the intended targets of wage subsidy programs. Table 2 explores this hypothesis by highlighting the differences between low wage *individuals* and poor *individuals*. The average share of total income contributed by a low-wage worker to total household income (\$6,028 to \$38,384) is substantially below the contribution of a worker in a poor family (\$6,197 to \$9,431). Compared to workers in poor families, low-wage workers are more likely to be teenagers (18.7

percent versus 10.7 percent). Low-wage workers have slightly higher levels of education (11.5 years versus 11.2 years) and are more likely to be white than poor workers (82.5 percent vs. 67.9 percent), suggesting that they have somewhat higher labor market opportunities than the poor workers.

Table 2 also shows that targeting “low-skilled” workers is not the same as targeting “low-wage” or “poor” workers where low-skilled is defined as having less than a high-school education. In many ways, the low-skilled workers are neither low-wage nor poor. Only 11 percent of the low-skilled workers are poor and the low-skilled workers on average earn higher wages (\$7.31) than either low-wage workers on average (\$4.02) or poor workers (\$5.60). However, the earnings of low-skilled workers contribute a larger share to the total household income than the earnings of low-wage workers, suggesting that low-skilled workers are not as likely to be secondary wage earners.

Finally, recall that most of the poor individuals are not working. One reason is that 33.4 percent of the non-working poor are elderly. These individuals may be “poor” only by our definition of pre-tax and transfer income. Moreover, they are unlikely to be the main beneficiaries of labor-market-based policies.

These computations are intended to be illustrative. Even so, they indicate that subsidizing based on observable characteristics such as education or wage rates does not guarantee a well-targeted program. Because low-wage employees, low-skilled employees, and individuals in poor households are not the same people, an employer-based subsidy to low-wage workers will not be equivalent to an employee-based subsidy to poor households. Most importantly, a subsidy to *all* low-wage employees would likely encompass secondary earners in non-poverty households, the working elderly (who may have substantial assets), and a myriad of other configurations of skills and incomes that result in a program that is not well-targeted.⁵

A prominent recent example of the employer-based approach is that of Phelps (1997). He proposes a comprehensive employer-based subsidy to “reward employment of workers in eligible, low-wage jobs” (p. 106), an approach intended to relieve the unemployment and concomitant social ills of low-income households. But the cautionary lesson of Tables 1 and 2 is that the adopted solution may not fit the diagnosed problem.

But could the employer-based approach be better-targeted? One way to circumvent the non-equivalence of low-wage and poor workers is to require that individuals identify themselves to firms participating in an employee-based program. Unfortunately, to do so raises the specter of a stigma associated with being part of the targeted population (Moffitt, 1983). Stigma is more than a theoretical possibility, as a number of experiments have shown that requiring members of the target group to identify themselves to potential employers results in substantially worse outcomes compared to when the target group does not identify themselves. (See Burtless 1985; Dubin and Rivers 1993; and Hollenbecke and Wilke 1991.)

Thus, issues in targeting raise substantial questions regarding the efficiency of an employer-based approach. The issues of stigma-inducing information flaws are compounded by the fact that a large portion of the poor population is not in the labor force at all, a topic to which we now turn.

Extensive versus Intensive Margins. The basic framework does not distinguish between movements in the quantity of labor that occur due to the hiring of more workers and those movements that result from the supply of more labor per worker. As a practical matter, the two are far from equivalent.

From the employer’s perspective, demand is likely more elastic with respect to overtime and other intensive adjustments than with respect to new hiring, where fixed costs of hiring and training are more prominent. At the other end of the market, the empirical record indicates that

labor force participation, retirement, and other “extensive” adjustments are more elastically responsive than are variations in hours per worker.

As a result, programs that subsidize *hours* are more likely to have an economic incidence residing on existing workers (inelastic supply; elastic demand), while subsidies to (new) workers may lean toward incidence benefiting firms (more elastic supply; inelastic demand). This raises a design dilemma. To the extent that the targeted workers are already employed, the hours subsidy appears preferable, because the economic benefits will tend to accrue to workers. Also, it is more easily implemented as an employer-based subsidy (where monitoring of hours is easier). However, as we saw in Tables 1 and 2, most poor individuals are not working. To the extent that the target population is not already employed, it will be preferable to induce hiring at the extensive margin. Unfortunately, the economic benefit of this subsidy is more likely to accrue to firms.⁶

Administrative/Compliance Costs. The basic framework ignores monetary and non-monetary costs to firms and households for participating in the program. Clearly, administrative costs and participation costs must be considered. The best policy will minimize efficiency costs *plus* overhead costs while meeting its distributional goal, leading to the potential for a tradeoff between being well-targeted programs with high administrative costs and those which are “cheap” to run, but spread benefits too widely.

A particularly important form of such costs are information costs. To the extent that the most important margin of adjustment is the entry and employment of new workers into the labor force, there may be important asymmetries in information. That is, households may be unaware of employer-based subsidies, thereby requiring firms to incur significant recruitment or other “advertising” costs to pursue hiring that is (otherwise) in their economic interest. However,

similar considerations appear far less important in employee-based programs, contributing less to overall participation costs incurred by the household.

Cash versus In-Kind Subsidies. The basic framework focuses on cash subsidies that raise the net wage to workers. In practice, there is considerable attention paid to the provision of non-cash subsidies to work, especially the provision of health insurance and child care. Recent evidence (see, for example, Gruber (1994)) suggests that non-cash subsidies are capitalized into wages on a dollar-for-dollar basis. At the conceptual level, at least, this permits us to treat cash and non-cash subsidies in the same way.⁷

2.3 An Expanded Framework

To guide the remainder of the discussion we expand slightly on the basic framework to incorporate several of the features noted above. Given the wide variety of issues, it is unlikely that any single model will clearly explain the choice between employer-based and employee-based approaches to the problem. Nevertheless, it seems useful to adopt a structure for the issue, at least to provide some guidance into categorizing the features of extant programs. First, we address the fact that participation in subsidy programs is voluntary. Thus, both firms and workers must have economic incentives to be involved in the subsidy program. Second, we incorporate the notion of compliance and/or participation costs explicitly in our discussion of the programs.

To begin, return to an employer-based subsidy. For simplicity, assume that the subsidy takes the form of a credit at the rate c per dollar of wage payments to the targeted workers. This has the immediate effect of lowering the employers' cost of labor from w to $w(1-c)$, where w denotes the wage paid to workers.⁸ In contrast to the basic framework, however, there are further effects.

First, to the extent that being identified with the targeted population is associated with stigma, the need to identify the recipients acts to inhibit the supply of this type of labor. In the context of the diagram, there is an upward shift in the supply curve because the effective wage received (at any levels of labor supply) falls to $w/(1+s)$ where s is the “wage-equivalent” rate of stigma. Put simply, it is the percentage decline in the wage as a result of the need to associate with the program. The net effect of the subsidy *cum* stigma is to change the cost of labor to the firm from w to $w(1-c)(1+s)$. Obviously, unless c exceeds $s/(1+s)$, there is no effective subsidy as a result of the program.

