An Hourly-Wage-Based Earned Income Tax Credit: Implications For Workers, Employers, And Taxpayers

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Abstract

What is the best way to compensate low-paid workers? A "generous" minimum wage may cause substantial unemployment and serious dislocations. The current combination of a modest minimum wage plus the annual-income-based earned income tax credit is, in some cases, a disincentive to work. An hourly-wage-based earned income tax credit, on the other hand, may be the most efficient and effective way to compensate the low-wage worker.

1. Introduction

A number of programs to assist the *able-bodied poor* have been introduced in the U.S. since 1935: Aid to Families with Dependent Children (AFDC) for one-parent families; AFDC-UP (Aid to Families with Children of an Unemployed Parent) for two-parent families; unemployment insurance (temporary benefits only); food stamps; and other income-in-kind programs. In 1996, however, the U.S. Congress passed the Personal Responsibility and Work Opportunity Reconciliation Act. This bill signaled a shift in policy away from providing income maintenance (public aid) and toward moving recipients to employment and assisting the low-wage employed. Since 1996, the primary income policy for the working poor in the U.S. has been the *legal minimum wage augmented by the Earned Income Tax Credit (EITC).* In recent years, some European Countries, including the U.K. and The Netherlands, have considered earned income tax credits.

In this paper, I discuss three policies for augmenting the income of the employed poor: raising the minimum wage, combining the minimum wage with an earnings tax credit (the current policy in the U.S.), and combining a minimum wage with a wage-based tax credit or wage subsidy. Finally, I make a case for the third strategy, a combination minimum wage/wage subsidy.

2. Current U.S. Policy: The Legal Minimum Wage

One strategy for lifting the working poor out of poverty would be to raise the legal minimum wage. The minimum wage in the U.S., however, cannot provide a solution to the problem of the working poor for several reasons. As of this writing, with the minimum wage at $5.15/hour, a 40-hour per week, 50 weeks per year (2000 hours/year)[1] job will earn the employee only $10,300. The 2001 U.S. weighted average poverty thresholds for a family of three (one adult and two children) and a family of four (two adults and two children) were $14,269 and $17,960.[2] So, minimum wages of $7.13 and $8.98 an hour, in the absence of the EITC, would be necessary to bring families of these sizes up to the year-2001 official poverty line.

This brings us to the second problem with a minimum-wage solution. The minimum wage is unlikely to be raised enough to bring even small families comfortably out of poverty because the dominant view among economists is that a dramatically increased minimum wage would decrease employment. In the 1990s, there was another

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surge of interest in and research on minimum wages. Some economists have suggested that the impact of the minimum wage on employment may be trivial or nonexistent (see especially Card and Krueger, 1995a, Card and Krueger, 1995b, Brown, 1995, and Freeman, 1995) while others have continued to argue that the side-effects are negative and noteworthy (see, for example, Deere et. al., 1995, Hamermesh, 1995, Neumark and Wascher, 1992, Neumark and Wascher, 1995, and Welch, 1995).

There are other criticisms of the minimum wage as an antipoverty device. The minimum wage could not vary with family size. The current minimum wage lifts a single individual above poverty but not a family of two or more. In the case of a large family, e.g., family of five, one minimum wage would provide only about half (48.7 percent) of the poverty threshold. Multiple minimum wage levels, higher for large families and lower for small families, are untenable however because they would bias employers toward hiring single persons and heads of small families.

The minimum wage also reduces market efficiency. Provided labor markets are competitive, it is well known that a minimum wage set above the competitive wage would result in a deadweight loss. An increase in that minimum wage would increase the deadweight loss.

The minimum wage is also criticized for ineffective targeting of the poor (see Gramlich, 1976 and Burkhauser and Finegan, 1989), although other economists (see Card and Krueger, 1995a) have been less critical of the minimum wage on these grounds. Burkhauser et. al., 1996b, suggest that 68 percent of the working poor in 1990 were already earning at least $4.25, the proposed minimum wage at that time, so they would have been unaffected by this proposed increase; also, only 22 percent of workers affected would have been poor, and they would have received only an estimated 19.3 percent of the benefits of the increased minimum wage.

