



Moving Towards a Unified Credit for Low Income Workers

Kevin A. Hassett
American Enterprise Institute

Lawrence Lindsey
American Enterprise Institute

and

Aparna Mathur
American Enterprise Institute

AEI WORKING PAPER #150, August 10, 2009
www.aei.org/workingpapers
<http://www.aei.org/unifiedcredit>

Moving Towards a Unified Credit for Low Income Workers

Kevin A. Hassett

American Enterprise Institute

Lawrence Lindsey

American Enterprise Institute

Aparna Mathur

American Enterprise Institute

Abstract

The United States tax system uses progressive income taxation as an important instrument for achieving its objective of redistribution. In this paper, we quantify the extent of redistribution that takes place through the tax code and identify how the multitude of tax credits, with their varying phase-in rates, maximum levels and phase-out rates affect the marginal tax schedule for lower income groups.

Currently, the tax code allows low-income individuals and families (at varying income levels) more than seven different tax credits (including the refundable and non-refundable portions of each credit). The credits are either tied to certain expenditures such as child care expenses, education expenses or are provided as incentives to low-income families who work. Each has varying income and other eligibility requirements, different schedules, different maximum credit values and different phase-in and phase-out ranges, adding layers of complexity and high marginal tax rates even at the lower end of the income distribution. Replacing all of these credits together with a simple policy, therefore, holds significant promise, and we discuss several options to do so.

The authors would like to thank Alan Viard, Rosanne Altshuler, Chris Edwards and other AEI seminar participants for their helpful comment and suggestions. Alex Wein, Scott Ganz and Amy Roden provided excellent research assistance for this project.

I. Introduction

The purpose of this paper is to put forward proposals that might be useful in simplifying the maze of tax credits that are typically available to low income individuals under the current tax code. Some of these include the Earned Income Tax Credit, the Child Tax Credit and the Additional Child Credit. Each of these programs has a bewildering and often confusing array of eligibility rules, with the result that some families that are entitled to these benefits do not file for them, while others that are not entitled receive benefits anyway. Moreover, there has been a tremendous growth in the size of these programs over time. For instance, in 2006, the EITC paid out almost \$44 billion in tax credits while the child tax credits paid out about \$47 billion. Overall, the size of all the different credits has grown by nearly 70 percent in just a 6 year period. Therefore an understanding of the actual redistributive impact of these credits and the targets that they were intended to achieve is critical today. Our paper therefore has two objectives. The first is to provide an analysis of the availability and the amount of the credits going to low income people. In other words, who is actually benefiting under the current system of tax credits? Second, we propose several alternatives to the existing tax credits that we hope will substantially simplify the tax code as it relates to the credits, while maintaining the redistributive principles that underlie it. As it stands today, the tax code provides incentives to work, to save and also attempts to offset the costs of raising children (such as child care expenses) and providing them an education. Therefore, we assess different proposals that might maintain these incentives either by only providing credits to families with children or individuals that work. Since it is unclear what weights society assigns to each of these incentives, we believe that providing an array of choices but explaining the costs associated with each and the target group that would benefit

from each choice is the best approach to reach our final objective of having one simplified system of tax credits.

This effort reignites the debate on an issue that received a lot of attention earlier in this decade with papers by Carasso, Rohaly and Steuerle (2003), Sawhill and Thomas (2001), Sawicky, Cherry and Denk (2002), Ellwood and Liebman (2000); and Steuerle (2000). Some of the most extensive and detailed work on this issue was conducted by the President's Advisory Panel on Federal Tax Reform (2005). While the specific proposals differ, the underlying objective of each of these was to consolidate and strengthen tax programs that benefit low income people or, in the case of the Tax Panel, to substantially rationalize and simplify all aspects of the tax code. Our paper builds on the framework provided in this earlier work, but provides several alternatives to the current system. In particular, we do not advocate any one particular proposal that we think would work best as an alternative. Instead, we take some of the broader principles that determine the current distribution of credits and show how far up the income distribution the credits could be paid out before we hit the budget constraint if we stuck to that principle. For instance, if we care about work incentives and paid out credits only to workers, how many families would benefit from the credits? What if we cared about families with children? Or what if we wanted to provide benefits only to working families with children?

Our data for the distributional tables are derived from the IRS Statistics of Income. This provides information on the total returns filed in each income category, as well as the number of returns that involved married or single filers, the number of returns claiming exemptions for kids etc. Our data are aggregated to represent total filers in each income range, and therefore suffer from some limitations. In particular, since we do not have the micro-data on each family that files, it is tough for us to come up with actual estimates of the total dollar amount of benefits

claimed under different proposals, especially when the phase-in or phase-out ranges lie in the middle of our income ranges. However, with the use of the tax calculator developed at AEI (discussed later) we have been able to overcome a lot of these problems since we can estimate the benefits for a typical family and average it across families in that range.

At the same time, the use of aggregate data also simplifies our exposition. Some of our proposals include providing lump sum benefits that phase out, and the only information required is the total number of filers that would be entitled to the benefits. This also makes it easier to see the aggregate costs of different policies and how far up the income distribution credits can be provided before we hit a resource constraint.

In the next section, we provide a brief overview of the current tax code with the tax credits, deductions and exemptions. In section III, we analyze the different types of credits and the growth in these credits between 2000-2006. In Section IV, we discuss the complexity that these credits have contributed to the marginal tax schedule with regions of spikes, plateaus and steps. Section V provides an overview of the literature on the effects of programs such as the EITC on labor supply and the design of the optimal tax-transfer program and discusses some prior proposals for reform. In Section VI, we derive the current distribution of credits as well as our proposed alternatives. Section VII discusses different approaches to simplifying the system of credits. Section VIII concludes.

II. The U.S. Tax Code

The United States tax system uses progressive income taxation as an important instrument of policy. However, progressive taxation, with its characteristic feature of higher marginal tax rates on the rich, has efficiency costs. High marginal tax rates may affect the incentive to work and may therefore reduce the tax base, thereby leading to large deadweight

losses. Therefore, an area of substantial debate among economic researchers, policy makers and the public concerns the design of the optimal income tax, the shape of the tax schedule and the degree of inequality that would remain once the schedule was established.

The modern setup for analyzing this equity-efficiency tradeoff using a general non-linear income tax was pioneered by Mirlees (1971). In his model, the government has to rely on a distortionary nonlinear income tax to meet both its revenue requirements and redistribute income. The main results from the model, however, are fairly weak. Mirlees showed that there is no gain to having marginal tax rates above 100 percent because nobody will have such a rate at the margin. Second, the schedule needs to account for the distribution of skills within the population and the labor-consumption preferences of the population. These properties are of little practical relevance to policies since no government would set tax rates above a 100 percent and there is too little information on the labor-consumption preferences of the population. In recent times, papers by Saez (2001), Roberts (2000), Piketty (1997) and Diamond (1998) have however, considerably extended the reach of this type of analysis.

In the U.S., redistributions take the form of either means-tested welfare programs which transfer benefits to the low-income population such as the Temporary Assistance for Needy Families (TANF), the Supplemental Security Income program (SSI), Medicaid and Food Stamps programs or tax credits that lower the tax burden of the low-income population such as the Earned Income Tax Credit, the Refundable Child Tax Credit, the HOPE and Lifetime Learning credits for education expenses and others that we will explain in detail later. In this paper, we explore those redistributive measures that are implemented through the tax code. We quantify the extent of redistribution that takes place through the tax code and identify how the multitude of tax credits, with their varying phase-in rates, maximum levels and phase-out rates affect the

marginal tax schedule for lower income groups. Our final objective is to draw on the optimal tax literature and derive suggestions for reform. Note that our paper does not propose to simplify the tax schedule by doing away with other features of the tax code, such as standard or itemized deductions and personal exemptions (as other proposals discussed later in the text do), for two reasons. First, the standard deduction (or the itemized deductions) and the personal exemptions are not specific to the lower income groups since individuals at all income ranges are able to claim these deductions and exemptions. Second, for the same reason, such an exercise would involve an analysis of the entire tax code and would have revenue implications that would require extensive modeling which is beyond the scope of this paper. Therefore, we restrict our analysis only to tax credits that are available to low income groups and how to combine all of the different credits available in the tax code into one simple credit proposal that is easily understandable.

To preview the results, we find that currently, the tax code allows low-income individuals and families (at varying income levels) more than seven different tax credits (including the refundable and non-refundable portions of each credit). The credits are either tied to certain expenditures such as child care expenses, education expenses or are provided as incentives to low-income families who work. In some cases, the credit is provided simply if individuals have a qualifying child, such as the Child Tax Credit and the Additional Child Tax Credit. These credits are in fact, available to higher income groups as well though they phase out as the incomes rise above a certain threshold. Each has varying income and other eligibility requirements, different schedules, different maximum credit values and different phase-in and phase-out ranges, adding layers of complexity and high marginal tax rates even at the lower end of the income distribution. Replacing all of these credits together with a simple policy, therefore, holds

significant promise, and we also discuss options to do so. It is important to note here that ours is not the first proposal to simplify the system of credits. In the sections that follow, we compare and contrast our approach with prior proposals for reform.

III. Tax Credits

III.A. In this section we discuss the major credits that are available to low income individuals.

III.A.I. Earned Income Tax Credit

The earned income tax credit (EITC), originally enacted in 1975, has become one of the principal antipoverty programs in the federal budget. The credit underwent significant expansions in 1990 and 1993, and by 2003, some 22 million families had claimed over \$38.7 billion of earned income credits.¹ As a result, the EITC lifted 3.7 million individuals above the poverty line.

The Internal Revenue Code provides that a taxpayer's earned income credit will equal a specified percentage of the taxpayer's earned income up to a maximum dollar amount. The maximum credit amount is available to taxpayers over a certain income range and is phased out as a taxpayer's income increases beyond a specified phase-out floor. The IRS publishes tables each year to help taxpayers and their employers determine the proper amount of their credit.

Six separate phase-out schedules exist, which are applied according to the taxpayer's marital status and the number of qualifying children. For 2009, the maximum credit amount for a filer with two qualifying children is \$5028, which equals 40 percent of the couple's first \$12,570 of income. The maximum credit is reduced by 21.06 percent of earned income (or adjusted gross

¹ Meyer (2008)

income, if greater) in excess of \$21,420 and is entirely phased out at \$45,295 of income. Note that the credit is available to low-income filers without children as well, though the level of the credit is lower than for those with children.

The EITC aims to transfer income back to low-income households and encourage work. Because of these features, the credit has been politically popular, enabling its initial adoption and subsequent expansions (Liebman 1998, Ventry 2002). The earned income credit is an income transfer program that provides significant financial assistance to low-income workers, especially those with children. Unlike most welfare programs the earned income credit provides significant work incentives for many low-income workers (Forman 1988).

The earned income credit is not without its problems. For example, the General Accountability Office has estimated that only about 75 percent of eligible households actually claimed the credit in 1999 (U.S. General Accountability Office 2001). Households with one or two qualifying children had the highest participation rates - 96 and 93 percent, respectively. In contrast, only 62.5 percent of eligible households with three or more children claimed the credit in 1999, and only 44.7 percent of eligible childless households claimed it that same year. While these participation rates are still relatively high when compared with other transfer programs such as food stamps and Temporary Assistance for Needy Families (TANF), some 4.3 million eligible households still failed to claim the credit in 1999. Moreover, remarkably few taxpayers elected to receive their credits by means of the advance payment mechanism.²

Compliance with the earned income credit is also problematic. For example, IRS audit data for 1999 show filers make excessive claims of earned income benefits by about 30 percent,

² The advance EITC allows taxpayers who expect to qualify for the Earned Income Tax Credit (EITC) and have at least one qualifying child to receive part of the credit in each paycheck during the year the taxpayer qualifies for the credit. The credit is sometimes called the AEITC.

which amounts to between \$8.5 billion to \$9.9 billion of government revenue (U.S. General Accounting Office 2003). The advance payment rules also pose problems for compliance. For example, an estimated 49 percent of filers who received the advanced payment in 1989, failed to report the receipt on their return. Similarly, about 45 percent of filers who had received advance payment of the credit failed to file returns that same year (U.S. General Accounting Office 1992). In the 2010 budget, the president has proposed to eliminate advanced payment.

The earned income credit is also responsible for creating perverse disincentives for work and marriage for some individuals. While the credit unequivocally increases the incentive to work within the phase-in range, additional income and payroll taxes combined with the phase-out of the credit may discourage work for an even greater number of low income workers that fall into the applicable phase-out ranges. Lowering the phase-out rate could reduce work disincentives, but it would also expand the phase-out range, which in turn would subject more taxpayers to higher marginal rates.³ We discuss the pros and cons of different approaches to phase-outs below.

Worse still is the earned income credit's impact on marriage. For example, in 2009, if a single father with two children and \$15,000 of earnings married a single mother with two children and \$15,000 of earnings, the couple would have faced a large marriage penalty. Before the marriage, each could claim a refundable earned income credit of \$5,028. After the marriage, the couple would only be able to claim a single earned income credit of just \$3,850, and difference of over six thousand dollars. So far, however, the empirical research has not been able to find much impact of the earned income credit's penalties and bonuses on marriage and divorce (Dickert-Conlin and Houser 2002).

³ See Eissa (1996, 2009) for a review of the literature on the labor supply effects of the EITC.

The 2009 stimulus package increased the earned income tax credit for families with three or more children and increased the income range over which the EITC phases out for married couples thereby reducing the marriage penalty. Figure 3A shows the EITC for married and single filers with 2 children. The maximum credit value and the phase-in rate is the same (at \$5028 and 40%) for both, but the EITC is available up until a slightly higher income level (about \$45,294) for married filers.

Under the provision, the EITC for families with three or more children was increased from 40 to 45 percent of qualifying earnings while the phase-out range for married couples was increased to \$5000 over the range for singles. The president's 2010 budget proposes to make this change permanent.

III.A.2. Child and Dependent Care Credit

The Child and Dependent Care Tax Credit (CDCTC) is a non-refundable credit available to low-income workers who pay for the care of children under age 13, a disabled spouse, or other dependents. The credit is intended to offset some of the costs of child and dependent care and is equal to a percentage of qualified expenses up to a cap.

The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) expanded the maximum allowable expenses that could be used to claim the credit from \$2,400 to \$3,000 per child, and up to \$6,000 per family. The legislation also increased the maximum credit rate from 30 percent to 35 percent. As under prior law, the credit rate decreases to 20 percent for higher income taxpayers, but the phase-out range is longer, so more people qualify for the higher rates. Figure 3B shows the credit for married and single filers with one qualifying child. The

maximum value of the credit is flat at \$600 beyond \$60,000, although the maximum possible credit value is technically 35% of \$3,000 (\$1,050), because it is non-refundable and phases down at a low income, the stylized families can never claim nearly that much. Like the rest of EGTRRA, the changes expire at the end of 2010.

III.A.3. American Opportunity Tax Credit

The American Opportunity Tax Credit was enacted through the American Recovery and Reinvestment Act of 2009 (ARRA) and provides additional support for parents and students with college expenses. The credit expands the reach of the existing Hope Credit, making it available to a broader range of taxpayers, including many with higher incomes and those who owe no tax. It also adds required course materials to the list of qualifying expenses and allows the credit to be claimed for four post-secondary education years instead of two. Many of those eligible will qualify for the maximum annual credit of \$2,500 per student. The full credit is available to individuals whose modified adjusted gross income is \$80,000 or less, or \$160,000 or less for married couples filing a joint return. The credit is phased out for taxpayers with incomes above these levels. These income limits are higher than under the existing Hope and Lifetime Learning Credits. Figure 3C show how the total credit amount varies as income rises for married and single filers. President Obama has proposed in the 2010 budget to make the credit permanent, but it will currently expire in 2010.

III.A.4. Refundable Child Tax Credit

The child tax credit (CTC) is the single largest federal cash assistance program for children, providing an estimated \$46 billion in subsidies to families with children in 2007. By

comparison, the Congressional Budget Office estimates the earned income tax credit (EITC) provides less than \$43 billion to low-income families while federal outlays on food stamps and other family support programs offered about \$35 billion and \$24 billion, respectively, in 2007.