Assuming that c is sufficiently large, the outward shift in demand exceeds the shift backward in supply, the quantity of labor rises from ℓ_b (“before”) to ℓ_a (“after”). As shown in Figure 2, this is associated with a rise in the wage payment to workers from w to w' (which is, in turn, valued by workers at $w'/(1+s)$). From the perspective of firms the cost of labor falls from w to $w'(1-c)$.

Will firms participate? If the fixed costs of running the program are F , then the firm will net an economic advantage if

$$\int_{\ell_b}^{\ell_a} [MP_{\ell} - w'(1-c)]d\ell + [w - (1-c)w']\ell_b \geq F. \quad (1)$$

That is, the sum of the surplus on new labor plus the cost-saving on extant workers must exceed the fixed costs. Clearly, firms with low labor productivity and/or high fixed costs will be less likely to participate. To further clarify, assume that $MP_{\ell} = w$ —i.e., that we are operating in the region of the initial equilibrium. If so, this reduces to

$$[w - (1-c)w']\ell_a \geq F \quad \text{or} \quad w - (1-c)w' \geq \frac{F}{\ell_a}. \quad (2)$$

A firm will participate if the wage-saving per worker exceeds the fixed costs per worker. The likelihood of participating will rise with the size of the subsidy (c), and will decline as the fixed

costs (F) decline. Recall that w' is valued at $w'/(1+s)$ so that the larger is s the lower is the likelihood that the firm will participate.

For comparison, let us turn now to an employee-based system. Individuals choose their participation based on the utility function $U(C,L-h)$ where C is consumption, L is the endowment of leisure, and h is labor supply. If the program consists of an earnings credit at a rate e , and A is non-labor income, then in the absence of the program the individual will have consumption of

$$c_b = wh_b + A. \quad (3)$$

In contrast, in the presence of the program it will be given by

$$c_b = w''(1+e)h_a + A \quad (4)$$

where w'' is the wage paid by firms. The individual will participate if the utility gain is sufficient to outweigh the fixed compliance costs, G (measured in utility terms) of the program.

That is, if

$$U(w''(1+e)h_a + A, L - h_a) - G - U(wh_b + A, L - h_b) \geq 0 \quad (5)$$

To gain a better feel for the decision, we can linearize around the no-program level of utility, yielding

$$U(w(1+e)h_a + A, L - h_a) \approx U(wh_b + A, L - h_b) + U_C \{w''(1+e)h_a - wh_b\} - U_L \{h_a - h_b\}. \quad (6)$$

Thus, an individual will participate if:

$$w''(1+e)h_a - wh_b - \frac{U_L}{U_C}(h_a - h_b) - \frac{G}{U_C} \geq 0 \quad (7)$$

Note that if the individual is supplying labor in the absence of the program U_L/U_C is equal to the wage. However, if the individual is not participating (as would likely be the case for the target population) this equals the reservation wage, w^* , needed to induce participation. If, as before, we examine the participation decision in the vicinity of $w^* = w$, the individual will participate if

$$[w''(1+e) - w^*]h_a \geq \frac{G}{U_c} \text{ or } [w''(1+e) - w^*] \geq \frac{G}{U_c h_a}. \quad (8)$$

As with firms, individuals will participate if the wage incentives (in this case increases) are sufficient to outweigh the fixed costs per unit. Examining this condition more closely, it is apparent that individuals with higher reservation wages (e.g., single mothers or others with a high value of leisure) will be less likely to participate. It follows that individuals will be more likely to participate in the program as their reservation wage falls, or as the subsidy rate rises.

Similarly, as the complexity (as measured by G) or other overhead aspects of the program become smaller, individuals will be more likely to participate.

Equivalence Revisited. Are the employer- and employee-based approaches still equivalent? With the added detail, this appears far less likely. For the program to be equivalent, they must induce equal changes in the labor market. Specifically, if N_f is the number of firms and p is the probability that a firm participates, the post-subsidy labor demand under the firm program is given by $pN_f \ell_a$. Similarly, if r is the fraction of individuals who participate out of the N_h households, the post-program employment is $rN_h h_a$. Thus, we require

$$p(F, c, s)N_f \ell_a = r(G, e)N_h h_a \quad (9)$$

where we show the dependence of p and r on the structure of the programs. In turn, ℓ_a and h_a depend upon the elasticities of labor demand and supply (respectively) and the fall (rise) in the net wage facing firms (households).

There are many dimensions along which this equivalency may break down. First, the employee-based approach does not raise the possibility of supply-inhibiting stigma from forcing workers to identify themselves as, for example, welfare recipients. Second, the determinants of firms' participation in the low-wage subsidy program (productivity, administrative costs) are not

mirrored by the determinants of individuals' participation in the employee-based subsidy program (reservation wages, complexity) leading to differences in p and r .

We can add a little analytic detail to this introspection. Assume for the moment that $p(F, c, s)$ and $r(G, e)$ are constants and recognize that $h_a = (1 + \hat{h})h_b$ and $\ell_a = (1 + \hat{\ell})\ell_b$, where \hat{h} and $\hat{\ell}$ are percentage changes in labor demand and supply, respectively. In turn, recognize that changes in the quantity of labor derive from changes in wages induced by the program parameter. That is:

$$\hat{\ell} = \frac{\varepsilon^d \varepsilon^s}{\varepsilon^d - \varepsilon^s} (c - s), \hat{h} = \frac{\varepsilon^d \varepsilon^s}{\varepsilon^d - \varepsilon^s} (e) \quad (10)$$

where ε^d is the wage elasticity of demand and ε^s is the wage elasticity of supply. Finally, note that $N_f \ell_b = N_h h_b$ if the labor market is initially in equilibrium and collect terms to yield

$$p \left(1 + \frac{c - s}{\beta} \right) = r \left(1 + \frac{e}{\beta} \right) \quad (11)$$

where

$$\beta = \frac{\varepsilon^d - \varepsilon^s}{\varepsilon^d \varepsilon^s}.$$

As a final step, we can rearrange equation (11) to highlight the relationship between equivalent-outcome employer-based subsidies and employee-based subsidies. Specifically:

$$c = s + \left(\frac{r}{p} \right) e + \beta \left(\frac{r}{p} - 1 \right) \quad (12)$$

The expression in (12) has several implications for the design of a subsidy program. Notice first that for any given size of employee-based subsidy (e) the presence of stigma effects (s) directly raises the size of the employer subsidy necessary to have equivalent effects. Second, note that if participation by workers in the employee-based program exceeds that by firms in the employer-based program, then $(r/p) > 1$ and c must exceed e , *ceteris paribus*. Essentially, even if

there is no change in behavior lower (relative) participation necessitates a higher rate of subsidy to achieve the same outcome.

If the supply and demand curves are perfectly inelastic ($\epsilon^d = \epsilon_s = 0$), this is the entire story. However, if the supply and demand curves are not perfectly inelastic, the differential take up rates influence the differential in c and e in a second way. Specifically, noting that $\beta \geq 0$, if $(r/p) > 1$ this raises the employer subsidy necessary to generate the equivalent effect of a given employee subsidy.