3. Current U.S. Policy: Earned Income Tax Credit (EITC)

Current U.S. policy for the low-income employed is a minimum wage combined with the Earned Income Tax Credit. The EITC, an earnings subsidy to families with low earnings, has grown from a modest program to offset social security taxes for low-earnings families to the centerpiece of antipoverty efforts in the U.S. in the 21st century. After adjusting for inflation, program costs increased 600 percent from 1985 to 1994 (Merski, 1995), and have grown considerably since 1994. As of 2001, for a family with two or more children, the EITC is calculated as 40 percent of earnings up to an earnings level of $9,999. At this point, the EITC benefit peaks and plateaus at $4,008 until earnings are $13,099, and then decreases at an implicit marginal tax rate (IMTR) of 21%, declining to zero at an earnings level of $32,152 (see Table 1 for more detail).

One problem with the EITC is that the sum of a minimum wage *plus the EITC* does not lift a two-parent family with children above the poverty line, and it cannot be made much more generous because of potential work disincentive effects. Consider a family of four with two qualifying children as of 2001. The 2001 poverty threshold for such a family was $17,960, and the minimum wage during 2001 was $5.15. In order for one minimum wage plus EITC to equal the poverty line, the maximum EITC would have to be increased from $4,008 to $7,660 (see Table 1). Then, the IMTR or phase-out rate would have to be 40.21 percent in order to retain $32,152 as the phase-out limit or break-even. (Alternatively, if the phase-out rate remains 21 percent, the break-even point would have to increase to an earnings level of $49,576, an amount that would almost certainly be politically unacceptable.) Add on the other marginal taxes faced by the family, and the combined effective marginal tax rate (CEMTR) becomes a significant problem (see Table 2 and Figure 1). Using 3 percent as a typical state income tax, for a family of four earning over $17,052, the sum total of increased taxes and reduced benefits would be 89.86 percent of earnings. The effect of the sales tax on income or purchasing power is ignored here; so also are public assistance programs and public housing. Add public assistance and/or public housing to these examples, and the total CEMTR could exceed 100 percent. Our CEMTR figures here are similar to those calculated by Holtzblatt et. al. (1994), Browning (1995), Dickert et. al. (1995) and the U.S. General Accounting Office (1993). The differences depend on whether the sales tax and the implicit food stamp tax are taken into account and the treatment of the social security tax.[4]

Whether the EITC, even at current levels, could provide a work incentive is problematical. In the phase-

out range, both income and substitution effects would be in the direction of less work. Most studies indicate a small decrease in hours worked, in the 1 to 4 percent range of those recipients already employed (see Hoffman and Seidman, 1990; U.S. GAO, 1993; Holtzblatt et. al., 1994; Eissa and Hoynes, 1998; and Meyer, 1998.) Dickert et al. (1995), on the other hand, report that the potential increase in labor-force participation *may* more than offset the decreased hours of work of the already employed, depending on the hours and weeks worked of the new participants.

Another problem with the EITC is targeting of the poor. For a family of three, the 2001 poverty line is $14,269. But benefits are accruing to families of three (one adult, two children) up to annual earnings of $32,152, so benefits are going to significant numbers of families with incomes up to 2¼ times the poverty line. Hoffman and Seidman (1990) estimate that 75 percent of EITC recipients are non-poor before receiving EITC.

Third, it is estimated that $1.9 billion out of $5.9 billion in EITC outlays was "lost to incorrect payments," i.e., 32 percent. The IRS has always been concerned with underreporting of income, but in the subsidy range of the EITC, it must now be concerned with over reporting as well. Non-existent children have been reported by some families. And the IRS has estimated that 160,000 illegal aliens claimed the EITC in 1994 (see U.S. GAO, 1995). Leibman (1998) estimates that overpayments are down but still 21 percent as of the late 1990s.