The CTC, originally enacted as part of the Taxpayer Relief Act of 1997, provided a \$500 tax credit for each dependent child under the age of 17. The Economic Growth and Tax Relief and Reconciliation Act of 2001 (EGTRRA) and the Jobs and Growth Tax Relief and Reconciliation Act of 2003 (JGTRRA) doubled the credit to \$1,000 and made it partially refundable. In 2009, tax filers may claim a refundable credit equal to 15 percent of the excess of earnings over \$3,000, lowered from \$12,550 by AGGA, up to the \$1,000 maximum per child. Thus, a family with one qualifying child and earnings of \$9,600 could benefit from the full \$1,000 credit, even if it had no income tax liability. (Families with two or more children would need higher earnings to gain the maximum benefit from the credit.) The expanded refundability has made the CTC more valuable to many lower-income families, though many with very low incomes were still left out, and the lower \$3,000 floor for refundability is scheduled to end after 2010.

III.A.5. Saver's Credit

The saver's credit was enacted in 2001 to encourage retirement savings among low and middle income earners. The non-refundable credit helps to offset part of the first \$2,000 workers' voluntarily contribute to retirement savings plans by providing an additional contribution for each voluntary individual contribution. The credit is worth up to \$1,000 for singles (\$2,000 for married couples) and is available in addition to any other tax savings that may apply. The value of the credit depends on the both retirement contributions and the income

of the taxpayer. Depending on one's income, the taxpayer will get a credit of either 50%, 20%, 10% or 0% of their savings contribution, but the credit cannot exceed \$1,000. For example, a single filer contribution \$2,500 could receive the full \$1,000 if they have less than \$16,500, and \$500 if their income is \$16,501. The highest threshold to claim any credit is \$27,750 for single filers, \$41,625 for Head of Household filers, and \$55,500 for married couples filing jointly. Because the credit is non-refundable, most filers—especially ones with children—would never receive maximum amount for the credit. The president's 2010 budget would expand the saver's credit by making it refundable and providing a 50% match on the first \$1,000 for families with less than \$65,000 income. We do not show a schedule for this as it varies less by income and more by the amount contributed.

III.A.6. Making Work Pay Credit

The Making Work Pay Credit (MWP) was perhaps the most prominent tax measure in the 2009 stimulus package. The credit, designed to offset the employee share of payroll taxes, equals 6.2 percent of income up to a maximum of \$400 for working individuals and \$800 for joint filers. The credit begins to phase out at an income of \$75,000 for individuals and \$150,000 for couples. The credit is typically administered by employers, who adjust employees' automated withholdings, resulting in an increase in take-home pay. President Obama's FY2010 budget proposes to make the credit permanent. The amount of credit available to taxpayers at different income groups is shown in Figure 3E.

According to an analysis by the Tax Policy Center, MWP would reduce income taxes for three-fourths of all tax units in 2012 by an average of just over \$500, raising average after-tax income by 0.6 percent. The credit is highly progressive since after-tax income would rise by 2.4

percent for the poorest 20 percent (quintile) of households, compared with 1 percent for the middle quintile and 0.2 percent for the top quintile. In the 2010 budget, the president has proposed to change the phase-out of MWP starting in 2011 by reducing the rate (from 2% to 1.6%) which would extend the range of the phase-out, and also index the phase-out threshold for inflation.

III. B. Growth in the Size of Current Tax Credits, 2000-2006

The size of the existing tax credit programs has grown exponentially in recent years, leading to a tremendous increase in the cost to government of providing these credits. In this section, we provide a brief overview of the actual credits paid out in 2006, and the expansion in these programs since 2000. Table 1A shows the total claims for each credit in 2000-2006. We could obtain data on earlier years as well, however this pattern of growth is only likely to be replicated in earlier periods. Therefore we present this as indicative of the pattern of change over time.

As the table shows, there has been a huge spike in credits claimed under the Child Tax Credit. The total credits paid out have more than doubled over this period, rising from approximately \$20 billion to about \$47 billion. The refundable portion of the Child Tax Credit has grown by more than a 1000 percent, while the non-refundable portion has grown by about 60 percent. The EITC has also grown on average by about 40 percent over this entire period and the education credits by about 45 percent. On average, across all the credits that we are concerned with in this paper, the total size of these government transfer programs has grown by about 70 percent from \$60 billion in 2000 to \$103 billion in 2006. These costs are likely to spike in future

years with population growth as well as due to current economic conditions pushing individuals into lower income groups and increasing the base of eligible individuals.

IV. Credits and the Marginal Tax Schedule

To obtain an idea of what the marginal tax schedule looks like with all the credits, we created a Tax Calculator, similar to the NBER TAXSIM calculator. The Tax Calculator allows us to calculate the total tax after exemptions, deductions and credits for a typical family, where we can vary parameters such as the Adjusted Gross Income of the family, whether the family is a married couple or a single taxpayer, the number of children in the family and so on. In fact, the calculator essentially recreates a 1040 tax form with all the relevant entries at their respective positions. An essential part of the calculator is the rules that apply for families to either itemize deductions or take the standard deduction and the rules for each type of credit including information on their phase-in and phase-out ranges and the maximum credit available. For information on credits, we relied on the IRS data and description of each program, as well as the Tax Policy Center.

Our analysis centers on two stylized families. The first is a married couple with two children, one of whom is in college while the other is under 13. Both parents work. They spend 5% of their income on child care expenses and \$4,000 dollars on education (for families earning less than \$20,000, we assume education expenses are 25% of total income). We further assume that 20% of the family's income can be taken as itemized deductions and the family will itemize when doing so reduces the tax burden over taking the standard deduction (this occurs when income reaches \$57,000). The sample family does not claim the saver's credit. The second family is the same as the first except there is only one parent. For our marginal tax rate

calculations for the married couple, we consider the change in tax burden associated with a \$100 increase in income (we use a \$50 increment for the single parent).

Figure 1 shows the marginal tax schedule for all income earners starting from a low income of \$0 to a high of \$200,000 for the married couple, and \$100,000 for the single parent. It is of course possible to tabulate the tax rates for even higher income groups. However, since our focus is on lower income tax credits, we provide a partial view of the overall tax skyline. The two charts look marginally different since the credits apply differently to married families and single filers. In general, the amount of the credit is close to double for married filers than for single filers. As is clear from the charts, the current system leads to spikes, plateaus and steps in the skyline. Initially, as the credits, especially ones like the EITC, are phased in, the marginal tax rates are negative or declining. The negative rates are a consequence of the fact that while taxpayers in this group have zero tax liability, they are still entitled to the refundable credits. Hence the effective tax paid is negative.

In the phase-out region of the credits, the marginal tax rates start to rise leading to the steep upward shift in the schedule. In fact, at about \$22,000 the marginal tax rate jumps up to 21 percent from being negative at \$21,000. This is in large part to the phase-out of the EITC which begins exactly at \$21,450 and reduces the credit at a phase-out rate of about 21 percent. Again, after the phase-out of the EITC, the marginal rate jumps down from about 40 percent to about 28 percent as taxpayers get onto the regular income tax schedule.

The kinks and spikes at the higher end of the income distribution are a consequence of the phasing out of the other benefits such as the child tax credit as well as the education credits and also the higher marginal tax rates applied to these income levels.

V. Literature Review and Implications for Optimal Design of Tax-Transfer Systems

V.A. Literature Review

In recent times, there has been a tremendous amount of interest in the optimal design of income transfer programs and the incentives they generate. In this section, we provide a brief overview of the literature which will provide a framework for our proposed system of credit payouts to be discussed in the next section.

Eissa and Hoynes (2006) review the literature on the labor supply effects of the EITC. An unusual feature of the EITC is its explicit goal to use the tax system to encourage and support those who choose to work. Several papers have estimated the impact of the EITC on employment decisions of single women (Dickert, Hauser and Scholz 1995; Eissa and Liebman 1996; Ellwood 2000; Grogger 2003; Hotz, Mullin and Scholz 2002; Keane and Moffitt 1998; Meyer and Rosenbaum 2000, 2001; Rothstein 2005), all consistently finding that the EITC increased their labor force participation. Several papers estimate difference-in-difference models applied to a single or multiple expansions of the EITC. In these models, change in the employment rate of the treatment or eligible group (single women with children) is compared to the change in the employment rate of a control or unaffected group. This approach is used by Eissa and Liebman (1996), Ellwood (2000), Hotz, Mullin and Scholz (2002), Meyer and Rosenbaum (2000), and Rothstein (2005). The most common control group is childless single women (Eissa and Liebman 1996, Meyer and Rosenbaum 2000, Rothstein 2005).⁴ Other comparisons exploit different features of the design of the EITC. Ellwood (2000) and Rothstein (2005) use the fact

⁴ Note that this does not mean that the EITC is not available to childless filers. It is available to a narrow range of low income filers without children.

that the shape of the credit implies different incentives at different hourly wages and compare single mothers at different wage or skill levels. Eissa and Liebman (1996), Hotz, Mullin and Scholz (2002), and Meyer and Rosenbaum (2000) exploit the second child marginal credit and compare single women with one versus those with two or more children.

Overall these studies suggest a strong positive relationship between the EITC and employment rates of single women with children. Further, the results are remarkably consistent across different policy expansions, different control groups and different methodologies. The estimated size of the labor supply effect differs depending on the particular expansion considered. Eissa and Liebman (1996) find that the 1986 expansion of the EITC led to a 2.8 percentage point increase in participation (out of a base of 74.2) for single mothers. Meyer and Rosenbaum (2001) find that 60 percent of the 8.7 percentage point increase in annual employment of single mothers between 1984 and 1996 is due to the EITC. They find that a smaller amount, 35 percent of the increase in participation between 1992 and 1996 is due to the EITC (with the remainder due to welfare reform and other changes). The range of the implied labor force participation elasticity with respect to net income across all studies is quite narrow—between 0.69 and 1.16 (Hotz and Scholz 2003).

A limited set of papers have examined the impact of the EITC on the hours worked by single mothers. This is in part because estimating the hours worked response of *workers* to the EITC budget constraint is fundamentally a harder empirical problem. In particular, one has to deal with the selection of individuals into the labor force. Eissa and Liebman (1996) apply their difference-in-difference model to annual hours worked (conditional on working) and find a small positive (and marginally significant) impact on all single mothers and a zero impact on low educated single mothers. Meyer and Rosenbaum (2001) find mixed (positive and negative) but

insignificant impacts of the EITC on hours worked (conditional on working). Rothstein (2005) finds no difference between single mothers and childless single women in weekly hours worked (conditional on working) across the wage distribution. Keane and Moffitt (1998) estimate a structural model of labor supply choice and simulate the effect of the EITC on total hours but do not present a separate estimate for those already working.

While the literature on married women and the EITC is limited, the results are quite consistent with the theoretical expectations. Eissa and Hoynes (2004) estimate a difference-in-difference model comparing married mothers to married women without children and find that the 1993 EITC expansion led to a one percentage point reduction in the participation rate of married mothers. Eissa and Hoynes (2006) find that expansions in the EITC are also associated with reductions in hours worked for married women who are working. They estimate hours of work as a function of after tax wages and unearned income, again assuming women are secondary earners. They instrument for the after tax wage using tax parameters. They find that expansions in the EITC from 1984-1996 led to a small, 1 to 4 percent, decrease in annual hours for married women with children. Heim (2005) estimates a structural model of family labor supply and finds similar impacts on hours worked of married women (yet he finds no impact of the EITC on employment of married women).

V.B. Optimal Design of Tax-Transfer Programs

The finding that labor force participation responses are more significant than hours worked responses has several important implications for the design of tax-transfer programs and the welfare evaluation of taxation. Recent work has shown accounting for a labor force participation response can change the optimal transfer program (Saez, 2001). More precisely,

this work has shown that with sufficiently high participation elasticities, the optimal tax-transfer scheme can be similar to the EITC - with negative marginal tax rates at the bottom of the earnings distribution. An EITC would, on the other hand, be inefficient in a standard model with only intensive (hours worked) responses. Liebman (2002) extends on this work by examining more closely the optimal design of the EITC. He uses a micro-simulation model calibrated to 1999 CPS data to illustrate the trade-offs in the design of an EITC—including the optimal maximum credit, phase-in and phase-out rates—with fixed costs and participation effects. Liebman finds that the efficiency cost of transferring income through the EITC is substantially lower than previous studies have found, in large part because of the participation response of single mothers and the associated reduced welfare spending. His simulations suggest a cost of less than \$2 to provide a transfer worth \$1 to EITC recipients.

Liebman (2002) offers, in fact, a concrete design for the optimal tax-transfer program based on an analysis of the behavioral impact of the EITC. His study concludes that for reasonable social welfare weights, the optimal EITC would be one with a very high phase-out rate. This would create something like a cliff in which the entire EITC is eliminated immediately at the end of the plateau. This is optimal because the distribution of married taxpayers is quite thick at the end of the current phase-out region. As suggested by our analysis in the previous section, increasing the phase-out rate saves a significant amount of money that would go to individuals with relatively high incomes, and, accordingly, low social welfare weights. Second, rapid phase-in rates may also be part of the optimal EITC, especially for married couples.

It is interesting that at least, the results for the rapid phase-out rate are corroborated by at least two other papers. Moffitt (2002) reviews the economic research on the topic of welfare

programs and their labor supply and work incentive effects. In particular, he compares how switching from the current system of Medicaid payments, which involve a reduction in benefits to zero above a certain income level, to a system of a gradual phase-out of benefits would affect labor supply. This is illustrated in Figure 4A. Moving from a “notch” to a phase-out of benefits would cause an ambiguous effect on labor supply. While it is true that those initially at D are encouraged to work more, (arrow 1), those represented by arrows 2 and 3 experience labor supply reductions. In our application, however, we are concerned with the move from a phase-out to a notch, as could be implemented for something like the EITC. In that case, it seems more unambiguous that there would be an increase in labor supply due to the notch since those who are on the segment CD would be unaffected, but those on the segment DD’ may be better off increasing labor supply and income by moving back to the usual budget line.

This is more clearly illustrated in a paper by Sheiner (1994) though the focus of the paper is on health care reform. The paper suggests that a cliff could be more efficient than a gradual phase-out. This can be illustrated by means of Figure 4B. In the figure, the horizontal axis represents pre-tax and transfer income, the vertical axis represents post-tax and transfer income and the 45 degree line represents the no-tax budget line. In the figure, for simplification everyone is subject to a marginal tax rate t_1 and those with income below a certain level also receive cash transfers valued at say, \$4000. The marginal tax rate at the cliff is undefined. After the threshold, however, the marginal income tax is again only t_1 . As is clear from the indifference curves on the graph, anyone with wages at w_1 or less would prefer to be at the kink at point A. Anyone with a wage w_3 would not be affected by the cliff. Anyone with wage w_2 however, is affected by the existence of the cliff versus the phase-out range. With a cliff, individuals on w_2 would prefer to be at a point in the phase-out region since they may lower their work effort (and income) and still

be on the same indifference curve. Therefore a phase-out can potentially have adverse work impacts since it induces people to move down their indifference curves.

However, it is also important to keep in mind that these optimal work incentive effects are likely to arise only if individuals have perfect information about the shape of the credit or the marginal tax schedule. In the more likely scenario of limited information, such a rapid phase-out range may inadvertently adversely affect households who are unaware that the next dollar they earn will cause them to lose all their benefits. Therefore, in our discussion of alternative proposals, we include not only ones with cliffs but also ones with gradual phase-out ranges.

V.C. Some Prior Proposals For Reform

Before we discuss the several alternatives that we provide, it is important to point out that ours is not the first proposal for reforming the complex system of credits that exists today. We discuss three alternative proposals. We also provide where possible and available, an estimate of the total costs and a distributional analysis showing how each of these proposals would influence the amount and level of credits going to different income households.