Finally, consider the magnitude of these effects. For modestly elastic demand ($\epsilon^d = -1.1$) and inelastic supply ($\epsilon^s = 0.6$) β is roughly 2.5. If $r = p$, this has no impact. However, as noted below, experience suggests $r > p$ and, perhaps, dramatically so. If $r = 0.85$ and $p = 0.80$, then the employer-equivalent subsidy for $e = 0.10$ is $c = 0.26$. That is, the employer-based subsidy must be 2.5 times greater. Empirical evidence indicates an even greater disparity between r and p , making the size of an effective employer credit prohibitively large.

2.4 General Equilibrium Caveats

Even our expanded framework is cast entirely in a partial equilibrium setting. From a policy design perspective, this raises two issues. First, it may lead to misleading inferences regarding the economic incidence of subsidies. Viewed from an economy-wide perspective, firm-based subsidies to low-wage workers affect only those low-wage workers do not employed in participating firms. As is well known from the work of Harberger (1962), there are circumstances in which the incidence of such a “partial factor tax” (subsidy) may be shifted to alternative factors (for example, capital or high-wage workers). Specifically, if the subsidized sector (participating firms) expands dramatically and uses the non-subsidized factors intensively enough, the return to non-subsidized factors may rise relative to the low-wage workers.

Even if the incidence resides with workers, it is spread across *all* workers; not just those in the subsidized sector. Thus, while the characteristics of the program may affect the number of participating firms, and thus the size of the subsidy, the economics indicate that workers benefit as a whole.⁹

The second lesson from general equilibrium settings is the role of distorting subsidies or taxes in optimal program design. *Ceteris paribus*, the basic moral is that one should avoid the use of production-distorting taxes on factors. That is, one should choose policies to leave production undistorted (thereby maximizing output) and achieve distributional objectives through either explicit (lump-sum if possible) transfers or carefully chosen commodity taxes. Notice that this dictum derives from a framework in which policies respect the preferences of individuals and seek to minimize deadweight loss.

More recent research (see, Naito (1998)) indicates that even in this setting if it is not possible to costlessly identify the recipients of income support, then it may be useful to provide production subsidies to meet distributional objectives. Specifically, it may be optimal to supplement a redistributive tax system (in our setting an employee-based system) with subsidies to the production of goods in which the target population is intensively employed. Notice that in our context, this implies that an employee-based earnings subsidy system would be coupled with a subsidy to the employers of low-skill workers, but that the subsidy would not be tied to the use of low-skilled workers *per se*.

3. Characteristics of Subsidy Programs: A Selective Survey

Current wage subsidy policies take many forms in their goal of making work pay. Most employee-based wage subsidies, including the federal and state Earned Income Tax Credits (EITCs), target low-income families. Because these programs are administered through the

income tax system, identifying low-income families is relatively easy. Not surprisingly, employer-based wage subsidies are more highly targeted. They specifically target individuals who are at risk for long term labor force detachment into the labor force, which may result in the participants being stigmatized. For example, the Work Opportunity Tax Credit (WOTC) and several state income tax programs limit the credit to employers hiring welfare recipients or unemployed individuals. Many states use wage subsidies in their welfare reform initiatives following the Personal Responsibility and Work Opportunity Act (PRWORA) of 1996, which placed strict requirements on states to move their welfare populations into the labor force. The states use employer-based “grant diversion,” in which the AFDC and food stamp benefits of a former welfare recipient are paid to the participant’s employer in the form of a subsidy. In these cases, the wage subsidies are part of broader policies that often include job placement, mentoring, and subsidies for work expenses, health care and child care.

This section describes a sample of existing employee- and employer-based wage and earnings subsidies in the United States.¹⁰ We describe their characteristics within the framework of our model - highlighting characteristics that distinguish employee- from employer-based subsidies. Many other countries currently have wage subsidy programs; unfortunately, a comprehensive discussion of these programs is beyond the scope of the paper.¹¹

3.1 Employee-Based Approaches

Earned Income Tax Credit. The EITC is the major employee based earnings subsidy. The EITC is a refundable income tax credit targeted primarily at low-income families. A tax-unit’s credit increases with earnings until it reaches a maximum. Over a range of income, taxpayers receive the maximum credit, and then the credit is phased out with additional income above a certain amount (See Table 3 for the current parameters of all programs discussed in this section). The refundable credit is paid most frequently as a lump sum in a tax return.¹² Childless

taxpayers are only eligible if they are between ages 25 and 65 and benefits are substantially lower than for families with children, but there are no additional categorical requirements for eligibility.

In addition to the federal EITC, ten states have earned income tax credits: Iowa, Kansas, Massachusetts, Maryland, Minnesota, New York, Oregon, Rhode Island, Vermont, and Wisconsin (Johnson and Lazere, 1998). These states calculate their credits as some percentage of the federal EITC. The EITC is non-refundable in three of these states, making it less well-targeted toward low-income families.

One of the key parameters in our extended model is the participation rate in each type of program. Using 1990 data, a time during which the EITC was much smaller than its current level, Scholz (1994) finds that approximately 85 percent of those eligible for the EITC received it in 1990.¹³ This participation rate is well above other income transfer programs such as Food Stamps or the former Aid to Families with Dependent Children.

Participation rates may be high because there is no stigma attached to participation. Employees simply claim the EITC by filing personal income taxes and their employers need not know their family income status. Low participation costs may also contribute to these participation rates. For families that file taxes, the Internal Revenue Service will calculate their EITC.

The low costs of filing have historically been accompanied by a high rate of noncompliance.¹⁴ A 1997 report of the Internal Revenue Service (1997) estimated that 26 percent of EITC dollars were overclaimed in 1994—a substantial improvement from the 1988 estimates. The primary source of error is taxpayers claiming children who did not live with them for more than half the year (Scholz, 1997).

Earlier we argued that it is easier to target the low-income population with an employee based age subsidy. The EITC is based on the income of the tax unit, which is typically the

family—this avoids subsidizing low wage workers in high income families. The age restriction for childless taxpayers guarantees that teenagers and elderly, who are likely to be secondary earners, are not eligible for the credit. There is some evidence that the EITC is well-targeted at demographic groups who are thought to be at risk for long term labor force detachment. For example, estimates in the early 1990s suggest that the between 47 and 60 percent of eligible participants were single mothers (Eissa and Leibman, 1996 and Whitehouse, 1996).

The EITC is not well-targeted in one obvious way. To minimize labor supply disincentives, the breakeven income of the EITC is above the poverty line, so many nonpoor families receive the EITC. Assuming that the EITC does not cause any behavioral changes, Liebman (1998) estimates that under 1996 EITC rules, 80 percent of households with income between 100 percent and 150 percent of the poverty line receive the EITC; however, very few EITC dollars go to taxpayers with incomes more than 200 percent of the poverty line. Scholz (1994) estimated that approximately 50 percent of the EITC payments in 1996 would go to families that are not poor.

There are at least three additional ways in which the EITC may not be well-targeted. First, the credit is based on family earnings rather than wages, so it is possible that the credit is subsidizing high-skilled individuals who work few hours. Secondly, Wiseman (1995) argues that the EITC is not well-targeted at very low-income households who are liquidity constrained, because it is most frequently paid in a lump sum at the end of a year. For these families, the monthly welfare payments are more attractive than subsidized work. Similarly, if a family's income is sufficiently low, they are not required to file income taxes and they may not receive the EITC because they unaware of the benefits of filing taxes. Finally, if the household unit is different than the income tax unit (legal spouse and dependents), the EITC may be subsidizing families who are not in low-income households. This may be particularly relevant for unmarried,

cohabiting couples whose joint income would make them ineligible for the EITC if they were to marry.