Finally, for many families, the EITC includes a marriage penalty. In a two-parent, two-child family with *both* parents earning a $5.15 minimum wage, the EITC would be $2,433 for a total income of $23,033. If split into two actual or fictitious one-parent, one-child families, the earnings would be $10,300 each plus a $2,428 EITC each for a total of $25,456: a $2,423 marriage penalty. In a two-parent, four-child family, the EITC would still be $2,433. If it split into two one-parent, two-child families, the EITC benefits would climb to $4,008 x 2 = $8,016 for a marriage penalty of $5,583.[5]

When the negative income tax (NIT) was the reform of choice *four decades ago*, much was made of the *dilemma* faced by the designer. An ideal NIT would (a) have an "adequate" guarantee, (b) include an implicit marginal tax rate non-injurious to employment incentives, and (c) be well targeted on the poor. But these three objectives are mutually exclusive. In terms of this dilemma, the EITC does not fare well. The guarantee is essentially zero: No credit is paid to someone with no earnings (although admittedly other programs may help a family with zero earnings). The implicit marginal tax rate, on the face of it, seems modest, but the combined marginal tax rate faced by recipients in the phase-out range, assuming the more generous EITC discussed above, would typically be over 70 percent and could be over 100 percent for some families. As for targeting, the existing EITC benefits some families who earn over twice the poverty line, and a poverty-threshold-attaining EITC of the type discussed above would either involve a very high phase-out rate (implicit tax rate) or paying benefits to families with earnings well over the poverty threshold.

Below, we discuss an alternative to the present U.S. EITC: an hourly-wage-based EITC or wage subsidy combined with a minimum wage.

4. A Combination Minimum Wage/Wage Subsidy

In this section, we introduce an alternative labor-market strategy that is both effective and efficient in raising the welfare of the labor force. This alternative policy is a hybrid or combination of a minimum wage plus a wage-based tax credit or wage subsidy: the *combination policy* (CP).[6]

Under the combination policy, a "target" or "formula" or "break-even" wage (W_T) would need to be established, which combined with the subsidy rate (e.g., 50 percent) and the employer-paid wage would bring the worker up to the desired minimum level of remuneration. The employee would receive the desired minimum level of compensation

$$W_d = W + s,$$

where s is the subsidy; the subsidy received under a wage subsidy policy would be defined as follows:

$$s = \alpha(W_T - W),$$

where W = actual employer-paid wage, and

$$0 \le \alpha \le 1$$

5. Implementation and Costs of the Combination Policy

Suppose the desired minimum level of compensation were determined to be $7.23 for 1997. Given the 1997 U.S. minimum wage of $4.75 and a subsidy rate of 50 percent, the subsidy would be $2.48. Given this subsidy rate of 50 percent, the formula wage or target wage would then be set at $9.71. The wage subsidy, given the minimum wage of $4.75, would be $2.48; for an individual earning $5.75, the subsidy would be $1.98; for an individual earning $6.25, the subsidy would be $1.73; etc.

There are potentially complex economic efficiency implications for collecting the taxes to pay for the subsidy. However, by analyzing a policy in which the current EITC is replaced by an equal-cost version of the CP, these complications can be avoided. For calculations that we have made for the year 1997, with a target wage of $9.71, a 50 percent subsidy rate, and a $4.75 minimum wage, we estimate that the cost of the wage subsidy would have been $27.7 billion; the EITC in contrast cost $27.9 billion in 1997.[7] A CP with these parameters will therefore serve as our *equal-cost combination policy* as of 1997.

As seen from Table 3, the minimum wage plus EITC falls short of the poverty threshold by 10 percent and 19.2 percent for two-adult families with one or two children respectively [although it exceeds the poverty line for one-adult families (with either one or two children)]. The equivalent-cost CP, on the other hand, would provide more generous benefits to all of these families, and only falls short (by 11.2 percent instead of 19.2 percent) of the poverty line for a two-adult, two-child family. The wage subsidy *could* vary, however, with family size if policy-makers desired and could be less, compared to the example above, for a family with one child and more for a family with two children, and therefore more closely approximate the official poverty thresholds. (If the program were designed this way, an equal-cost CP, for a two-adult, two-child family, would fall short of the poverty line by far less than 11.2 percent.) Single persons, for example, could receive no subsidy. The minimum wage by itself (at least in the past and at this writing) would keep a single person officially out of poverty. The subsidy might be, for example, $1 for a family of two, $2 for a family of three, and $3 for a family of four. Teenagers from middle- and high-income families could be exempt from the subsidy by limiting the subsidy to the principal family earner, defined in some way (e.g., as that person who has earned the most over the past 18 months, the definition used in the former AFDC-UP program). In addition, the CP could easily be designed to minimize marriage penalties.[8]