The 2005 President's Advisory Panel on Federal Tax Reform proposed to consolidate existing family, child and work-related tax benefits into two credits: a Family Credit and a Work Credit. The family credit would combine the benefits of the personal exemption, standard deduction, head of household filing status and the child tax credit into a single credit that would be available to all tax payers. Similarly, the Work Credit would result from consolidating the EITC and refundable portion of the child tax credit. The credit amount would be determined by a credit base, which depends on the household type, and would increase with each additional child. The Family Credit would apply to all income levels and would work in conjunction with

the Work Credit to provide refundability to low-income workers. Computation of the allowable credit would also be simplified for taxpayers because eligibility rules would be streamlined and both credits would remain available to all taxpayers whether or not they claim deductions or other tax benefits. These changes, combined with the other provisions put forth by the panel would have an overall neutral effect on revenues. As stated in the Panel report, the objective of the Panel was not to fundamentally change the amount or availability of the benefits, but to ensure that these provisions would serve their intended purposes as efficiently as possible. As such, we can assume that under the President's Advisory Panel proposal, the distribution and amount of credits would look similar to what we observe today. As we have already shown, this distribution extends up until a high income level of almost \$500,000. Therefore, our proposals substantially differ from the Panel's proposals in that they provide the same total credits but to just the lower income groups, thereby implying that the credits per low income family are higher.

The Economic Policy Institute has advocated the Simplified Family Credit (SFC) put forth in 2000 by Robert Cherry, of Brooklyn College, and Max B. Sawicky, of the Economic Policy Institute (EPI). The proposal combines the dependent exemption with the EITC, Child Credit and the Additional Child Credit to offer a single credit to all tax payers. Seven phase-out schedules would apply to the credit depending on the number of children. Rather than allowing the credit to completely expire, the proposal would allow it to settle at an amount equal to the dependent exemption and the child credit under the second-lowest statutory tax rate (then 28 percent). The plan would also lower the credit's phase-out rates and expand its phase-out range, thus reducing the marriage penalty. According to Cherry and Sawicky, the proposal would cost \$32 billion in 1999. They also estimate that the 10 year cost could be close to \$390 billion.

A plan offered by Tax Policy Center's Adam Carasso, Jeff Rohaly and Eugene Steuerle also proposes to consolidate the EITC, the child credit and the dependent exemption into a single Unified Child Credit (UCC). Relative to 2003 law, the plan would increase phase-in rates, create a standard age limit and would lower the phase-out rate. The plan would also eliminate the dependent tax exemption under the AMT, which is frequently used as a tax shelter. According to the proposal, a universal version of the child credit that does not phase-out at higher incomes would cost over \$25 billion in 2010. However, this also involves raising the top marginal tax rate from 35 to 36%. Under different versions of the credit, which do not include, for instance, raising the top rate, the cost of the policy could be as high as \$156 billion.

VI. Moving Toward a Unified Credit

VI.A. Current Distribution of Credits

In this section, we propose several alternatives to the current system of credits that may simplify the tax-transfer system and achieve the kind of redistribution that is specifically focused on the lower income groups. Surprisingly, under the current system of credits, the distribution of credits extends far into the upper income ranges. As Table 1B shows, the government currently pays out more than \$27 billion to those with annual incomes above \$50,000, and more than \$5 billion to individuals in the \$100,000-\$200,000 income range. These numbers are based on 2006 IRS data and are likely to be even higher today. Further, they include only the credits that we account for in our analysis (using "education credits" which covers the Hope credit instead of the AOTC, and excluding the Making Work Pay Credit, which did not exist in 2006). There are in fact, other credits available to businesses such as the investment tax credit that would raise the

credit amounts at the upper end of the distribution. Table 1C shows the total credits claimed for each level of credit as a fraction of all returns.

In Table 2 we project the total credits in 2009 by scaling up the 2006 number to account for the population growth rate, the inflation rate and also using initial projections of the likely cost of Making Work Pay and AOTC from the stimulus bill. In particular, for the Making Work Pay credit, the projections suggest that the total cost for the years 2009 and 2010 is likely to be about \$110 billion. Therefore, we include about \$55 billion as the cost for 2009. Table 2 also scales up the total married and single returns by the average rate of growth of population. Our projections imply that the total cost of all credits in 2009 is likely to be about \$170 billion. Of course, if the Make Work Pay and the AOTC are not made permanent, this number should be scaled down appropriately.

VI.B. Proposed Alternatives to Simplify Credits

VI.B.1 Eligibility

The first thing to consider when devising a new system of credits is to determine eligibility for the credits. Under the current rules the provisions to adjust for family size and to encourage work are unnecessarily complex. For example, the maximum age for a qualifying child is 16 for the child tax credit but is 23 for the EITC. There are also differences in the definition of gross income which determines eligibility. Finally, the size of the family-one child or two, single or married-also determines the amount of benefits available. In our proposals, we offer several alternatives to account for all these restrictions. For instance, we initially allow credits to be provided to all low-income individuals with any type of income, including individuals with no income or no earned income. This is justified since redistributive policies

could be targeted towards exactly the groups with the least or no incomes rather than those with earned income only. We then offer several proposals that only provide benefits to people with earned income. Finally, we also consider the case where we only provide benefits to families with children.⁵ Since these data rely on the eligibility rules for qualifying children that exist in the current tax code, we assume that the same rules hold, but they apply uniformly to all our credits. For instance, if all children under 18 qualify for an exemption under the current system, then that age restriction has to hold for any new credit involving children under our proposals. As we will see, the more restricted the set of individuals receiving the benefits, the higher up in the income distribution is the availability of benefits.

VI.B.2. Lump Sum Credits

Table 3 presents the first proposal for a simplified credit. This includes giving all filers a lump sum credit up until a certain income level, with the credit being double for married filers. This will reduce the marriage penalty that currently exists in programs like the EITC, though it will not completely eliminate it since married filers are likely to have higher incomes possibly moving them beyond the income range at which the credit is available. As the credit chart in Figure 2 shows, the maximum credit paid out is about \$7000 at incomes below \$15,000. Therefore, we analyze a lump sum credit of about \$7000 for married filers and \$3500 for single filers. We extend the credit to all households up to an income range at which the cost of the credit is just below or close to the credits that would be paid out under the current system of about \$170 billion. Column (1) shows that such a lump sum credit could be extended to all households earning less than \$15,000 in income. The total cost is about \$150 billion, suggesting

⁵ There is a debate in the literature on whether the individual or the family unit should be the basis for taxation, and what the optimal tax treatment of married couples should be. For papers on these topics, see Kleven, Kreiner and Saez(2006), Brazer(1980) and Cudmore, Piggott and Whalley (2007).

that we could possibly extend the credit to people marginally above \$15,000 as well. Or the “savings” could be used to lower the marginal tax rate on those earning above \$15,000.

Columns (2), (3) and (4) show similar policies with the credit amount varying from \$3000-\$5000. As we may expect, as the credit amount goes down, the government can target a higher base of people. So for instance, with a \$3000 credit, the system could be extended to all those with incomes below \$50,000. The cost of the policy in each case is quite close to the current system.

Table 4 also proposes a system of lump sum credits, but with two different credit amounts. The idea is to have a slightly lower credit available at lower incomes and a marginally higher credit at higher incomes, which may preserve people’s incentives to move to a higher income level through work. Note that in neither of these examples are we imposing a work requirement. The credit is provided to people with no incomes as well, suggesting that they are unemployed. In Column (1) of this table, we explore an initial credit of 20 percent of the maximum credit of \$5000 (for married) up to \$25,000 and above that a maximum credit of \$5000. In column (2), the maximum credit amount is changed to \$4000 and the initial “phase-in” is at 15 percent. In the first case, the credit can be extended to \$50,000 of income and in the second case, up until \$75,000. The cost of the first policy is less than \$150 billion and the cost of the second is \$174 billion. Note that another addition that we could consider to these schedules is the inclusion of a third lower lump sum credit to ease the phase-out of the credit.

The marginal tax schedule for a typical lump sum credit is shown in Figure 5A. The tax rate is essentially more than a 100 percent at the point at which the credit reaches its cliff or phase-out, and beyond that point the tax schedule is exactly identical to the marginal tax

schedule without any credits. Figure 5B shows the marginal tax schedule when the credit amount increases at some threshold. At that point, the marginal rate spikes below -100 percent.

VI.B.3. Wage or Income Credits with Phase-In and Phase-Out Ranges

An alternative would be to use the current EITC design, but to fold all of the various credits into one simple credit. Table 5 describes a system similar to the current EITC with phase-in and phase-out ranges based as percentages of income. Note that in this table we only provide credits to families reporting nonzero income, which could be from any source, a job or investment income. In the first case, we explore a phase in rate of 40 percent, a phase-out rate of 20 percent (both similar to the EITC) and a maximum credit of \$6000 at \$15,000 of income. Under the second, we propose a phase-in rate of 20 percent until \$30,000, at which point the credit would equal \$6,000, followed by a cliff where none of the credit would be available to those earning over \$30,000. The cost of such a policy is about \$180 billion⁶, though it could be lowered by lowering the income range to which the credit applies. The marginal tax schedules associated with this are shown in Figure 5C and 5D. In the last column, we also consider a policy with a phase-in rate of 60 percent and a phase-out rate of 45 percent with a maximum credit of \$6000. In this case, the credits can be made available to all individuals with a maximum income of \$40,000 and the cost of the policy is about \$165 billion. The reason we chose the 45 percent rate is that this is close to the maximum marginal tax rate that is currently faced by individuals in the tax code.

Finally, in Table 6, we use the shape of the current credits paid out to develop a simplified system. As the shape of the credit curve shows, the maximum credit is about \$7500

⁶ For cost calculations involving phase-ins and phase-outs, we have assumed that within each of the Statistics of Income's income ranges, income is distributed uniformly. Since the relevant income ranges are small (either \$5,000 or \$10,000), this is a reasonable assumption.

and applies to about \$15,000 of income and then the curve flattens out. Therefore, we consider an initial tax credit of 50 percent of income up to \$15,000 of income, and then apply a tax rate of 10 percent to all income between \$15,000-\$40,000. For this, we use information on the total taxable income of households at different income ranges from the IRS and information on their total taxes paid, after credits. We then apply the 10 percent tax to taxable incomes above \$15,000. The table shows the total tax that would be paid under the proposed 10 percent tax rate, and calculates the difference in tax collections under this system and the current system. Surprisingly, even though incomes in this tax bracket are essentially charged a 15 percent marginal tax rate, the total tax collections would go up under the 10 percent tax, since we are eliminating the credits entirely for this range. Providing households with incomes less than \$15,000 a 50 percent tax credit and households with incomes at \$15,000-\$40,000 a 10 percent marginal tax rate (a 5 percentage point reduction in the rate but a loss of tax credits), would cost the Treasury about \$130 billion—a number still substantially lower than the \$170 billion that would be incurred under the current system. The marginal tax schedule is shown in Figure 5E.

Note that several of our proposals, including the one discussed in the previous paragraph, involve cliffs instead of gradual phase-outs. In other words, the households essentially move from receiving the maximum credit to receiving no credit-effectively losing 100 percent of the credit amount on the next dollar earned. The marginal tax rates in this region are of course going to be higher than 100 percent for filers moving off the cliff to the no-credit budget line. While this may cause concern among policy makers and the public, the literature from the previous section supports the view that such rates create less of a work disincentive than having long phase-out regions where benefits are reduced at a less than 100 percent rate as income rises. The literature review (papers such as Moffit 2002 and Sheiner 1994) shows that while the “notch” or

the cliff will essentially lead to workers refusing jobs that pay less than what they would receive with the credits at the cliff, there would at least be less of an incentive for higher income workers to reduce their work effort to get the advantage of the credits. In addition, the government would save money by not having to provide credits to individuals with incomes at the higher end of the income range.

Having said that, however, it is important to understand that the cliff-type schedules are likely to work best (in terms of work incentives) when individuals possess all the information they need to be able to claim credits correctly and make informed decisions about their location on the labor supply curve vis-à-vis the kink at the cliff. Further, they need to be able to freely adjust their labor supply in terms of hours worked. In the absence of full information, it is extremely likely that such policies will harm households that are unaware of the shape of the credit schedule and the fact that beyond the cliff region they will suddenly lose all the credits and face a steep marginal tax hike. This is not unrealistic since even under the current system, it is clear that individuals do not possess all the information they need to claim, for instance, the EITC credits. To account for this possibility, in the last proposal, we consider a gradual phase-out region in the credit schedule. Table 7 shows the different possibilities for such a schedule.

In the first policy, we consider a 50 percent wage credit available up until \$5,000 of income, which smoothly decreases by 10 percent of income for every \$5,000.⁷ In this case, the credit can be extended to all households earning less than \$30,000. The total cost of this policy is approximately \$200 billion. In the second policy, we change the initial credit percentage to 40 percent and in the third case, we change it to 30 percent. Under the second policy, the 40 percent

⁷ Since this credit is defined as a percentage of income, this phase-out is different from the type we previously discussed. As the credit decreases, it contributes from -50% to over 50% to the marginal tax rate.

wage credit is available to all households earning under \$10,000 and in the third policy, the 30 percent wage credit is available to all households earning under \$15,000. Under both policies, the credits can be extended to households earning less than \$30,000 and the total cost of the policy is only marginally more than under the current system of credits. These represent the best alternative to the ending the credit range with a cliff since households gradually lose their benefits and are able to adjust to the rise in marginal rates as they move off the credits. The marginal tax schedules for these three policies are shown in Figure 5F.

VI.B.4. Targeted Credits

In the final two tables, we restrict the target population for the credits based on certain social goals that seem to influence the current design of the tax code. For instance, several credits such as the Child Tax Credit and the Child and Dependent care expenses credit are targeted towards families with children. The EITC rewards work and also families with children. Therefore, in the next set of proposals we allow for these possibilities, i.e., we allow for these credits to be limited only to families with children, rather than being available to the universe of low income people. This would enable us to extend the credit (if that were what was needed) to a higher income range since the proportion of families in each income range receiving the credit would be far lower than under the previous proposals. Table 8 shows two credit policies restricted to filers that have taken an exemption for a child at home. As we expect, the total number of families at different income ranges that could be covered under such a policy is far higher. A lump sum credit of \$7,500 can reach up until an income level of \$50,000. An even larger credit can be given for a similar cost if it is phased in at a rate of 40%. Note that in the first income range, the aggregate income is negative. For purposes of the calculation, we assume that

everyone earns an average income of \$2500, which is presumably a higher number than what we would get if we knew the actual proportion of people with positive incomes.

For Table 9, we restrict the credit to people with earned income from a job. For these schemes, we phase-in at a rate of 60 percent, reach a maximum level of credit and then phase out at 22 percent. The 22 percent tax rate is chosen to match the phase-out of the EITC, the highest credit phase-out in the current tax code. The table shows the cost of the policy when the phase-in and phase-out rates are half for single filers. If we keep the rates the same for married and single filers, the cost is approximately \$232 billion. If this policy is enacted and is further restricted only to families with children, the total cost of the policy would be about \$174 billion and would extend up until an income level of \$100,000. For these tables, we assume that the distribution of returns between married and joint filers is the same as under the earlier tables. The marginal tax schedule for this final policy is shown in Figure 5G.

Finally, there is also some debate that the credits should not be available to retirees who anyway earn social security income and other benefits. Because of this, we also attempted to put in an age restriction in the above tables for eligibility for the credit. For instance, we estimate that in 2006, about 14 percent of all returns claimed social security benefits. Therefore, as an approximation, a policy that restricted credits to filers aged 65 or less, would have a 14 percent lower cost relative to the estimates shown in Tables 3-7. (Since Tables 8 and 9 involve only wage and salary income filers and/or families with children at home, these tables are less likely to include filers aged 65 and above to begin with). In that case, the credit could be extended at least up one more income range.