The structure of the EITC highlights many points in our discussion about the design dilemma over the intensive and extensive margins. Theoretically, the credit has an unambiguously positive effect on labor force participation for families that are not in the labor force and this prediction is supported in empirical research. For example, Dickert, Houser and Scholz (1995), estimate that the EITC expansion between 1993 and 1996 would increase the increases wages of single parents by 15 percent and increase the probability of working by 5.6 percentage points. Eissa and Leibman (1996) estimate that the labor force participation of single mothers increased 2.8 percentage points relative to the labor force participation of women without children (who were ineligible for the EITC) following the expansion of the EITC in the Tax Reform Act of 1986. More recently, Meyers and Rosenbaum (1998) find that the EITC explains 39 percent of the increase in the labor force participation rate of single mothers between 1984 and 1996. Thus, to the extent that the important dimension of labor supply is the decision to work at all, the EITC appears well-suited to meet the subsidy objectives.

However, the predicted labor supply effects of the EITC on the intensive margin are more ambiguous. In the subsidy range of the credit, the substitution effect provides incentive for individuals to increase labor supply but the income effect provides incentive to decrease labor supply. For taxpayers in the flat range of the credit, the income effect provides an unambiguous incentive to decrease labor supply and for taxpayers in the phase out range of the credit, the substitution and income effects will work together to discourage labor supply. Secondary earners have large incentives for lowering their hours or exiting the labor force because their earnings would place the family in the EITC's phase-out range or leave the family ineligible for the EITC. In summary, the EITC is not well-designed for increasing hours worked.

For the most part, the predictions are upheld in the empirical literature. Based on labor supply elasticities from existing literature, Dickert, Houser, and Scholz (1995) show that labor market participants, especially secondary wage earners, are likely to decrease their hours as a result of an expanded EITC. They also show that the EITC is likely to induce secondary earners to drop out of the labor force. Eissa and Hoynes (1998) find that the EITC expansion lowered the labor force participation rate of married women and reduced the hours worked by married men and especially women. They estimate that overall, family labor supply fell as a result of the EITC expansions. One exception to these findings is Eissa and Leibman (1996), who find that the expansion of the EITC after the Tax Reform Act of 1986 had little effect on hours worked for single parents. The bottom line is that the EITC is best suited to induce labor force participation of non-working individuals.

We are left with the question of the distributional impacts of the EITC. Ignoring any behavioral responses to the EITC, the Center for Budget and Policy Priorities (1998) shows that the EITC moved 4.6 million people, including 2.4 million children, out of poverty in 1996. This accounts for 8 percent of the pre-transfer poor (14.5 percent of the pre-transfer poor children). Liebman (1998) estimates that the EITC offsets 12 percent of the total poverty gap for households with children.

Our earlier discussion suggests that ignoring behavioral responses may be inappropriate, because individuals can actually increase their income while working less. Eissa and Liebman (1996) finding that single women did not change their hours in response to an expansion of the EITC suggests that earnings of those in the labor force increased. Eissa and Hoynes (1998) find that on average the expansions in the EITC beginning in 1986 increased income by an average of \$828 for married couples, 10 percent lower than if there were no changes in labor force participation. However, they note that this is an upper bound because it does not account for the

reduction in hours worked by taxpayers who remain in the labor force, which are quite large for some categories of individuals.

New Hope Project. One small-scale employee-based wage subsidy that has received national media attention is the New Hope Project in Milwaukee, Wisconsin. This non-profit organization funded by national, state, and local organizations began in 1994 (Brock et. al., 1997). Individuals are eligible if they reside in targeted neighborhoods in Milwaukee, their income is below 150 percent of the poverty line, and they are willing to work 30 hours a week. The program provides a monthly earnings subsidy when the participants' earnings, combined with the federal and state earned income credits, are below the poverty line.¹⁵ This program also subsidizes child care and health insurance for participants and provides job search services. Participants in the New Hope project can choose to utilize any of the services individually or together. Empirical research on the program's effectiveness is underway.

3.2 Employer-Based Approaches

Income Tax-Based Subsidies. There are currently two federal employer-based wage subsidy programs: the Work Opportunity Tax Credit (WOTC) and the Welfare to Work Tax Credit (WTWTC). Some states, including Maryland, Massachusetts, Missouri, Pennsylvania, and South Carolina, in addition to the District of Columbia, also offer tax credits for hiring targeted populations. The credits pay a fraction of wages up to a maximum. Maryland's tax credit is a special case as it also provides a credit for expenses incurred by the employer for child-care expenses that enable the employee to be hired (Maryland Comptroller of the Treasury, 1998).

Administered through the tax system, the targeted populations include populations at risk for long-term labor force detachment such as, welfare recipients, at-risk youths, ex-felons and veterans. The federal credits are available to firms who hire members of these targeted groups

within a specified time range. This time restriction, along with a requirement that the employees cannot be rehires, attempts to limit the subsidy to marginal hires.

These income-tax credits have very strict compliance requirements. Employers must begin to certify the eligibility of the employee by the day the individual begins work and have completed the process by the 21st day after the individual begins work (Internal Revenue Service, 1998a and 1998b). Eligibility is often dependent on the employee being paid some minimum wage and working a minimum number of hours. In addition, both the federal and state programs limit the time a firm can claim the same employee - typically to one or two years.

The current incarnations of the income-tax employer-based wage subsidies are too recent to evaluate their effectiveness. However, the designs of the current subsidies are similar to the Targeted Jobs Tax Credit (TJTC), which was in place between 1978 and 1997. We base our discussion primarily on Katz's (1996) thorough review of this program.

A striking feature of the TJTC is the particularly low participation rate—in fact, estimates of the participation rate in the TJTC are all below 10 percent. For example, Katz (1996) estimates that in the mid to late 1980s, approximately only 9 percent of the eligible that were hired were ever claimed and Lerman (1982) estimates that fewer than four percent were claimed through 1980.

Two explanations for the discouragingly low participation rates have been offered in the literature. First, to claim the credit, the employer has to know the employee is a member of the target group and, as we showed in our model, this identification may cause stigma and lower program participation. This hypothesis is supported by the experiments we mentioned earlier. With respect to the TJTC, Bishop and Kang (1991) found that many employers cited the anticipated low quality or skill of the targeted group members as a reason for not recruiting

among this group. These issues do not arise in the EITC when employers do not have the same level of information about their low-wage employees.

Strict compliance requirements are second explanation for the low participation rates in the TJTC. Our model also suggests that high compliance costs result in low participation and this is supported by the TJTC experience. For example, Katz (1996) notes that many of the firms who participated in the TJTC were large firms who could afford the fixed cost of contracting with management assistance companies to review and certify the eligibility of potential employees.