The wage subsidy could be administered through "negative withholding." If so, the employer, on a weekly, biweekly, or monthly basis, depending on the payroll period, would subtract the wage subsidies (negative withholding) from the positive withholdings and send in the balance to the IRS. The payroll check to the low-wage employee would then include the subsidy. (If the negative withholdings exceeded the positive withholdings, then the IRS would send a check to the firm.) The advantages: First, the employee receives the subsidy on a timely basis and her/his income is distributed evenly throughout the year. In contrast, the EITC is typically received during the income tax filing period. Second, businesses and taxpayers would benefit if fraud were lower under the wage subsidy compared to the EITC. Fraud may be lower with the CP as there would be no incentive to overstate income as there is now if one is a very low-earning worker in the phase-in range of the EITC. Also, the subsidy would be paid by the employer. In contrast, the EITC benefit is (typically) determined by the employee in the privacy of her/his own home where temptations may arise.

There was a series of largely positive articles on wage subsidies published nearly three decades ago (see Kesselman, 1969, 1973, Barth and Greenberg, 1971, Zeckhauser, 1971, and Browning, 1973). Interest waned quickly, however, probably because, as Browning (1995) states, of perceived defects, the "defects (including) administrative problems and the difficulty of targeting benefits on those with low incomes" (p. 42) and possibly also because it was discussed as an alternative to the negative income tax rather than in conjunction with the minimum

wage. Hoffman and Seidman (1990, p. 60) point out the potential for fraud from overstating hours. For example, if an employee were working 40 hours at $6.50 an hour, employer and employee could conspire to claim that s/he was working 50 hours at $5.20 an hour, and if the subsidy were half the difference between the wage and a target wage of $9, then the fraudulent information would yield the employee a $1.90 subsidy for 50 hours instead of $1.25 for 40 hours, raising the subsidy by $45 a week. In this example, 47 percent of the subsidy would be fraudulent, and if 10 percent of claimants were doing it, we have approximately 4.7 percent fraud. A thorough discussion of all of the potential administrative problems is beyond the scope of this paper, but we believe that the targeting and fraud problems could be administratively solved. As already mentioned, the subsidy could go to only one family member and could be administered through the employer's withholding; it could be limited to only one employer (for the worker with multiple jobs). Overstatement of hours could be partially solved by limiting the subsidy to the first 40 hours per week. True (using the above example), one could still claim the $1.90 subsidy for the first 40 hours. However, 20 to 30 percent of EITC payments now go to ineligible recipients, so we suggest the potential for fraud may be far lower with the wage subsidy. Also, the IRS penalties for the potential conspiracies described above could be severe.

6. Conclusion

If society, through its government institutions, were to set a minimum desired compensation for employment, what is the best way to achieve it? We have mentioned three approaches in this paper: raising the minimum wage, maintaining the combination of the minimum wage and the EITC, and combining the minimum wage with a wage-based tax credit or wage subsidy. Raising the minimum wage potentially causes employment losses. Economists admittedly differ at the moment over how significant the losses are or whether there are any, but even if employment would not go down, there is the possibility that unskilled workers might lose their jobs to more-skilled secondary-family workers (see, for example, Luttmer, 1998).