VII. Discussion of the Alternatives

To summarize, there are several alternatives that could tremendously simplify the current panoply of tax credits available to low income people. We started off with a discussion of credits that are provided lump sum to eligible individuals. Since under the current credits, the maximum size of the credit is about \$7,500, we used similar amounts to see how many filers could benefit from such a system which does not rely on complex eligibility rules and does not have phase-in or phase-out ranges. While the advantage of such a system is its simplicity, the biggest drawback is the existence of a cliff at the point where the individual receives a dollar of income which no longer qualifies him for the credit. With limited information individuals facing these cliffs would face steep marginal tax hikes (in the thousands of percent) that would cause them to lose all of their benefits on the next dollar that they earn. Therefore, for practical reasons such a policy cannot be advocated and is in fact, unlikely to be adopted. The only reason we consider this here is that there is academic literature to support the idea that cliffs are better at preserving work incentives than gradual phase-out ranges. At the very least, a rapid phase-out range has been shown to be a part of the optimal design of programs like the EITC (Liebman, 2002)

Next, we considered proposals with credits provided as a percentage of income and with phase-in and phase-out ranges but no cliffs. These are marginally better than the cliffs but even these involve often steep marginal tax hikes that are unlikely to be popular.

The final set of proposals include setting the phase-out rate to equal 22 percent on each additional dollar earned, similar to the EITC. These proposals are the most practical since the 22 percent marginal tax hike comes close to the maximum tax hike that low income individuals currently face under the tax code.

In addition, by making the policies targeted towards either families with children, families with earned income or both and excluding retirees, we can reproduce somewhat the current distribution of tax credits without extending too much up the income scale. Therefore, we believe that adopting some version of this proposal would be preferable to the current complex system of credit distribution.

VIII. Conclusion

The United States tax system uses progressive income taxation as an important instrument for achieving its objective of redistribution. In this paper, we quantify the extent of redistribution that takes place through the tax code and identify how the multitude of tax credits, with their varying phase-in rates, maximum levels and phase-out rates affect the marginal tax schedule for lower income groups.

Currently, the tax code allows low-income individuals and families (at varying income levels) more than seven different tax credits (including the refundable and non-refundable portions of each credit). The credits are either tied to certain expenditures such as child care expenses, education expenses or are provided as incentives to low-income families who work. Each has varying income and other eligibility requirements, different schedules, different maximum credit values and different phase-in and phase-out ranges, adding layers of complexity and high marginal tax rates even at the lower end of the income distribution. Replacing all of these credits together with a simple policy, therefore, holds significant promise, and in this paper we provide several alternatives that may allow the government to reduce the complexity of the tax code while at the same time enable it to achieve its objective of

redistribution. If we had to choose among the several alternatives, however, we believe that the most practical policy is one that phases in at a rapid rate and phases out at a rate of about 22 percent for every additional dollar earned, the maximum phase out rate faced by individuals under the current tax code. By further restricting the availability of this credit to families with children and work related income and ensuring that the total cost of the credit does not exceed the costs of the current system, we could ensure to some extent that the proposed new credit achieves the goals of distributional and revenue neutrality.

References

- Altshuler, Roseanne et al (2009). "Tax Stimulus report Card: Conference Bill," Tax Policy Center. <http://www.taxpolicycenter.org/publications/url.cfm?ID=411839>
- Brazer, Harvey E. (1980), "Income Tax Treatment of the Family," in *The Economics of Taxation*, ed. Henry J. Aaron and Michael J. Boskin, Brookings, Washington DC.
- Carasso, Adam, Jeffrey Rohaly and C. Eugene Steuerle (2003). "Tax Reform for Families: An Earned Income Child Credit," Brookings Institution Welfare Reform and Beyond Brief No. 26.
- Cudmore, Edgar, John Piggott and John Whalley (2007), "Income Tax Design and the Desirability of Subsidies to Secondary Workers In a Household Model With Joint and Non-Joint Time," NBER Working Paper No. 13503
- Diamond, P. (1998). "Optimal Income Taxation: an Example with a U-Shaped Pattern of Optimal marginal Tax rates," *American Economic Review* 88: 83-95.
- 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 *Tax Policy and the Economy*. James Poterba, ed. Cambridge: MIT Press.
- Dickert-Conlin, Stacy, and Scott Houser (2002). "EITC and Marriage." *National Tax Journal* Vol. 55, Issue 1 (March): 25-40.
- Eissa, Nada (1996). "Tax Reforms and Labor Supply." In *Tax Policy and the Economy* Vol. 10, Ed. James Poterba (119-51). Cambridge, MA: MIT Press.
- Eissa, Nada (2009). "Evidence on Labor Supply and Taxes, and Implications for Tax Policy," *Tax Policy Lessons from the 2000s*, Ed. Alan Viard. Washington: AEI Press.

- Eissa, Nada and Hilary Hoynes (2004). "Taxes and the Labor Market Participation of Married Couples: The Earned Income Tax Credit," *Journal of Public Economics*, Volume 88, Issues 9-10, Pages 1931-1958, August 2004.
- Eissa, Nada and Hilary Hoynes (2006). "The Hours of Work Response of Married Couples: Taxes and The Earned Income Tax Credit," CESifo/MIT Press conference volume, *Tax Policy and Labor Market Performance*, Ed. Jonas Agell and Peter Birch Sorensen. Cambridge: MIT Press.
- Eissa, Nada and Jeffrey Liebman (1996). "Labor Supply Response to the Earned Income Tax Credit," *Quarterly Journal of Economics*, CXI, 605-637.
- Ellwood, David (2000). "The Impact of the Earned Income Tax Credit and Social Policy Reforms on Work, Marriage and Living Arrangements," *National Tax Journal* 53(4) Part 2 (December).
- Forman, Jonathan Barry (1988). "Improving the Earned Income Credit: Transition to a Wage Subsidy Credit for the Working poor," *Florida State University Law Review* 16(1): 41-101.
- Ellwood, David, and Jeffrey Liebman (2000). "The Middle Class Parent Penalty: Child benefits in the U.S. Tax Code," NBER Working Paper No. 8031.
- Grogger, Jeffrey (2003). "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income among Female-Headed Families," *Review of Economics and Statistics*, Volume 85, Issue 2, May 2003.
- Heim, Bradley (2005). "The Impact of the Earned Income Tax Credit on the Labor Supply of Married Couples: Structural Estimation and Business Cycle Interactions," mimeo, Duke University, May 2005.
- Hotz, V. Joseph, Charles Mullin and John Karl Scholz (2002). "The Earned Income Tax Credit and the Labor Market Participation of Families on Welfare," Mimeo, UCLA.
- Hotz, V. Joseph and John Karl Scholz (2003). "The Earned Income Tax Credit" in Robert Moffitt, ed. *Means-Tested Transfer Programs in the United States*. Chicago: University of Chicago Press.
- Keane, Michael and Robert Moffitt (1998). "A Structural Model of Multiple Welfare Program Participation and Labor Supply," *International Economic Review* 39(3):553-589.
- Kleven, Henrik Jacobsen, Claus Thustrup Kreiner and Emmanuel Saez (2006), "The Optimal Income Taxation of Couples," NBER Working Paper No. 12685

- Liebman, Jeffrey (1998). "The Impact of the Earned Income Tax Credit on Incentives and the Income Distribution." In *Tax Policy and the Economy* 12. James Poterba, ed. Cambridge: MIT Press.
- Liebman, Jeffrey (2002). "The Optimal Design of the Earned Income Tax Credit," in *Making Work Pay: The Earned Income Tax Credit and Its Impact on American Families*. Ed. Bruce D. Meyer and Douglas Holtz-Eakin. Russell Sage Foundation.
- Meyer, Bruce D. (2008). "The US earned income tax credit, its effects, and possible reforms," Institute for Labour Markey policy Evaluation Working Paper 2008:14.
- Meyer, Bruce and Dan Rosenbaum (2000). "Making Single Mothers Work: Recent Tax and Welfare Policy and its Effects." *National Tax Journal* 53(4) Part 2 (December).
- Meyer, Bruce and Dan Rosenbaum (2001). "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics*, Vol. 116, Issue 3 (August).
- Mirrlees, J. A. (1971). "An Exploration of the Theory of Optimum Income Taxation," *The Review of Economic Studies* 38(2): 175-208 (April).
- Moffitt, Robert (2002). "Welfare Programs and Labor Supply," NBER Working Paper 9168.
- Piketty, T. (1997). "La Redistribution Fiscale face au Chomage," *Revue Francaise d'Economie*, 12: 157-201.
- President's Advisory Panel on Federal Tax Reform (2005). "Simple, Fair, and Pro-Growth: Proposals to Fix America's Tax System." Available from: <http://govinfo.library.unt.edu/taxreformpanel/final-report/>
- Roberts, K. (2000). "A Reconsideration of the Optimal Income Tax" in *Incentives and Organization: Papers in Honour of Sir James Mirrlees*, Ed. P.J. Hammond and G.D. Myles, Oxford: Oxford University Press.
- Rothstein, Jesse (2005). "The Mid-1990s EITC Expansion: Aggregate Labor Supply Effects and Economic Incidence," mimeo, Princeton University.
- Saez, Emmanuel (2001). "Using Elasticities to Derive Optimate Income Tax Rates," *Review of Economic Studies* 68: 205-229.
- Sawhill, Isabel, and Adam Thomas (2001). "A Tax Proposal for Working families with Children," Brookings Institution Welfare Reform and Beyond Brief No. 3.
- Sawicky, Max B., Robert Cherry and Robert Denk (2002). "The Next Tax Reform: Advancing Benefits for Children," Economic Policy Institute.

- Sheiner, Louise (1994). "Marginal Tax Rates and Health Care Reform," *National tax Journal* 47:497-517.
- Steuerle, Eugene (2000). "Combining Child Credits, the EITC, and the Dependent Exemption: First of Two Parts: Is a New Momentum Being Created," *Tax Notes* (April).
- U.S. General Accounting Office (1992). "Earned Income Tax Credit: Advance Payment Option Is Not Widely Known or Understood by the Public." GAO/GGD-92-26. Washington, DC: U.S. General Accounting Office.
- U.S. General Accounting Office (2001). "Earned Income Tax Credit Participation." GAO-02-290R. Washington, DC: U.S. General Accounting Office.
- U.S. General Accounting Office (2003). "Earned Income Tax Credit: Qualifying Child Certification Test Appears Justified, but Evaluation Plan Is Incomplete." GAO-03-794. Washington, DC: U.S. General Accounting Office, September.
- Ventry, Dennis J. (2002). "The Collision of Tax and Welfare Politics: The Political History of the Earned Income Tax Credit," in *Making Work Pay: The Earned Income Tax Credit and Its Impact on American Families*, Eds. Bruce Meyer and Douglas Holtz-Eakin, Russel Sage Foundation.

Table 1A: Current Cost of Credit Programs and Growth Between 2000-2006

	2006	2005	2004	2003
Child Care Credit	3,486,637,000	3,462,104,000	3,337,984,000	3,206,890,000
Child Tax Credit				
Regular	31,741,551,000	32,047,620,000	32,300,455,000	22,788,025,000
Additional	16,248,889,000	15,495,160,000	14,450,019,000	9,112,716,000
Both	47,990,440,000	47,542,780,000	46,750,474,000	31,900,741,000

Education Credits	7,022,420,000	6,119,631,000	6,016,805,000	5,842,966,000
EITC				
Offsetting Income Tax	797,162,000	745,322,000	767,524,000	926,381,000
Offsetting Other Tax	4,518,182,000	4,199,530,000	3,957,021,000	3,718,355,000
Refundable	39,072,222,000	37,465,440,000	35,299,505,000	34,012,332,000
Total	44,387,566,000	42,410,292,000	40,024,050,000	38,657,068,000
Total	102,887,063,000	99,534,807,000	96,129,313,000	79,607,665,000
	2002	2001	2000	
Child Care Credit	2,706,539,000	2,721,061,000	2,793,860,000	
Child Tax Credit				
Regular	21,520,271,000	22,427,229,000	19,689,359,000	
Additional	6,415,753,000	4,994,877,000	977,641,000	
Both	27,936,024,000	27,422,106,000	20,667,000,000	
Education Credits	4,882,853,000	5,156,254,000	4,851,178,000	
EITC				
Offsetting Income Tax	1,114,948,000	1,470,200,000	1,968,680,000	
Offsetting Other Tax	3,346,682,000	2,862,938,000	2,523,703,000	
Refundable	33,736,942,000	29,042,833,000	27,803,959,000	
Total	38,198,572,000	33,375,971,000	32,296,342,000	
Total	73,723,988,000	68,675,392,000	60,608,380,000	

Table 1B: Current Distribution of Credits (based on 2006 data)

	Total credits paid (2006)	Married Returns(2006)	Single Returns(2006)	Total Returns(2006)	Average Credit Paid Per Filer
All returns, total	102,887,063,000	53,294,930	85,099,824	138,394,754	743
No adjusted gross income	523,253,000	797,892	1,877,702	2,675,594	196
\$1 under \$5,000	1,874,140,000	742,980	10,890,390	11,633,370	161
\$5,000 under	7,752,665,000	1,181,314	10,605,433	11,786,747	658

\$10,000					
\$10,000 under \$15,000	13,725,465,000	1,731,597	9,980,083	11,711,680	1,172
\$15,000 under \$20,000	13,576,803,000	2,191,926	8,745,768	10,937,694	1,241
\$20,000 under \$25,000	11,030,332,000	2,289,462	7,622,799	9,912,261	1,213
\$25,000 under \$30,000	8,752,665,000	2,214,262	6,535,499	8,749,761	1000
\$30,000 under \$40,000	9,935,856,000	4,430,880	9,720,944	14,151,824	702
\$40,000 under \$50,000	6,791,859,000	4,349,177	6,338,016	10,687,193	635
\$50,000 under \$75,000	13,444,623,000	11,115,519	7,739,398	18,854,917	713
\$75,000 under \$100,000	9,240,257,000	8,638,586	2,501,822	11,140,408	829
\$100,000 under \$200,000	5,096,308,000	10,173,366	1,915,057	12,088,423	422
\$200,000 under \$500,000	122,814,000	2,646,577	474,908	3,121,485	39
\$500,000 under \$1,000,000	20,034,000	498,556	90,750	589,306	34
\$1,000,000 under \$1,500,000	0	125,990	24,441	150,431	0
\$1,500,000 under \$2,000,000	0	53,188	10,819	64,007	0
\$2,000,000 under \$5,000,000	0	80,316	18,408	98,724	0
\$5,000,000 under \$10,000,000	0	20,494	4,481	24,975	0
\$10,000,000 or more	0	12,849	3,107	15,956	0

Table 1C: Percent of Returns Claiming Credits as a Fraction of All Returns

	All credits (includes credits outside our purview)	Child Care Credit	Child Tax Credit (non- refundable)	CTC (refundable)	Education Credits	Earned Income Credit (non- refundable)	EITC (refundable)
All returns, total	33.3	4.7	18.6	11.3	5.6	2.1	14.6
No adjusted gross income	0.2	0.0	0.1	7.2	0.0	0.0	5.1
\$1 under \$5,000	1.1	0.0	0.0	0.5	0.0	0.0	21.6
\$5,000 under \$10,000	5.8	0.0	0.0	0.9	0.7	3.8	36.0
\$10,000 under \$15,000	15.5	0.3	1.9	20.2	4.2	5.5	31.9
\$15,000 under \$20,000	28.2	2.4	11.8	28.7	6.4	1.9	28.8
\$20,000 under \$25,000	43.3	4.3	20.8	29.9	7.5	4.0	29.5
\$25,000 under \$30,000	40.8	5.2	24.5	24.0	7.3	8.3	24.2
\$30,000 under \$40,000	41.3	5.4	25.9	17.3	8.7	3.8	10.3
\$40,000 under \$50,000	44.0	5.5	28.6	11.1	7.9	0.0	0.0
\$50,000 under \$75,000	44.7	7.2	32.3	4.7	8.3	0.0	0.0
\$75,000 under \$100,000	52.8	9.5	36.4	1.0	11.4	0.0	0.0
\$100,000 under \$200,000	47.6	10.5	25.8	0.2	1.2	0.0	0.0
\$200,000 under \$500,000	42.5	7.6	0.0	0.0	0.0	0.0	0.0
\$500,000 under \$1,000,000	58.2	6.1	0.0	0.0	0.0	0.0	0.0
\$1,000,000 under \$1,500,000	64.1	0.0	0.0	0.0	0.0	0.0	0.0
\$1,500,000 under \$2,000,000	67.3	0.0	0.0	0.0	0.0	0.0	0.0
\$2,000,000 under \$5,000,000	70.3	0.0	0.0	0.0	0.0	0.0	0.0
\$5,000,000 under \$10,000,000	75.3	0.0	0.0	0.0	0.0	0.0	0.0
\$10,000,000 or more	81.3	0.0	0.0	0.0	0.0	0.0	0.0