Because the existing employee-based wage subsidies require employees to identify themselves as members of the targeted group and because the compliance costs are similar to those in the TJTC, we hypothesize that current wage subsidies will also be plagued by very low participation rates.

One obvious benefit of requiring employees to be members of a categorical group is that the TJTC and its current counterparts are better targeted than the EITC. By definition, the employer-based wage subsidy recipients are members of groups at risk for long-term labor force detachment.

With respect to distributional impacts, the TJTC was found to have a positive effect on employment among the targeted groups. Using a statutory change in the TJTC that lowered the maximum age for eligible youths, Katz (1996) shows that the TJTC had a modest effect on employment for disadvantaged youths. This result is generally consistent with earlier research and suggests that, like the EITC, employer-based subsidies have the ability to increase labor supply on the extensive margin

Wage Subsidies in Welfare-to-Work Programs. Welfare reform initiatives often include wage subsidies. States practice “grant diversion,” in which they subsidize employers who hire welfare recipients with funds otherwise used for welfare benefits (Temporary

Aid to Needy Families [TANF] and Food Stamps). Florida, Georgia, Mississippi, Missouri, Oregon, and North Carolina all have these policies. These subsidies are time-limited and often have strict requirements about minimum employment lengths. The targeted individuals are often individuals in areas with particularly high unemployment rates or those who have not found unsubsidized work after a period of time. In addition, the wage subsidies are part of a larger package of job search services that often include child care and job training.

The 21st Century Communities Program in Kansas City, Missouri includes an employer-based wage subsidy that has received national attention. Participation is mandatory for welfare recipients in the targeted regions of Kansas City. Like the state programs, the wage subsidy is funded with TANF and Food Stamp benefits.

These programs are still too new to conduct a thorough evaluation. However, an informal phone survey of program administrators suggests that the programs are not highly utilized. An administrator from the Minnesota Family Investment Plan (MFIP) said few counties implemented grant diversion programs and, of the 39,700 participants in the MFIP, only 20 participate in grant diversion. Administrators from the Florida and Georgia programs both acknowledged that the participant levels in grant diversion are very low. It is possible that stigma, participation costs, or lack of information are responsible for these low take-up rates.

Katz (1996) suggests that in the past wage subsidies through welfare-to-work programs have been the most successful of the employer-based targeted wage subsidies. One reason may be their combination of the wage subsidies with additional support services and subsidies. The National Supported Work Demonstration in the 1970s, for example, was found to increase the earnings of randomly assigned participants by over 20 percent in the two years following the end of the program. These broad packages of services and subsidies also complicate an evaluation of the wage subsidy in isolation.

4. Lessons for Policy Design

The goal of this paper is to provide an analytical framework within which to compare employee based wage subsidies and employer based wage subsidies. Only in the most basic setting are the two approaches equivalent. In practice, wage subsidies paid to low-wage workers do not necessarily reach low-skilled workers or poor households. Therefore, to achieve distributional objectives using a wage subsidy to the employers the program must be very highly targeted. This restriction leads to stigmatization of the potential employees and results in a program that reaches a very low percentage of eligible individuals. Although participation rates are very low, empirical evidence from previous employer based wage subsidies suggests that these subsidies do have the potential to raise the employment levels of the targeted groups. Unfortunately, low participation implies that the size of an employer-based subsidy must be quite large in order to be equivalent to an employer-based approach.

Wage subsidies paid to employees do not require the same strict targeting. For example, the income tax system is a mechanism for identifying low-income families. The EITC is available to all families with income below a given level and the participation rate in the EITC is very high. The more universal coverage of the employee-based wage subsidy comes at the cost of being less well targeted than an employer based wage subsidy. To minimize labor force disincentives, many nonpoor families receive the employee based wage subsidies.

However, existing empirical evidence suggests that the EITC has had widespread success at raising the labor force participation rate of many primary earners, including single mothers. We doubt that an employer-based subsidy could overcome the barriers it creates to reach a similar magnitude.

Endnotes

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1. See, also, Lerman (1982) for an excellent discussion of these issues.
2. See Blinder and Rosen (1985) for an early discussion of how “notches” or non-linearities may dominate program design when evaluated from a “bang for the buck” viewpoint rather than a utility perspective.
3. The SIPP surveys households every 4 months. We base our statistics on household composition in December of 1994 and use the household head in that month to aggregate over a year. The household information is based on the information reported by the head. We, therefore, drop households whose heads were not in the sample for the entire year (approximately 20 percent of the sample) because the annual income variables would be incomplete. We only include individuals in the summary statistics if they are present for the entire year when we calculate summary statistics for individuals. Additionally, we drop approximately 200 persons because they do not accurately match up with a household head or because they are in a household that reports negative pre-transfer income. Finally, we exclude self-employed individuals from the individual statistics due to the difficulty of measuring wages.
4. We use point-in-time measures of wages to be consistent with other data sets like the Current Population Survey. For individuals who do not report a wage, we calculate their wage as monthly hourly earnings. The results are similar when we use average annual wage. We define workers in our sample as individuals who report positive hours and earnings.
5. This has also been the topic of recent minimum wage discussions including Burkhauser et. al. (1996) and Neumark et. al. (1998).
6. Of course, “firms” are not the ultimate beneficiaries as all economic value must accrue to either customers, workers, or owners.
7. This ignores the issues in employees’ valuation of non-cash benefits. That is, we ignore the overprovision of benefits that would lead employees to value them at below their market price.
8. Figure 2 makes no distinction between the intensive and extensive margin; this is, between the number of low-wage workers and the hours of work for each. As an

empirical matter, we anticipate that the supply elasticity largely reflects the extensive margin and focus the development on the decision to work rather than the allocation of hours of work. Thus, it is probably best to think of w as the annual wage and c as the rate of subsidy per worker.

9. In the Harberger model, aggregate low-skill labor is fixed in total supply. In our setting, it is likely to be somewhat elastically supplied, however, it is the aggregate elasticity (not any sector-specific elasticity) that is relevant for computing the net economic benefit to workers.
10. See Katz (1996) for a thorough survey of former United States employer-based wage subsidies.
11. See Robertson, Heather (1994), D.H. Greenberg, and P.K. Robins, D.H. Greenberg, D.R. Meyer, C. Michalopoulos and P.K. Robins, D.A. Green and W.C. Riddell, Card and Robins, the New Deal program in the United Kingdom. <http://www.newdeal.gov.uk/homesub3.asp>.
12. Employees have the option to receive the EITC with their paychecks. According to the General Accounting Office (1992), only 0.5 percent of EITC recipients get the credit in advance.
13. Noncompliance has been a large concern with the EITC. Scholz (1994) estimates that 30 percent of the EITC claimants were ineligible in 1988. The General Accounting Office (1997) reports that in 1994, of the \$17.2 billion in EITC claims, \$4.4 billion was overclaimed.
14. Liebman (1998) cites two sources that suggest that the administration cost of the EITC are also very low; between 1 and 3 percent of benefits paid (compared to 16 percent for AFDC).
15. Participants are encouraged to apply for the federal and state EITCs.