Currently, in the U.S., a minimum wage combined with the Earned Income Tax Credit is used to achieve a minimum level. This policy, too, has several drawbacks. The EITC fails to get a two-parent family with one minimum-wage earner up to the poverty line, yet it pays out sizable benefits to the non-poor and contributes to a high combined marginal tax rate. The CP would minimize subsidies to the non-poor. Whereas the EITC provided benefits to a family of four in 1997 with an income in excess of $29,000, the CP with a minimum wage at $4.75 an hour plus a 50 percent wage subsidy and a "target-wage" of $9.70 for a family of four, would have paid no benefits to a single-earner family earning more than $19,400. Furthermore, for someone earning the minimum $4.75 an hour (1997), the $2.48 subsidy [0.5 (9.70-4.75)] would bring the family income to $14,460 a year whereas the 1997 minimum wage plus EITC would only bring a family with two children to $13,156. Given the EITC, working families would be facing a combined marginal tax rate of up to approximately 74 percent -- and close to 90 percent if the EITC were made sufficiently generous to bring a family with two adults, two children, and one minimum-wage earner up to the poverty line. The CEMTR with the CP would vary depending on how various components would be taxed: whether the wage subsidy would reduce the food stamp benefit at the rate of 24 cents on the dollar, the rate at which earnings reduce food stamps, or at 30 cents on the dollar, the rate at which unearned income reduces food stamps; and whether the state income tax, federal income tax, and the social security tax would treat the subsidy as ordinary income and earnings. Nevertheless, the combination policy that would lift a one-minimum-wage-earning family out of official U.S. poverty, however, would result in a CEMTR never exceeding 49.65 percent -- not low, but a vast improvement over the peak 70 to 90 percent with the EITC. The CEMTR peaks at 49.65 percent regardless of the amount of dependent care costs in the food stamp program and also regardless of whether the wage subsidy is generous enough to raise a family of four out of poverty or is the more modest equal-cost program. Although we have ignored cash welfare, public housing, and sales taxes in these calculations, as well as the varying state income taxes, the point is that the CEMTR would be much lower with the combination of a minimum wage and wage-based tax credit than with the combination minimum wage/EITC.

Proponents of the EITC might argue that the minimum wage plus EITC plus food stamps does bring a family approximately up to the poverty line. Nevertheless, the fact is that the combination policy would make the poor better off at the same cost, or could make low-income families as well off at *less cost* (and with fewer payments to the non-poor).

One might also argue that the CP analyzed here would incur a deadweight loss on the taxpayers who have to pay for it. As previously mentioned, however, we have analyzed a wage subsidy that would cost the same as the EITC, so no additional deadweight loss to the taxpayer would occur. Furthermore, the EITC with its higher implicit marginal tax rate likely would have a negative differential effect on labor supply resulting in an additional deadweight loss compared to the wage subsidy.

In conclusion, what are the advantages of an hourly-wage-based earned income tax credit over an annual-income-based earned income tax credit? *Recipients* would receive higher benefits (for the same budgetary cost). They would also face a lower combined effective marginal tax rate encouraging them to work longer hours, which could benefit their families. The more hours they work, the higher the benefits (unless there were an hours limitation); with the current EITC, the more hours most recipients work (the earnings of most recipients would place them in the phase-out range of the EITC), the lower the benefits.

Employers benefit if their employees are more willing to work longer hours if needed. The wage-based tax credit would be very easy to calculate or program into the payroll software. When hiring, the employer could show the potential employee the combined compensation level, e.g., $6 + $2 rather than just $6.

The employer/taxpayer and *taxpayer* in general would benefit by the reduced deadweight loss (greater economic efficiency). The incentives to work harder and longer might lead to wage increases and therefore reduced subsidy levels; also, with higher wages and longer hours, the recipients would be paying higher taxes and eligible for less assistance from programs like food stamps. And finally, the potential reduction in fraud would also reduce program cost and therefore benefit the taxpayer. 📖