Table 2: Projected Credits and Returns in 2009 (using annual average population growth rates for returns and population and inflation annual growth rates for credits)

	Total credits (2009) Includes projections of AOTC and Making Work Pay	Married Returns(2009)	Single Returns(2009)	Total Returns(2009)
All returns, total	170,484,527,274	54,909,820	87,678,434	142,588,253
No adjusted gross income	897,437,682	822,069	1,934,598	2,756,667
\$1 under \$5,000	3,214,008,901	765,493	11,220,380	11,985,873
\$5,000 under \$10,000	13,296,818,543	1,217,109	10,926,788	12,143,897
\$10,000 under \$15,000	23,533,386,047	1,784,066	10,282,489	12,066,556
\$15,000 under \$20,000	23,165,619,567	2,258,344	9,010,774	11,269,117
\$20,000 under \$25,000	20,257,407,830	2,358,835	7,853,777	10,212,612
\$25,000 under \$30,000	14,496,513,363	2,281,356	6,733,531	9,014,888
\$30,000 under \$40,000	16,222,574,332	4,565,140	10,015,498	14,580,638
\$40,000 under \$50,000	11,108,741,340	4,480,961	6,530,064	11,011,026
\$50,000 under \$75,000	21,817,982,888	11,452,330	7,973,909	19,426,240
\$75,000 under \$100,000	14,894,593,028	8,900,344	2,577,630	11,477,974
\$100,000 under \$200,000	7,577,311,848	10,481,629	1,973,085	12,454,714
\$200,000 under \$500,000	2,137,050	2,726,771	489,298	3,216,069
\$500,000 under \$1,000,000	0	513,663	93,500	607,163
\$1,000,000 under \$1,500,000	0	129,808	25,182	154,989
\$1,500,000 under \$2,000,000	0	54,800	11,147	65,946
\$2,000,000 under \$5,000,000	0	82,750	18,966	101,715
\$5,000,000 under \$10,000,000	0	21,115	4,617	25,732
\$10,000,000 or more	0	13,238	3,201	16,439

Table 3: Lump Sum Credits with Cliffs, 2009

All projections of credits stop at or before the point at which they would exceed credits paid out under the current system (which equal \$170 billion approximately)

	\$7,000 for married, \$3,500 for single	\$5,000 for married, \$2,500 for single	\$4,000 for married, \$2,000 for single	\$3,000 for married, \$1,500 for single
No adjusted gross income	12,525,576,348	8,946,840,248	7,157,472,199	5,368,104,149
\$1 under \$5,000	44,629,780,235	31,878,414,453	25,502,731,563	19,127,048,672
\$5,000 under \$10,000	46,763,521,757	33,402,515,541	26,722,012,433	20,041,509,325
\$10,000 under \$15,000	48,477,176,077	34,626,554,341	27,701,243,473	20,775,932,605
\$15,000 under \$20,000		33,818,651,539	27,054,921,231	20,291,190,923
\$20,000 under \$25,000		31,428,618,522	25,142,894,817	18,857,171,113
\$25,000 under \$30,000			22,592,487,722	16,944,365,791
\$30,000 under \$40,000				28,718,667,771
\$40,000 under \$50,000				23,237,980,571
\$50,000 under \$75,000				
\$75,000 under \$100,000				
\$100,000 under \$200,000				
\$200,000 under \$500,000				
\$500,000 under \$1,000,000				
\$1,000,000 under \$1,500,000				
\$1,500,000 under \$2,000,000				
\$2,000,000 under \$5,000,000				
\$5,000,000 under \$10,000,000				
\$10,000,000 or more				
Total Credits	152,396,054,417	174,101,594,644	161,873,763,437	173,361,970,920

Table 4: Two-step Lump Sum Credits with Cliffs, 2009

	Max credit=\$5,000 for married filers (\$2,500 for single) Initial credit=20% of maximum credit and is available up until \$25,000 of income	Max credit=\$4,000 for married filers (\$2,000 for single) Initial credit=15% of maximum credit and is available up until \$25,000 of income
No adjusted gross income	1,789,368,050	1,073,620,830
\$1 under \$5,000	6,375,682,891	3,825,409,734
\$5,000 under \$10,000	6,680,503,108	4,008,301,865
\$10,000 under \$15,000	6,925,310,868	4,155,186,521
\$15,000 under \$20,000	6,763,730,308	4,058,238,185
\$20,000 under \$25,000	6,285,723,704	3,771,434,223
\$25,000 under \$30,000	28,240,609,652	22,592,487,722
\$30,000 under \$40,000	47,864,446,285	38,291,557,028
\$40,000 under \$50,000	38,729,967,618	30,983,974,095
\$50,000 under \$75,000		61,757,140,362
\$75,000 under \$100,000		
\$100,000 under \$200,000		
\$200,000 under \$500,000		
\$500,000 under \$1,000,000		
\$1,000,000 under \$1,500,000		
\$1,500,000 under \$2,000,000		
\$2,000,000 under \$5,000,000		
\$5,000,000 under \$10,000,000		
\$10,000,000 or more		
Total Credits	149,655,342,484	174,517,350,564

Table 5: Credits with Phase-in, Plateau and Phase-Out Regions based as percentages of Income, 2009

	AGI (2006)	Similar to EITC: Phase-In rate=40% Phase-out Rate=20%, Max Credit=\$6,000 at \$15,000 income	Phase-In rate=20% Phase-out Rate=cliff Max Credit=\$6,000 at \$30,000 income	Phase-in rate=60% Phase-out rate=45% Max Credit=\$6,000 at \$10,000 (values halved for single filers)
No adjusted gross income				
\$1 under \$5,000	31,004,475,000	12,401,790,000	6,200,895,000	9,282,262,500
\$5,000 under \$10,000	87,992,646,000	35,197,058,400	17,598,529,200	29,178,137,250
\$10,000 under \$15,000	146,357,710,000	58,543,084,000	29,271,542,000	40,329,831,000
\$15,000 under \$20,000	191,038,094,000	38,207,618,800	38,207,618,800	39,388,860,000
\$20,000 under \$25,000	222,862,623,000	44,572,524,600	44,572,524,600	29,741,699,813
\$25,000 under \$30,000	240,252,128,000		48,050,425,600	14,390,280,188
\$30,000 under \$40,000				2,322,838,000
\$40,000 under \$50,000				
\$50,000 under \$75,000				
\$75,000 under \$100,000				
\$100,000 under \$200,000				
\$200,000 under \$500,000				
\$500,000 under \$1,000,000				
\$1,000,000 under \$1,500,000				
\$1,500,000 under \$2,000,000				
\$2,000,000 under \$5,000,000				
\$5,000,000 under \$10,000,000				
\$10,000,000 or more				
Total Credits		188,922,075,800	183,901,535,200	164,633,904,750

Table 6: 50% wage credit up until \$15,000 of income and 10% tax rate between \$15,000-\$40,000

	Current Taxable Income (2006)	Current taxes paid after credits(2006)	10% tax rate on \$15,000-\$40,000 (and no credits)	Difference in revenue Old system-10% tax system	Total Change
No adjusted gross income					
\$1 under \$5,000					15,502,237,500
\$5,000 under \$10,000					43,996,323,000
\$10,000 under \$15,000					73,178,855,000
\$15,000 under \$20,000	54,399,481,000	4,759,278,000	5,439,948,100	-680,670,100	-680,670,100
\$20,000 under \$25,000	84,959,346,000	7,501,691,000	8,495,934,600	-994,243,600	-994,243,600
\$25,000 under \$30,000	111,592,271,000	10,396,566,000	11,159,227,100	-762,661,100	-762,661,100
\$30,000 under \$40,000	265,074,215,000	27,293,090,000	26,507,421,500	785,668,500	785,668,500
\$40,000 under \$50,000					
\$50,000 under \$75,000					
\$75,000 under \$100,000					
\$100,000 under \$200,000					
\$200,000 under \$500,000					
\$500,000 under \$1,000,000					
\$1,000,000 under \$1,500,000					
\$1,500,000 under \$2,000,000					
\$2,000,000 under \$5,000,000					
\$5,000,000 under \$10,000,000					
\$10,000,000 or more					
					131,025,509,200

Total Cost of Policy					
----------------------	--	--	--	--	--

Table 7: Different phase-in credits with a 10 percent per \$5,000 phase-out rate

	Adjusted Gross Income (2006)	50% wage credit for incomes up until \$5,000 and then phased out.	40% wage credit for incomes up until \$10,000 and then phased out.	30% wage credit for incomes up until \$15,000 and then phased out.
No adjusted gross income				
\$1 under \$5,000	31,004,475,000	15,502,237,500	12,401,790,000	9,301,342,500
\$5,000 under \$10,000	87,992,646,000	39,596,690,700	35,197,058,400	26,397,793,800
\$10,000 under \$15,000	146,357,710,000	51,225,198,500	51,225,198,500	43,907,313,000
\$15,000 under \$20,000	191,038,094,000	47,759,523,500	47,759,523,500	47,759,523,500
\$20,000 under \$25,000	222,862,623,000	33,429,393,450	33,429,393,450	33,429,393,450
\$25,000 under \$30,000	240,252,128,000	12,012,606,400	12,012,606,400	12,012,606,400
\$30,000 under \$40,000				
\$40,000 under \$50,000				
\$50,000 under \$75,000				
\$75,000 under \$100,000				
\$100,000 under \$200,000				
\$200,000 under \$500,000				
\$500,000 under \$1,000,000				
\$1,000,000 under \$1,500,000				
\$1,500,000 under \$2,000,000				
\$2,000,000 under \$5,000,000				
\$5,000,000 under \$10,000,000				
\$10,000,000 or more				
Total Cost of Policy		199,525,650,050	192,025,570,250	172,807,972,650

--	--	--	--	--

Table 8: Credit Policies Restricted to Families with Children

	Returns claiming exemptions for children at home (2006)	Adjusted Gross Income (2006)	\$5,000 Lump Sum Credit	\$7,500 Lump Sum Credit	40% wage credit until \$30,000 and then phased out
All returns, total	46,497,241	3,496,693,785,000			
Under \$5,000	1,749,532	-25,293,542,000	8,747,660,000	13,121,490,000	1,749,532,000
\$5,000 under \$10,000	2,568,679	19,917,316,000	12,843,395,000	19,265,092,500	7,706,037,000
\$10,000 under \$15,000	3,487,454	43,513,822,000	17,437,270,000	26,155,905,000	17,437,270,000
\$15,000 under \$20,000	3,399,756	59,470,870,000	16,998,780,000	25,498,170,000	23,798,292,000
\$20,000 under \$25,000	3,334,313	75,007,317,000	16,671,565,000	25,007,347,500	30,008,817,000
\$25,000 under \$30,000	2,899,124	79,464,275,000	14,495,620,000	21,743,430,000	31,890,364,000
\$30,000 under \$35,000	2,484,007	80,604,135,000	12,420,035,000	18,630,052,500	27,324,077,000
\$35,000 under \$40,000	2,106,233	78,851,768,000	10,531,165,000	15,796,747,500	18,956,097,000
\$40,000 under \$45,000	1,958,865	83,213,519,000	9,794,325,000	14,691,487,500	13,712,055,000
\$45,000 under \$50,000	1,773,088	84,225,145,000	8,865,440,000	13,298,160,000	8,865,440,000
\$50,000 under \$55,000	1,732,685	90,942,549,000	8,663,425,000		5,198,055,000
\$55,000 under \$60,000	1,556,072	89,386,370,000	7,780,360,000		1,556,072,000
\$60,000 under \$75,000	4,153,365	279,744,082,000	20,766,825,000		
\$75,000 under \$100,000	5,176,877	448,345,210,000	25,884,385,000		
\$100,000 under \$200,000	6,048,805	804,631,504,000			
\$200,000 under \$500,000	1,603,867	458,203,975,000			
\$500,000 under \$1,000,000	299,905	202,341,301,000			
\$1,000,000 under \$1,500,000	71,949	86,813,850,000			
\$10,000,000 or more	7,141	195,790,519,000			
Total Cost of Policy			191,900,250,000	193,207,882,500	188,202,108,000

Table 9: Benefits Restricted To Wage and Salary Income Earners: 60% Phase-In Rate, 22%

Phase-Out

	Returns with Salary and Wage Income	Estimate of Married Returns with Wage Income	Estimate of Returns with children and wage income	Max Credit=\$8,000 at \$13,333 (values halved for single filers) Phase-out begins at \$20,000	Restricted to filers with children: Max Credit=\$12,000 at \$20,000 Phase-out begins at \$30,000
All returns, total	116,379,376	44,816,949	32,096,901		
No adjusted gross income	714,478	213,065	467,187		
\$1 under \$5,000	8,852,728	565,391	1,331,354	7,063,589,066	1,997,030,644
\$5,000 under \$10,000	9,293,308	931,412	2,025,285	23,005,619,475	9,113,783,723
\$10,000 under \$15,000	9,080,238	1,342,533	2,703,874	38,220,300,003	20,279,058,385
\$15,000 under \$20,000	8,977,609	1,799,123	2,790,504	43,106,927,174	29,300,293,157
\$20,000 under \$25,000	8,573,595	1,980,267	2,884,009	39,313,134,673	34,608,107,190
\$25,000 under \$30,000	7,634,923	1,932,135	2,529,736	30,375,409,296	30,356,836,271
\$30,000 under \$40,000	12,585,820	3,940,570	2,209,133	38,837,017,334	24,079,552,451
\$40,000 under \$50,000	9,481,258	3,858,419	1,737,828	16,674,596,331	15,119,104,489
\$50,000 under \$75,000	16,801,304	9,904,855	1,543,967	1,019,985,931	7,488,239,380
\$75,000 under \$100,000	10,021,003	7,770,568	4,656,697		1,866,911,108
\$100,000 under \$200,000	10,888,319	9,163,383	5,448,297		
\$200,000 under \$500,000	2,701,345	2,290,358	1,387,993		
\$500,000 under \$1,000,000	487,691	412,589	248,192		
\$1,000,000 under \$1,500,000	121,544	101,796	58,133		
\$1,500,000 under \$2,000,000	51,234	42,574	23,760		
\$2,000,000 under \$5,000,000	79,672	64,816	35,899		
\$5,000,000 under \$10,000,000	20,365	16,711	9,260		
\$10,000,000 or	12,944	10,424	5,793		