Table 1. Descriptive Statistics for Poor and Low-Wage Households

	Low-Wage^a (n = 2,847)		Poor (n = 1,716)	
	Mean	Standard Deviation	Mean	Standard Deviation
Percent Poor	15.0	35.7	100.0	0
Earnings ^b	\$32,189	26,903	\$2,823	4,762
Pre-Transfer Income	\$37,650	27,081	\$5,654	4,755
Post-Transfer Income	\$38,121	26,788	\$7,947	4,754
Poverty Gap	-\$23,954	26,195	\$5,925	5,023
Number of People	3.5	1.6	2.7	1.9
Number of Children	1.1	1.3	1.1	1.5
Number of Workers	2.1	1.0	0.5	0.7
Percent Headed by Single Mother	9.6	29.5	23.0	42.1
Percent Headed by Married Couple	68.2	46.6	25.7	43.7

^aWe define a low-wage worker as someone whose average annual wage is below \$5.93, which marks the lowest quintile of the wage distribution

^bAll income and earnings amount are based on annual 1994.

Source: 1993 Panel of the Survey of Income and Program Participation, individuals age 14 years or older. All calculations use SIPP sample weights.

Table 2. Descriptive Statistics for Poor and Low-Wage Individuals

	Low-Wage Workers (n = 3,408)		Poor Workers ^a (n = 740)		Non-Working Poor (n = 1,902)		Low-Skilled Workers ^b (n = 2,677)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Percent Poor	15.3	36.0	100.0	0	100.0	0	11.3	37.2
Wage	\$4.32	1.41	\$6.00	3.68	0	0	\$7.86	11.03
Hours Worked ^a	972	704	1,005	686	0	0	1,250	766
Earnings	\$4,424	3,668	\$6,197	5,694	0	0	\$10,985	10,362
Pre-Transfer Income	\$6,028	5,639	\$6,994	5,737	\$2,342	3,141	\$12,194	10,915
Post-Transfer Income	\$6,208	5,618	\$7,612	5,615	\$4,174	3,473	\$12,299	10,870
% Receive Transfers	6.7	25.0	19.9	39.9	42.8	49.5	3.9	19.4
Hhld Pre-Transfer Inc.	\$38,384	27,102	\$9,431	5,541	\$5,725	5,122	\$38,163	24,122
Poverty Gap	-\$24,197	26,239	\$5,480	4442	\$6,969	5711	-\$23,960	23,371
Percent Disabled	10.7	30.9	13.3	33.9	27.9	44.8	10.0	30.0
Percent Teenagers	28.7	45.2	10.7	30.9	13.4	34.1	30.1	45.9
Percent Elderly	7.1	25.7	2.0	14.1	33.4	47.2	7.9	26.9
Percent White	82.5	38.0	67.9	46.7	65.5	47.5	82.8	37.8
Percent Female	62.4	48.4	57.3	49.5	67.8	46.7	41.6	49.3
Percent Single Mothers	19.2	39.4	26.7	44.2	19.1	39.4	15.6	36.3
Percent Single Men	13.8	34.5	11.6	32.0	13.4	34.1	14.5	35.2
Percent Single Women	14.7	35.4	11.5	32.0	28.4	45.1	8.3	27.6
Percent Married w/Kids	20.6	40.4	33.6	47.3	15.2	35.9	24.6	43.1
Percent Married w/o Kids	13.5	34.2	3.6	18.7	10.9	31.1	18.4	38.7
Percent Married	34.1	47.4	37.3	48.4	26.0	43.9	43.0	49.5
Age	31.7	15.7	33.9	12.1	47.8	22.1	35.3	16.8
Education	11.5	2.6	11.2	2.9	9.8	3.2	8.9	2.5

^a We define a low-wage worker as someone whose average annual wage is below \$5.93, which marks the lowest quintile of the wage distribution

^b All calculations use SIPP sample weights. All income, earnings and hours are annual 1994.

Source: 1993 Panel of the Survey of Income and Program Participation, individuals age 14 years or older, except self-employed individuals.

Employee-Based Subsidies

Program	Target Group	Subsidy Rate	Compliance Requirement	Other Notes	Time Limit
Federal Earned Income Tax Credit (EITC)	Low income households with earnings; available to childless individuals only if between the ages of 25 and 65	<i>No children:</i> 7.65% of earnings between \$0 and \$4,450; maximum of \$341; phased out at 7.65% for income between \$5,600 and \$10,000. <i>One child:</i> 34% of earnings between \$0 and \$6,650; maximum of \$2,271; phased out at 15.98% for income between \$12,300 and \$26,450. <i>Two children:</i> 40% of earnings between \$0 and \$9,350; maximum of \$3,756; phased out at 21.06% for income between \$12,300 and \$30,095.	Personal Income Tax; Must report child's social security number	Refundable credit; paid as a lump sum	None
Iowa EITC	Same as federal	6.5% of federal EITC	Personal Income Tax	Nonrefundable credit	None
Kansas EITC	Same as federal	10% of federal EITC	Personal Income Tax	Refundable credit; paid as lump sum	None
Massachusetts EITC	Same as federal	10% of federal EITC	Personal Income Tax	Refundable credit; paid as lump sum	None
Maryland EITC	Same as federal	50% of federal EITC with children, otherwise 10%	Personal Income Tax	Refundable credit with children, otherwise nonrefundable; paid as lump sum	None
Minnesota EITC	Same as federal	25% of federal EITC with children, otherwise 15%	Personal Income Tax	Refundable credit; paid as lump sum	None
New York EITC	Same as federal	20% of federal EITC	Personal Income Tax	Refundable credit; paid as lump sum	None
Oregon EITC	Same as federal	5% of federal EITC	Personal Income Tax	Nonrefundable credit	None
Rhode Island EITC	Same as federal	27% of federal EITC	Personal Income Tax	Nonrefundable credit	None
Vermont EITC	Same as federal	25% of federal EITC	Personal Income Tax	Refundable credit; paid as lump sum	None

Employer-Based Subsidies

Program	Target Group	Subsidy Rate	Compliance Requirement	Other Notes	Time Limit
Wisconsin EITC	Same as federal	4% of federal EITC w/ 1 child 14% w/2 children 43% w/3+ children	Personal Income Tax	Refundable credit; paid as lump sum; not available to childless individuals	None
New Hope Project	Residents in targeted Milwaukee neighborhoods with income below 150% of poverty line and willing to work 30 hours per week	Provides a monthly earnings subsidy to bring participants' earnings to poverty line		Also subsidizes child care and health insurance for participants and provides job search services	None
Federal Tax Credits					
Federal Work Opportunity Tax Credit	(1) Individuals who live in a family that received AFDC/TANF in 9 of the 18 months before the hire, (2) 18-24 year olds or veterans in families receiving food stamps, (3) SSI recipients, (4) Ex-felons and several other at-risk groups	40% of qualified wages up to \$6,000 for employees who work at least 400 hours; 25% for employees who work between 120 and 400 hours. (for employees hired between September 30, 1997 and July 1, 1998)	Employers must certify eligibility of the employee by the day the employee begins work or the 21 st day after the individual begins work.	Employers cannot claim both the Work Opportunity Tax Credit and the Welfare to Work Tax Credit for an employee.	One year
Federal Welfare to Work Tax Credit	Long-Term Welfare Recipients: (1) Individuals who have received AFDC/TANF for at least 18 consecutive months prior to hire or received AFDC for any 18 months after August 5, 1997 and (2) Individuals ineligible for assistance because welfare time limits are binding.	35% of qualified wage up to \$10,000 for the first year of employment and 50% of qualified wage for the second year	Employers must certify eligibility of the employee by the day the employee begins work or the 21 st day after the individual begins work.	Employers cannot claim both the Work Opportunity Tax Credit and the Welfare to Work Tax Credit for an employee. An employer can claim this credit only if the employee worked at least 180 days or 400 hours.	Two years