Footnotes

1. We are following the usual convention of a 2000 hour year (40 hours a week, 50 weeks a year).
2. The 2002 U.S. poverty lines, for families of three and four, when published in the fall of 2002, will be, assuming about 2 percent inflation, approximately $14,550 and $18,300.
3. There are also very modest benefits to families with no qualifying children with annual benefits peaking at $364.
4. Although when assuming perfectly inelastic labor supply, the employee burden of the U.S. social security payroll tax would be the combined employee/employer 15.3 percent, the amount that would be deducted from any additional $1 of earnings would be 7.65 cents (Husby, 2000).
5. On the other hand, if a childless adult with earnings, e.g., $9500, marries a non-employed adult with at least two children, then the EITC would increase from $0 to $3656.
6. In this paper, we do not discuss a *simple* wage subsidy as an *alternative* to a minimum wage. The reason for this is that, depending on elasticities of labor supply and demand as well as the degree of labor market power of the employer, a simple wage subsidy could turn out to be a subsidy primarily to the employer rather that the employee. A simple wage subsidy is also likely to create a substantial deadweight loss.
7. "In 1997, the EITC provided $27.9 billion of credits, including spending on tax refunds and lower tax receipts for non-refunded portions of the credit." U.S. Office of Management and Budget, Budget of the United States Government, Fiscal Year 1999, U.S. Government Printing Office, Washington, D.C., 1998, p.224.
8. Consider, for example, a minimum wage of $5 an hour and a wage subsidy that would pay a $.50 subsidy to a minimum-wage-earning family of two, $1.50 to a family of three, and $3 to a family of four or more. A two-minimum-wage earner, two-child family would have an income of $10,000 plus a $6000 subsidy to the "principal earner" plus $10,000 for the second earner for a total income of $26,000. If it split into two one-minimum-wage earner, one-child families, each would earn $10,000 plus a $1000 subsidy for a total of $22,000. So, there is no marriage penalty, but in fact a $4000 marriage *bonus*. In the case of a family with two minimum-wage-earning adults and four children, the income would again be $26,000. If it split into two one-minimum-wage earner, two-child families, they would each have earnings of $10,000 plus a $3000 subsidy for a total of $26,000 and consequently no marriage penalty.

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Table 1 Earned Income Tax Credit (EITC) parameters, 2001

	One child	Two or more children
Phase-in range		
Income range	$0 - $7,149	$0 - $9,999
Credit rate (% of earnings beginning at zero earnings)	34%	40%
Plateau range	$7,150-$13,099	$10,000-$13,099
Income range	$2,428	$4,008
Maximum/plateau benefit level (current)		
Phase-out range	$13,100 - $28,237	$13,100 - $32,152
Income range	16%	21%
IMTR[a] (phase-out rate)	14,269	17,960
Two-parent poverty thresh.		
Maximum plateau benefit level (more generous EITC[b])	$3,969[c]	$7,660[c]
IMTR (phase-out rate) with more generous EITC	26.22%[d]	40.21%[d]

[a] IMTR - implicit marginal tax rate

[b] More generous EITC is defined as the EITC with the maximum/plateau benefit necessary, when added to the minimum wage, to bring a family up to the poverty threshold.

[c] Poverty threshold less (minimum wage x 2000 hours).

[d] More generous maximum benefit ÷ (break-even earnings minus upper limit of plateau earnings amount).

Table 2 CEMTR[a] for Two-Child, Low-Earning Family of four, 1997

	Earnings from 11,930 to 17,051	Earnings from 17,052 to 25,760-31,400[b]
For current EITC		
EITC	21	21
Social Security	7.65	7.65
Federal Income Tax	-	15
State Income Tax (typical)	3	3
Food Stamp IMTR	<u>24</u>	<u>24</u>
Total	55.65	70.65
For more generous EITC[c]	40.21[d]	40.21[d]
EITC	7.65	7.65
Social Security	-	15
Federal Income Tax	3	3
State Income Tax (typical)	<u>24</u>	<u>24</u>
Food Stamp IMTR	74.86	89.86
Total		

[a] CEMTR - combined effective marginal tax rate.
[b] Upper earnings limit for food stamp eligibility depends on excess shelter costs and dependent care costs. The above range is calculated for dependent care costs from $0 to $375/month for a family of four with excess shelter costs of $250.
[c] More generous EITC is defined as the EITC with the maximum/plateau benefit necessary, when added to the minimum wage, to bring a family up to the poverty threshold.
[d] More generous maximum benefit ÷ (break-even earnings - upper plateau earnings amount).

Table 3a Minimum Wage/EITC and Minimum Wage/Wage Subsidy Compared to Poverty Line, 1997

	Min. Wage	plus EITC	Min. W plus	Wage Sub.	Poverty	Threshold
	1 child	2 children	1 child	2 children	1 child	2 children
1 adult	11710	13156	14460	14460	11063	12931
2 adults	11710	13156	14460	14460	13008	16276

Table 3b Minimum Wage/EITC vs. Minimum Wage/Wage Subsidy as percent of Poverty Line

	Min. Wage	plus EITC	Min. W plus	Wage Sub.
	1 child	2 children	1 child	2 children
1 adult	105.8	101.7	130.7	111.8
2 adults	90.0	80.8	111.2	88.8

Notes