more					
Total Credits				237,616,579,285	174,208,916,899

Figure 1: Marginal Tax Rates: Married and Single Taxpayers, with 2 children

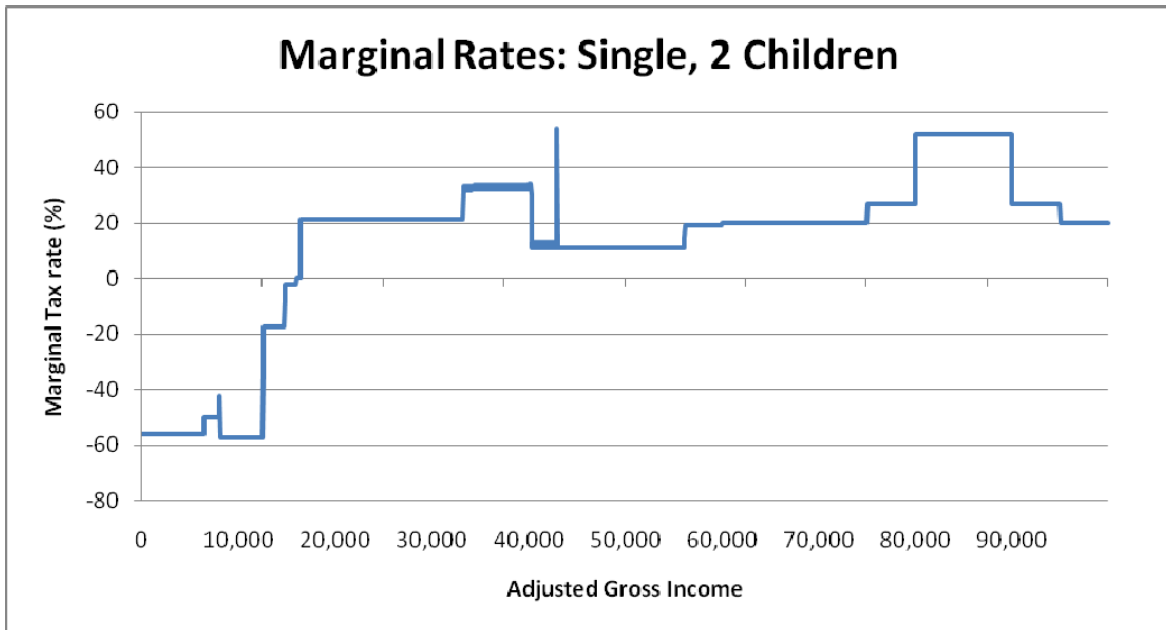
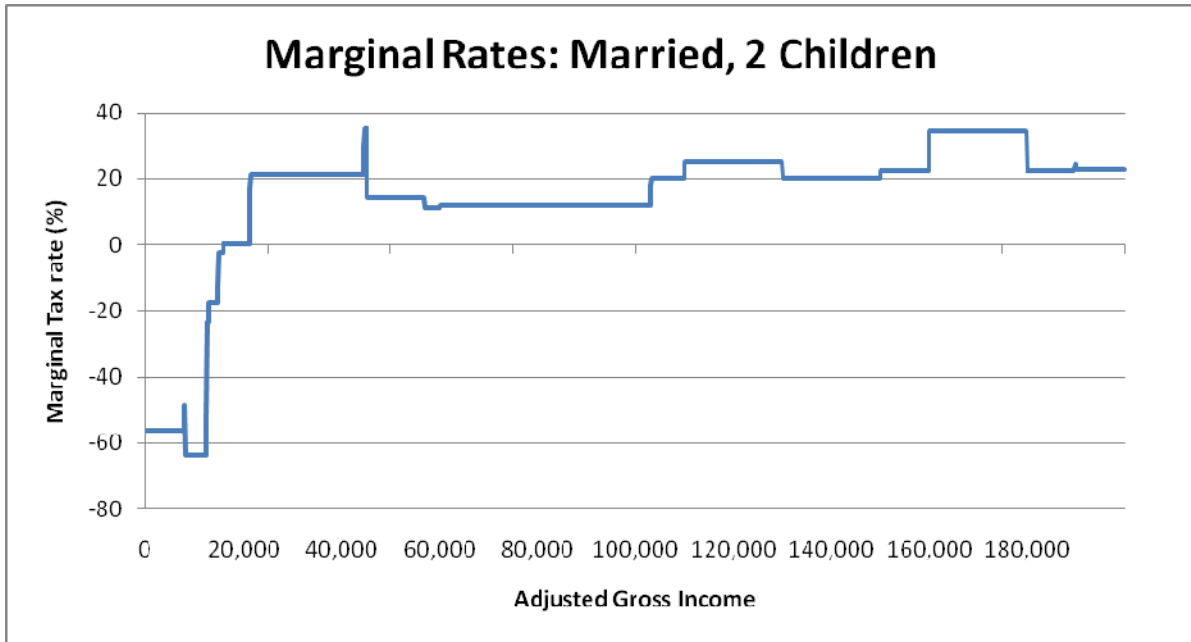


Figure 2: Total Credits, By Income

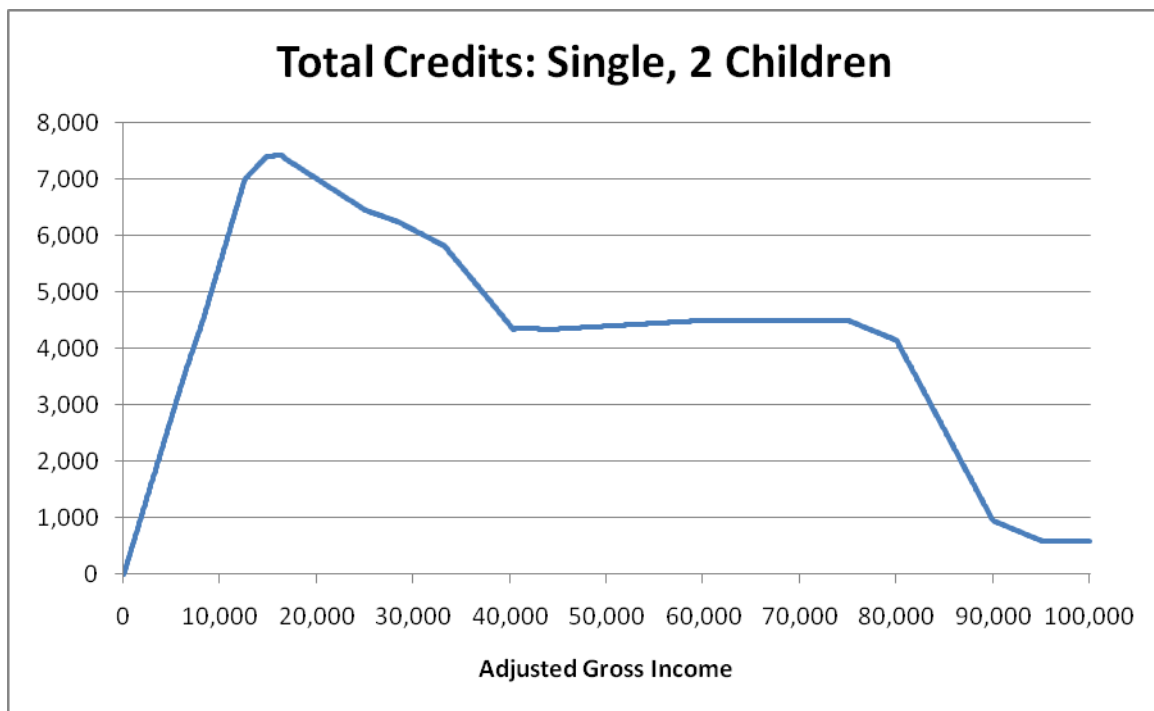
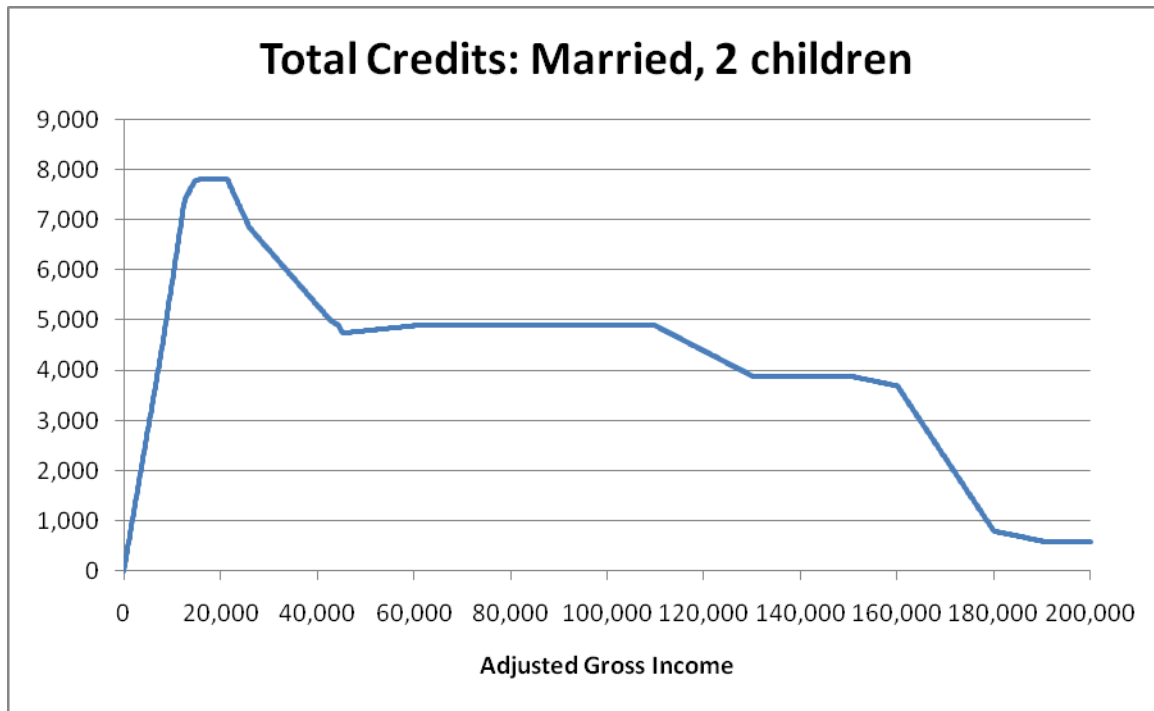
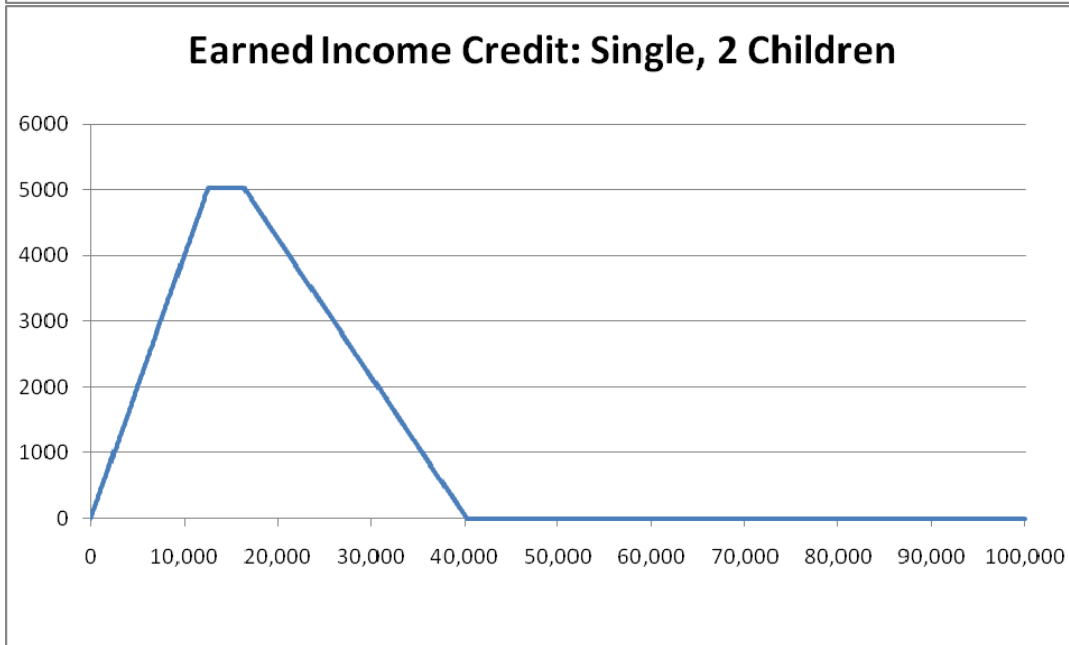
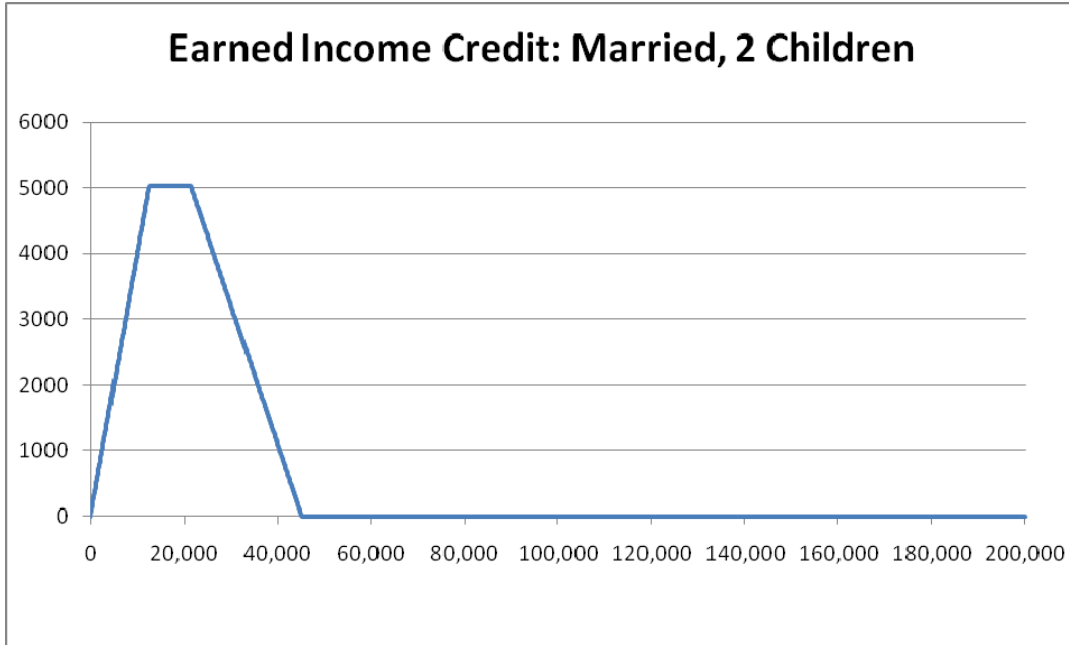
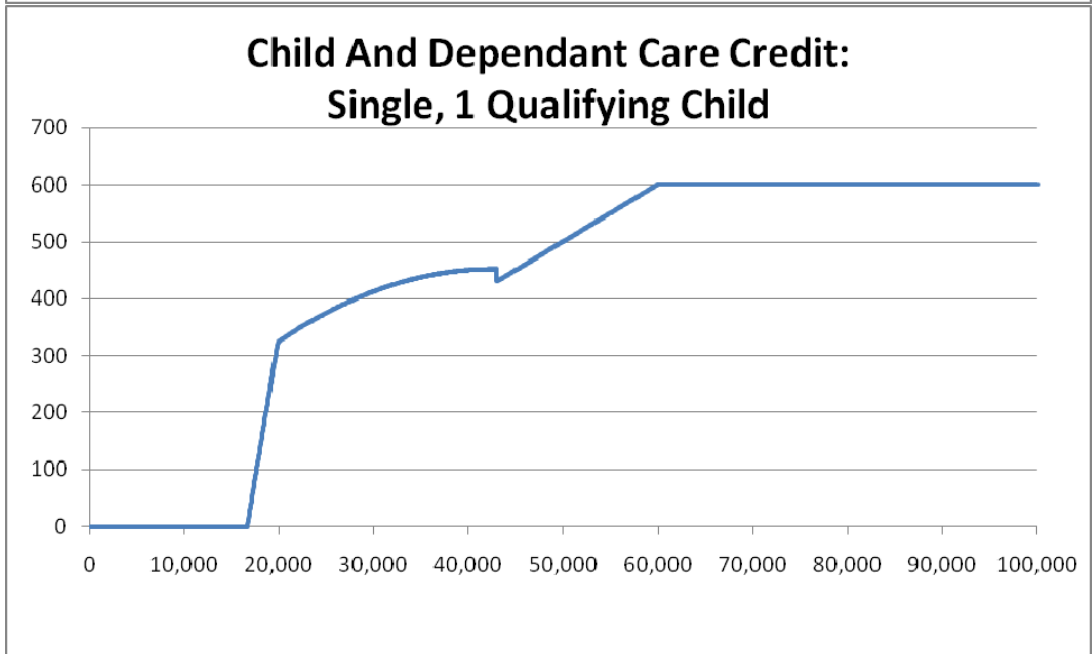
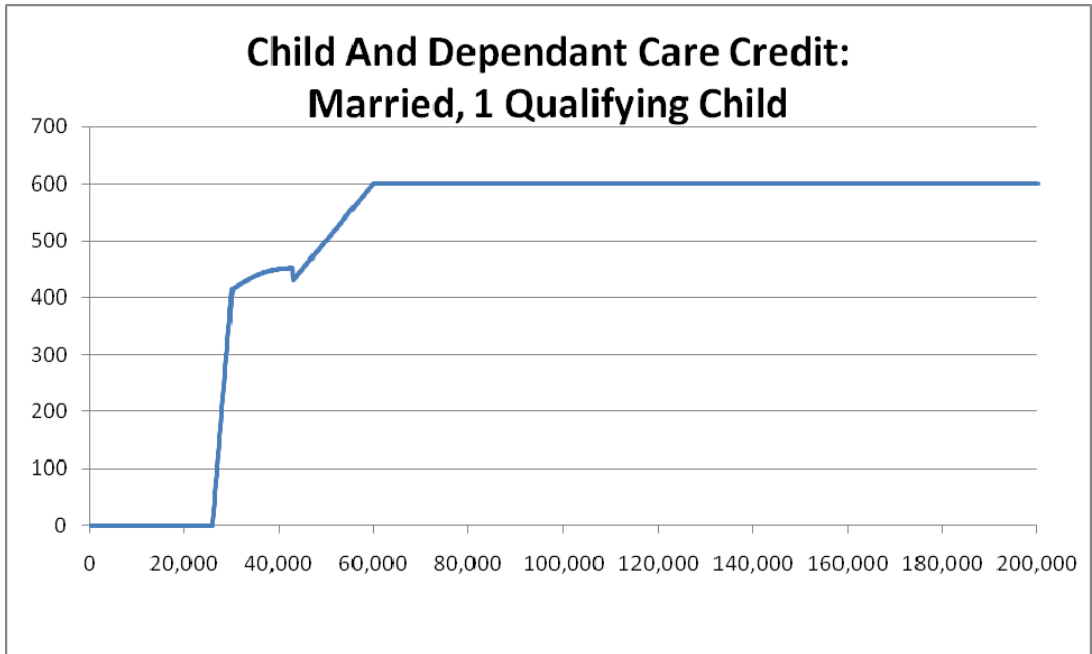