Employer-Based Subsidies

Program	Target Group	Subsidy Rate	Compliance Requirement	Other Notes	Time Limit
<i>State Tax Credits</i>					
District of Columbia Employment Tax Credit	D.C. residents working for employers located in D.C. Enterprise Zones	The lesser of \$3,000 or 20% of the first \$15,000 in wages	One form to be included with annual federal tax filing	Credit is available for new hires and existing employees	Five years
Maryland	Individuals who have received AFDC/TANF benefits in the 3 months before hire	30% of first \$6,000 of wages in first year; 20% of first \$6,000 of wages in second year; 10% of first \$6,000 of wages in third year.	(1) Job seeker or employer must obtain certification voucher at time of application and (2) employer must notify state at time of hire	Also provides a credit for child care and transportation expenses of employee; employee must work at least 1 year; employer cannot receive any other federal or state credit for the employee	Three years
Massachusetts Full Employment Credit	Employees previously covered by Full Employment Subsidy Program	\$100 per month of employment for eligible employees		Eligibility of both employees and employers certified through the Dept. of Transitional Assistance	
Missouri Enterprise Zone Tax Credit	Individuals unemployed for at least 90 days or eligible for AFDC or General Relief	\$400 credit for each new employee trained	Employers must complete a substantial amount of paperwork to become involved in the Enterprise Zone Program	Employer must be located in one of 62 designated enterprise zones (employees do not have to be residents of these zones);they also must provide training	Up to ten years

Pennsylvania Employee Incentive Program	Individuals receiving welfare cash assistance at the time of hire	30% of first \$6,000 of wages in first year; 20% of first \$6,000 of wages in second year; 10% of first \$6,000 of wages in third year.		Also special credits (up to \$3,000/yr) for employers in Philadelphia Empowerment Zones	Three years
Rhode Island New Employment Tax Credit	Individuals unemployed for at least 26 months and received UI; recipients of AFDC/TANF in 1 year preceding hire	One-time credit of \$2,400 per employee	Employer must obtain state certification within 30 days of hire		One year
Rhode Island Jobs Training Tax Credit	No specific target group; aim of the program is to “encourage all Rhode Island businesses to upgrade the skills of their workforce”	Credit of up to \$5,000 per employee over a three year period (only \$1,000 may cover wage costs; the rest is to subsidize training)	Employer must have training program certified by state, begin program within 6 months of approval, and file for credit with state income tax	Employees cannot earn more than \$80,000/yr, must work at least 30 hrs/wk, and must earn over 150% of the Rhode island minimum wage after training. Employees must be retained for 18 months after completing training.	Three years
South Carolina (Family Independence Act of 1995)	Individuals who have received AFDC/TANF within past 12 months	25% of wages up to maximum payment of \$5,000 in first year; 15% of wages up to maximum payment of \$5,000 in second year; 10% of wages up to maximum payment of \$5,000 in third year.			Three years

Employer-Based Subsidies

Program	Target Group	Subsidy Rate	Compliance Requirement	Other Notes	Time Limit
<i>State Welfare Reform Programs</i>					
Detroit (Public/Private Service Employment Program)	Hard-to-employ welfare recipients	Full cost of wages is subsidized (\$6-8/hr)	Employer must agree to retain employee for 1 year after subsidy	Participants are placed in both private sector and public agencies	Up to six months
Florida (WAGES)	Recipients of Temporary Family Assistance	“Work Supplementation” program: pays value of employee’s temporary cash assistance benefits to employer to subsidize wages	For each month of payment received, employer must prove to state agency that additional subsidy is needed to cover employee’s on-the-job-training	Job must be full-time (32-40 hrs/wk), pay more than minimum wage and employee must be employed for 1 year. Employers may also be eligible for sales and corporate tax credits.	Up to six months
Georgia (Work First!)	Welfare recipients, especially those receiving assistance for 30+ months	Pays value of employee’s TANF benefits (state average: \$238) to employer to subsidize wages each month	Employer must agree to retain the employee after the subsidy ends	Only available for new positions; employers can also receive credits for training and child care provided.	Nine months
Minnesota (Family Investment Plan)	Welfare recipients	Work Supplementation is an option for counties to implement; employee welfare benefits would be paid to employers to subsidize wages		Also a youth wage subsidy for 16-21 year-olds.	

Mississippi (Work First Demonstration)	Work-ready TANF and Food Stamps recipients in one of five pilot counties	Subsidy paid to employer paid from TANF/FS fund; \$3.25/hr in first month and \$2.35/hr for next five months (Employee-based component: employees are guaranteed difference between welfare benefits and earnings)	Mississippi Employment Security Commission oversees program, recruits businesses to enroll	Employers must also contribute \$1/hr (up to \$1,000 cap) to employee's Individual Development Account; employers must provide training/mentoring; employers cannot use WorkFirst hires to replace existing workers.	Six months
Missouri (Wage Supplementation Program)	Welfare recipients	Pays average state value of TANF/FS benefits to employer to be used as wage subsidy; full value of welfare payment must be put toward wages; employees are guaranteed to receive in earnings at least the amount they would have received in benefits	State first screens and then contracts with accepted employers; participating employers report back (and are paid) every month	Day care and health care assistance also available; subsidized positions cannot be used to displace current workers; pay must be at or above current level for non- subsidized jobs.	Up to twelve months.

Oregon (JOBS Plus)	Food stamps, AFDC, and unemployment insurance recipients who have failed to find unsubsidized employment	Fully reimburses firms for wages, social security, unemployment insurance, and worker's compensation for hiring targeted employees. (Employee based component: employees are guaranteed the difference between welfare benefits and earnings)	Employers must submit monthly updates on hours worked by participants and they receive reimbursement within 5 days.	Extends Medicaid benefits for working participants and subsidizes child care and other work expenses; after 30 days the employer must contribute \$1/hr to Individual Education Account; employer must provide on-the-job training and mentoring.	Six months
North Carolina (Work Over Welfare)	Welfare recipients in counties with high unemployment rates	Employers receive wage subsidies through TANF/Food Stamps fund.	Participants must sign agreement of training and employment responsibility.	Participants may be required to spend up to 40 hrs/wk in JOBS activities like job search or subsidized employment.	Two year demonstration waiver approved in March 1996.
21 st Century Communities Program in Kansas City, Missouri	Welfare recipients in the targeted regions of Kansas City	Wage supplements paid to employers who create jobs in low-income neighborhoods.		Participation is mandatory; includes child care and health care benefits for a limited time.	Four years

References

- Bernheim, B. Douglas and Scholz, John Karl. 1993. "Private Saving and Public Policy." In James M. Poterba (ed.), *Tax Policy and the Economy*. Volume 7. Cambridge and London: MIT Press, pp. 73-110.
- Blinder, Alan S. and Harvey S. Rosen. 1985. "Notches," *American Economic Review*, 75(4) (September): 736-47.
- Burkhauser, Richard V., Kenneth A. Couch and David C. Wittenburg. 1996. "'Who Gets What' from Minimum Wage Hikes: A Re-estimation of Card and Krueger's Distributional Analysis in Myth and Measurement: The New Economics of the Minimum Wage," *Industrial and Labor Relations Review*, 49(3): 547-52.
- Burtless, Gary. 1985. "Are Targeted Wage Subsidies Harmful? Evidence from a Wage Voucher Experiment," *Industrial and Labor Relations Review*, 39(1) (October): 105-14.
- Brock, Thomas, Fred Doolittle, Veronica Fellerath and Michael Wiseman. 1997. "Creating New Hope: Implementation of a Program to Reduce Poverty and Reform Welfare," Manpower Demonstration Research Corporation, New York, October.
- Center for Budget and Policy Priorities. 1998. "Strengths of the Safety Net: How the EITC, Social Security, and Other Government Programs Affect Poverty," <http://www.cbpp.org/snd98-rep.htm>. March 9
- Dubin, Jeffrey A. and Rivers, Douglas. 1993. "Experimental Estimates of the Impact of Wage Subsidies," *Journal of Econometrics*, 56(1-2) (March): 219-42.
- Dickert, Stacy, Scott Houser, and John Karl Scholz. 1995. "The Earned Income Tax Credit and Transfer Programs: A Study of Labor Market and Program Participation." In James Poterba (ed.), *Tax Policy and the Economy*, vol. 9. Cambridge, MA: MIT Press.
- Eissa, Nada and Jeffrey B. Liebman. 1996. "Labor Supply Response to the Earned Income Tax Credit," *Quarterly Journal of Economics*, 111(2) (May): 605-37.
- Eissa, Nada and Hilary Hoynes. 1998. "The Earned Income Tax Credit and The Labor Supply of Married Couples," NBER Working Paper No. W6856. Cambridge, MA: National Bureau of Economic Research, December.
- General Accounting Office. 1997. "Earned Income Tax Credit Noncompliance." GAO/T-GGD-97-105. Washington, DC: U.S. Government Printing Office, May 8.
- Gruber, Jonathan 1994. "The Incidence of Mandated Maternity Benefits," *American Economic Review*, 84(3): 622-41.
- Harberger, Arnold C. 1962. "The Incidence of the Corporation Income Tax," *The Journal of Political Economy*, 70(3) (June): 215-240.

- Holcomb, Pamela, LaDonna Pavetti, Caroline Ratcliffe and Susan Riedinger. 1998. "Building an Employment Focused Welfare Reform System: Work First and Other Work-Oriented Strategies in Five States," working paper. Washington, DC: The Urban Institute. June.
- Hollenbeck, Kevin M. and Richard J. Willke. 1991. "The Employment and Earnings Impacts of the Targeted Jobs Tax Credit," working paper. Kalamazoo, MI: Upjohn Institute for Employment Research, February.
- Holtzblatt, Janet, Janet McCubbin, and Robert Gillette. 1994. "Promoting Work through the EITC," *National Tax Journal*, 47(3) (September): 591-607.
- Internal Revenue Service. 1997. Study of EITC Filers for Tax Year 1994. Washington, DC: U.S. Government Printing Office.
- Internal Revenue Service, 1998a. "Form 5884 Work Opportunity Credit." Washington, DC: U.S. Government Printing Office.
- Internal Revenue Service, 1998b. "Form 8861 Welfare to Work Credit." Washington, DC: U.S. Government Printing Office.
- Katz, Lawrence. 1996. "Wage Subsidies for the Disadvantaged," NBER Working Paper 5679. Cambridge, MA: National Bureau of Economic Research, July.
- Killingsworth, Mark. 1983 *Labor Supply*. New York: Cambridge University Press.
- Lerman, Robert I. 1982. "A Comparison of Employer and Worker Wage Subsidies." In Robert Haveman and John Palmer (eds.), *Jobs for Disadvantaged Workers*. Washington DC: The Brookings Institute.
- Liebman, Jeffrey B. 1993. "The Impact of the Earned Income Tax Credit on Incentives and Income Distribution." In James Poterba (ed.), *Tax Policy and the Economy*, Vol. 12, pp. 83-119
- Nicholas Johnson and Ed Lazere. 1998. "Rising Number of States Offer Earned Income Tax Credits," working paper. Washington, DC: Center for Budget and Policy Priorities, September 14.
- Neumark, David, Mark Schweitzer, William Wascher. 1998. "The Effects of Minimum Wages on the Distribution of Family Incomes: A Non-Parametric Analysis," NBER Working Paper No. 6536. Cambridge, MA: National Bureau on Economic Research, April 1.
- Maryland Comptroller of the Treasury. *Administrative Release No. 27*. October 1, 1998. Annapolis, MD: Office of the Comptroller.
- Meyers, Bruce and Dan Rosenbaum. 1997. "Welfare, the EITC, and the Labor Supply of Single Mothers," working paper. Chicago, IL: Northwestern University, November.

- Moffitt, Robert. 1983. "An Economic Model of Welfare Stigma," *American Economic Review*, 73(5) (December): 1023-35.
- Moffitt, Robert. 1992. "Incentive Effects of the U.S. Welfare System: A Review," *Journal of Economic Literature*, 30(1) (March): 1-61.
- Mroz, Thomas. 1987. "The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions," *Econometrica*, 55: 765-800.
- Naito, Hisahiro. Forthcoming. "Reexamination of Uniform Commodity Taxes, and its Implication for Production Efficiency," *Journal of Public Economics*.
- Phelps, Edmund. 1997. *Rewarding Work*. Cambridge: Harvard University Press.
- Roberts, Brandon. 1998. *Welfare to Wages: Strategies to Assist the Private Sector to Employ Welfare Recipients*. Chevy Chase, MD: Brandon Roberts and Associates.
- Scholz, John Karl. 1997. Deputy Assistant Secretary for Tax Analysis John Karl Scholz testimony before the House Committee on Ways and Means. May 8.
- Scholz, John Karl. 1994. "The Earned Income Tax Credit: Participation, Compliance, and Antipoverty Effectiveness," *National Tax Journal*, 47(1): 63-87.
- South Carolina Department of Revenue. 1998. <http://www.dor.state.sc.us/policy/il95-19.html>
- U.S. Congress. 1998. Committee on Ways and Means, *Overview of Entitlement Programs: 1998 Green Book*. U.S. Government Printing Office Online via GPO Access. <http://frwebgate.access.gpo.gov/cgi-bin/multidb.cgi>
- Whitehouse, Edward. 1996. "Designing and Implementing In-Work Benefits," *Economic Journal*, 106(434) (January): 130-41.
- Wiseman, Michael. 1995. "Welfare Work Incentives in Real Time," working paper, Institute for Poverty Research. Madison, WI: University of Wisconsin-Madison, March 11.

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