Figure 3: Total Credits by Type of Credit

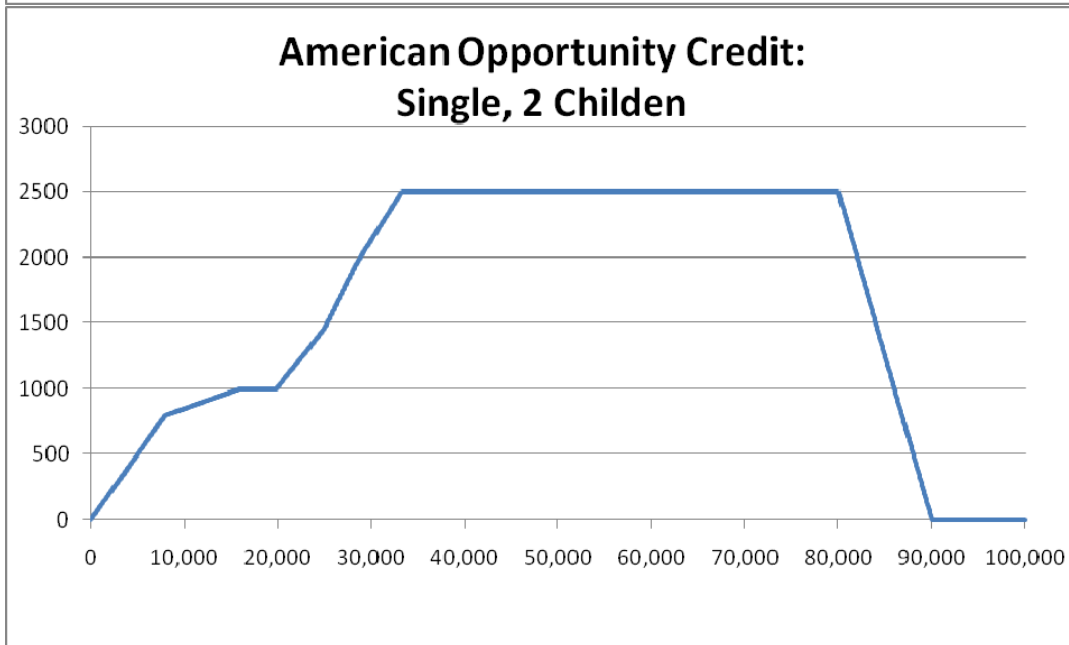
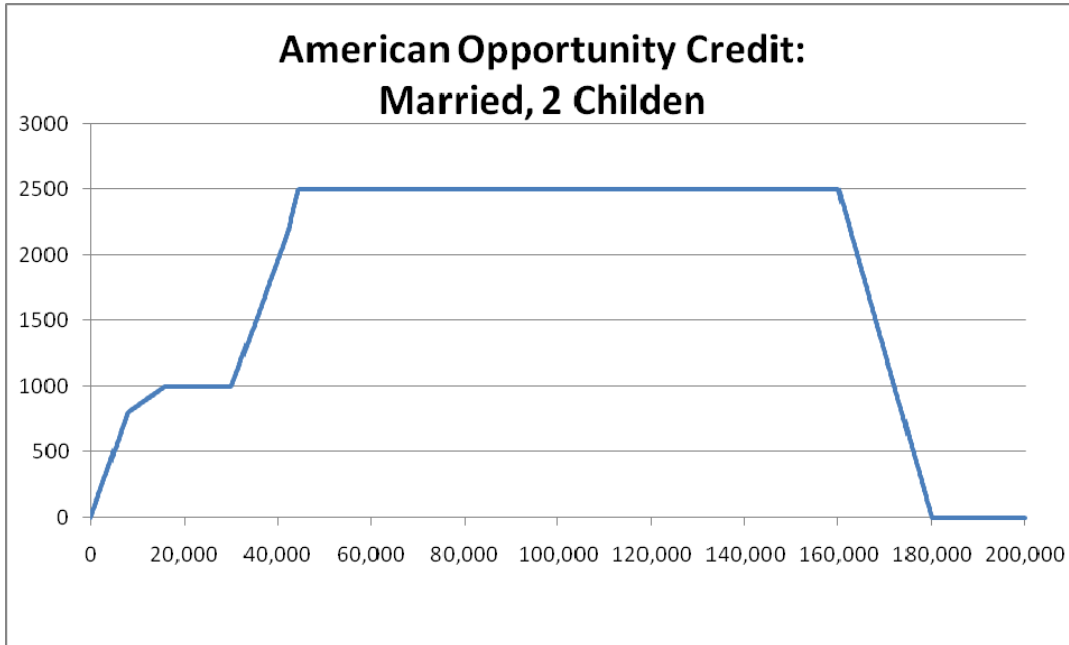
A. Earned Income Credit



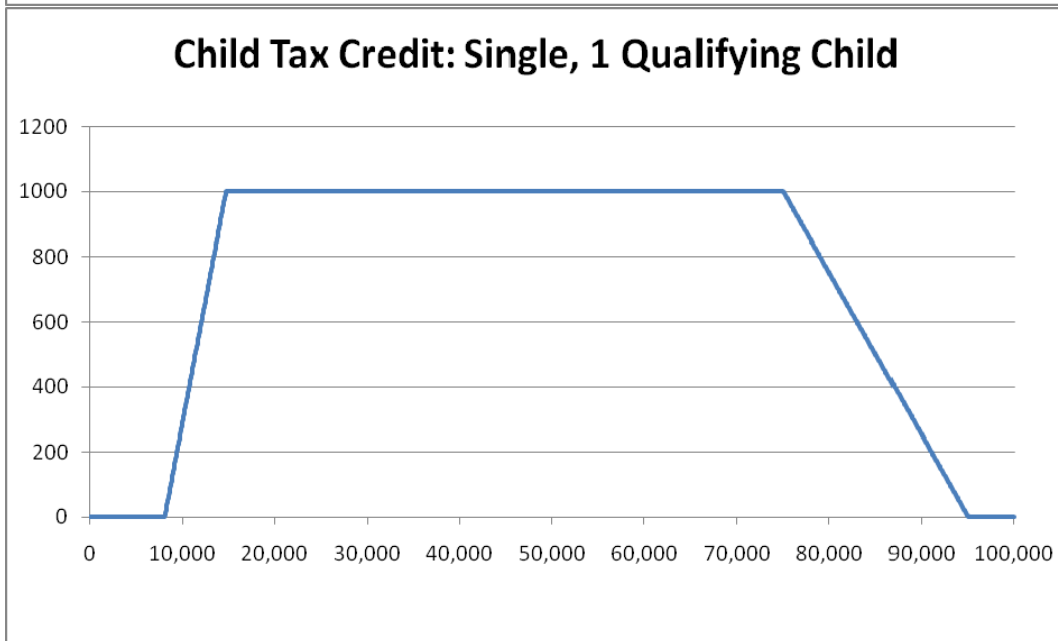
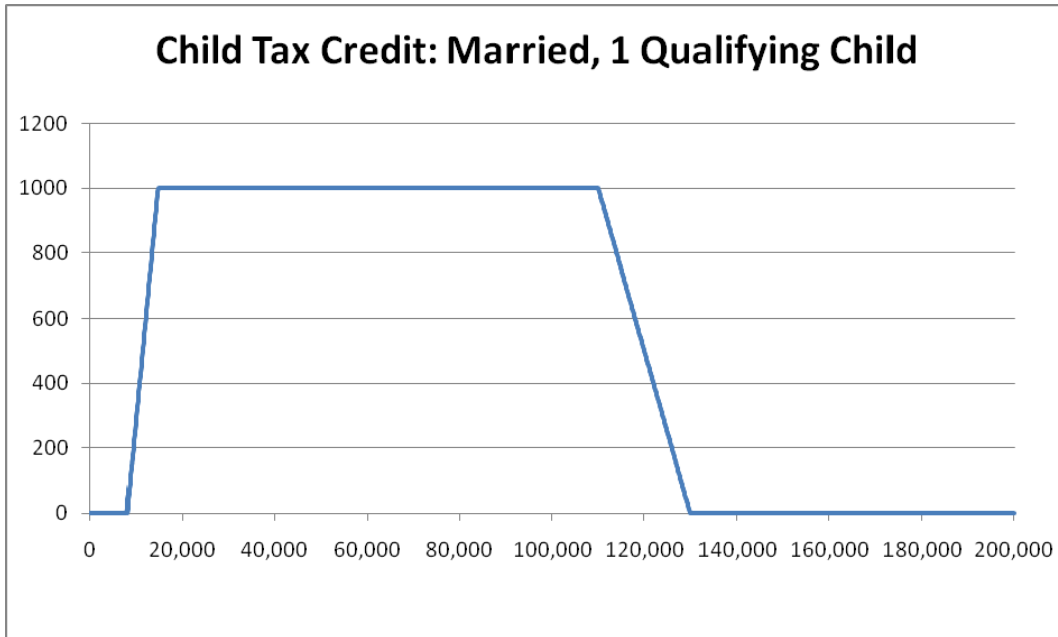
B. Child and Dependent Care Credit



C. American Opportunity Tax Credit



D. Child Tax Credit



E. Making Work Pay Credit

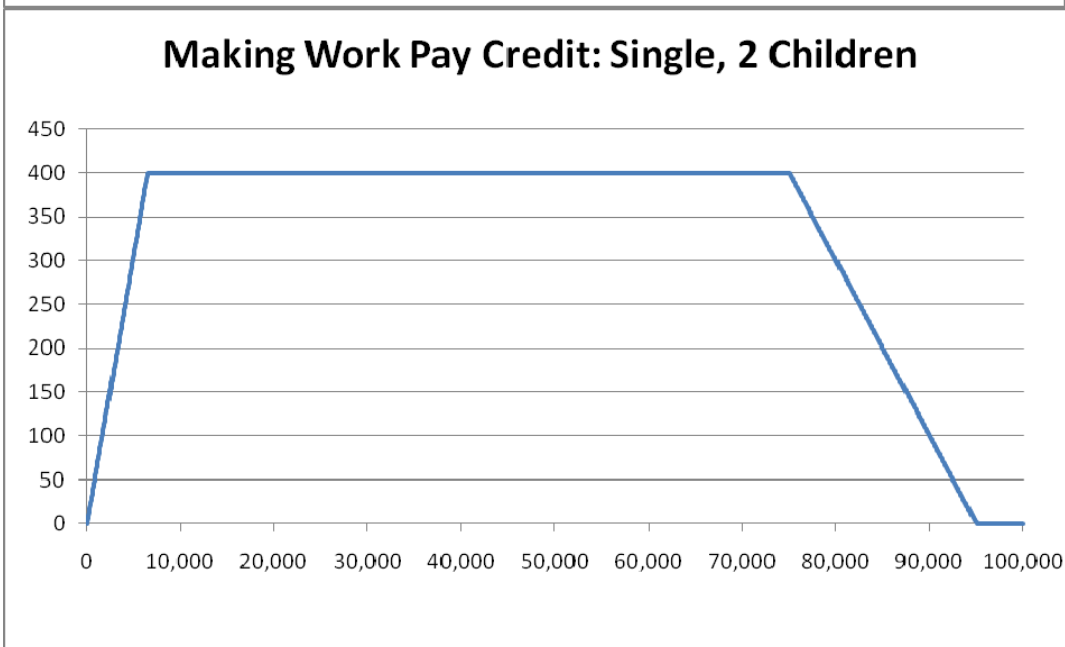
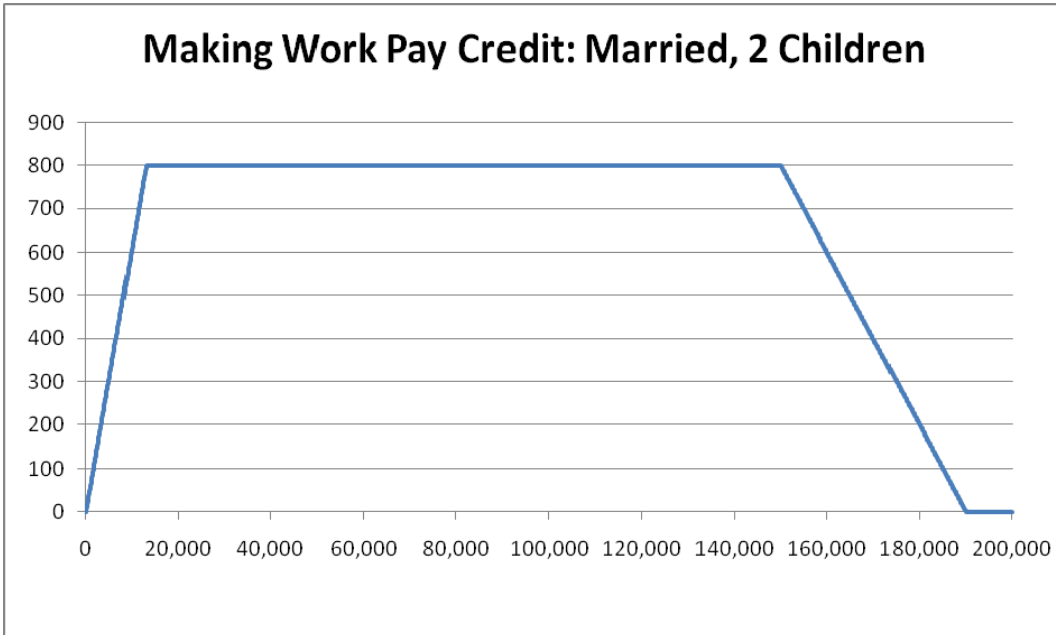
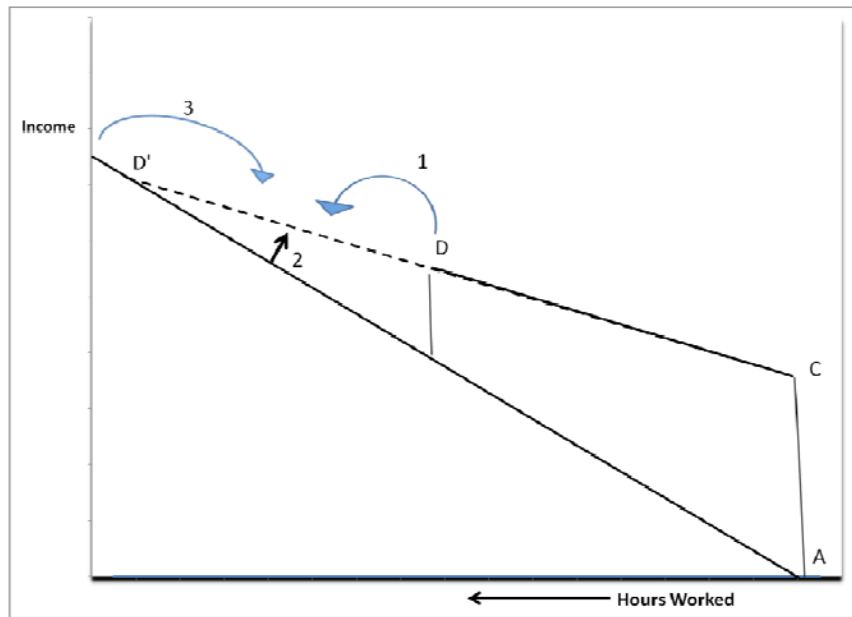


Figure 4

A. The Effect on Labor Supply of Moving from a Notch to a Phase-Out (Moffitt 2002)



B. The Effects of Credit Cliffs and Phase-Outs (Sheiner 1994)

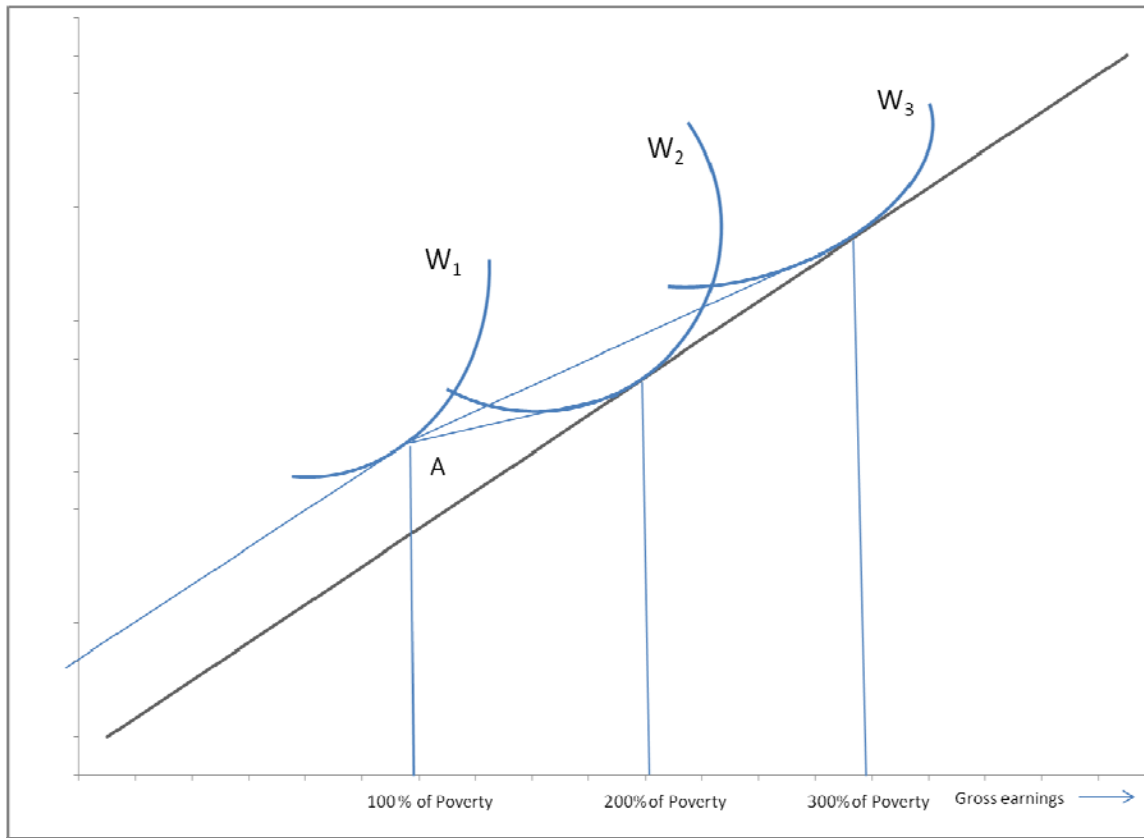
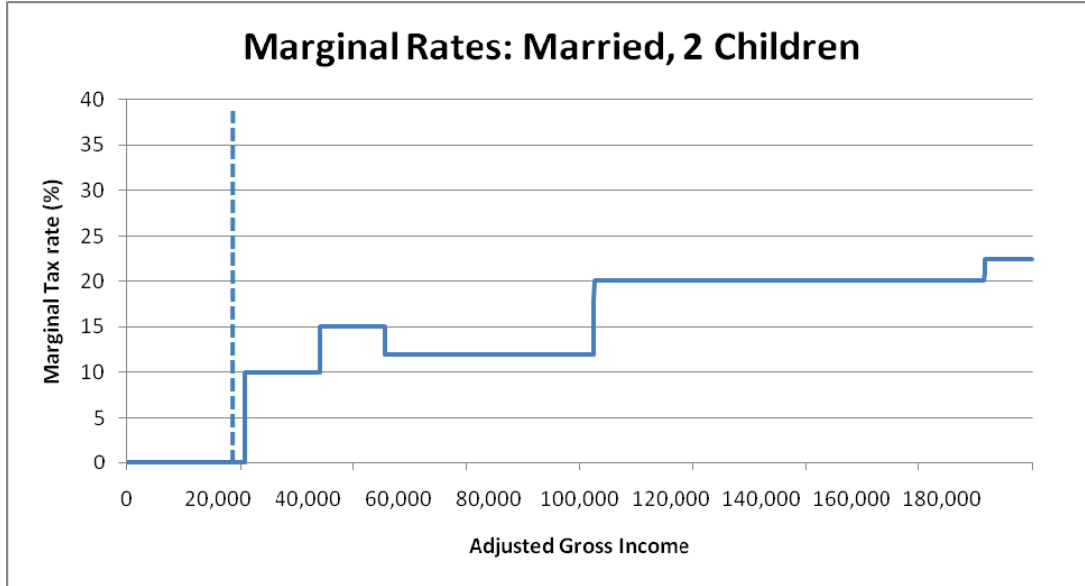
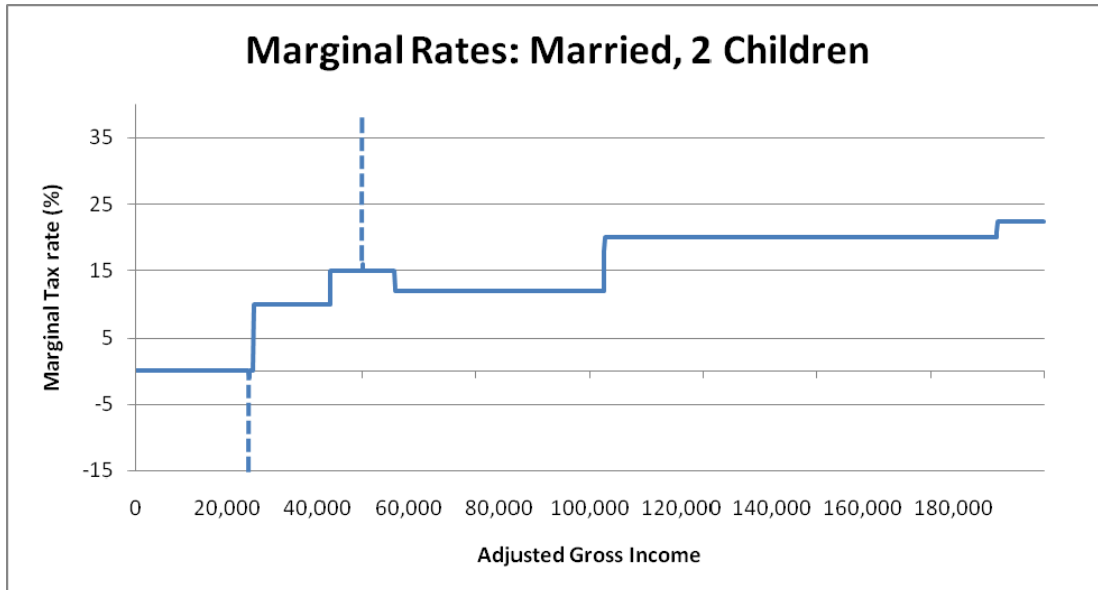


Figure 5: Marginal Tax Rates Under Alternative Credit Scenarios

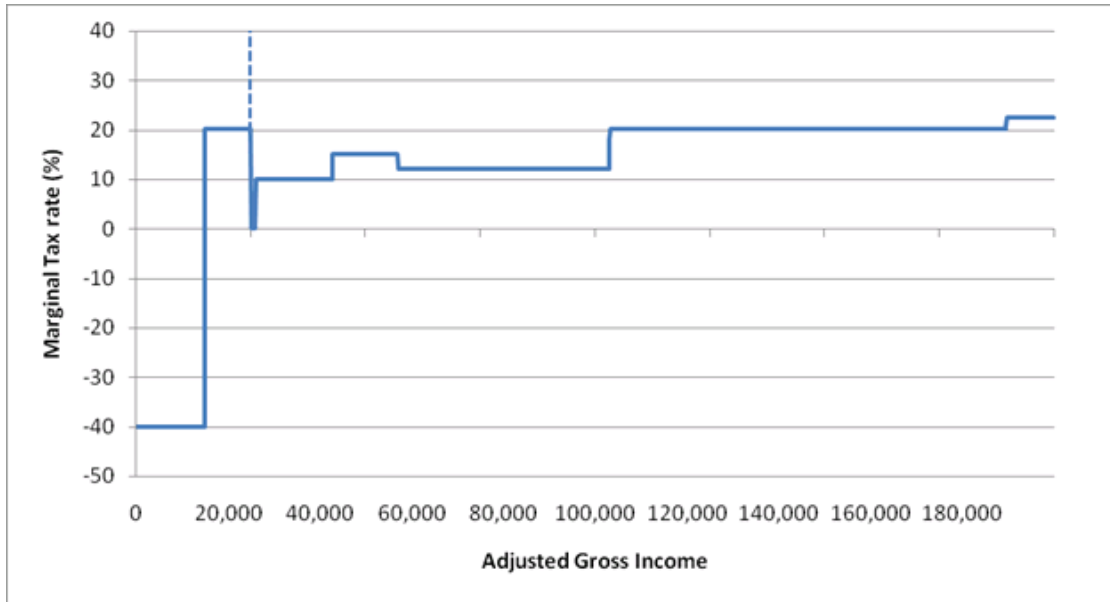
A. Single Lump Sum Credit



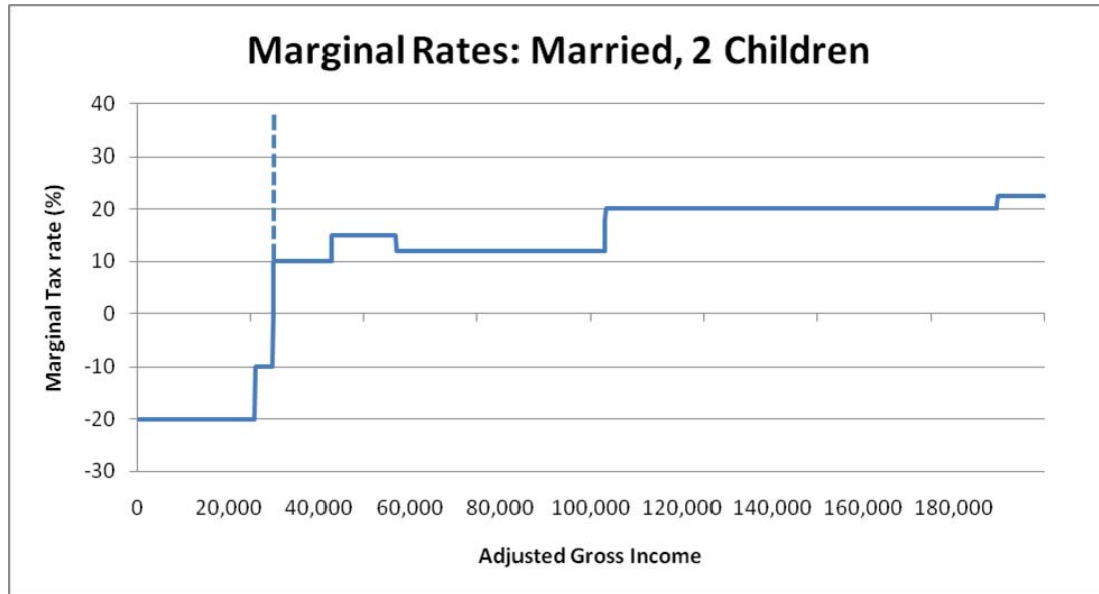
B. Two-Tiered Lump Sum Credit



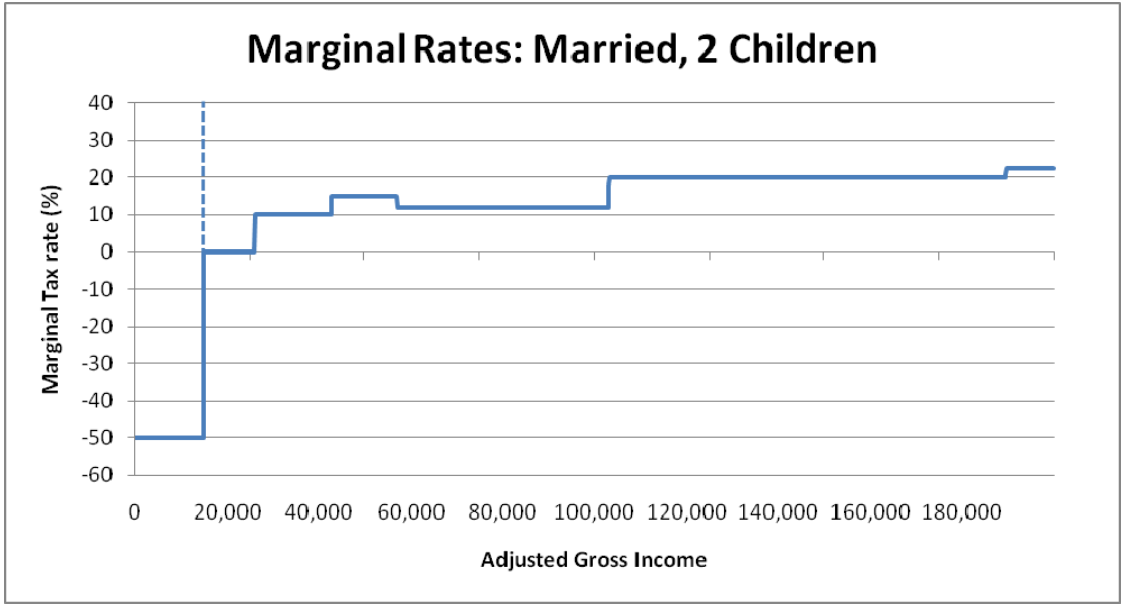
C. 40% Phase-in until \$15,000; 20% Phase-out until \$25,000



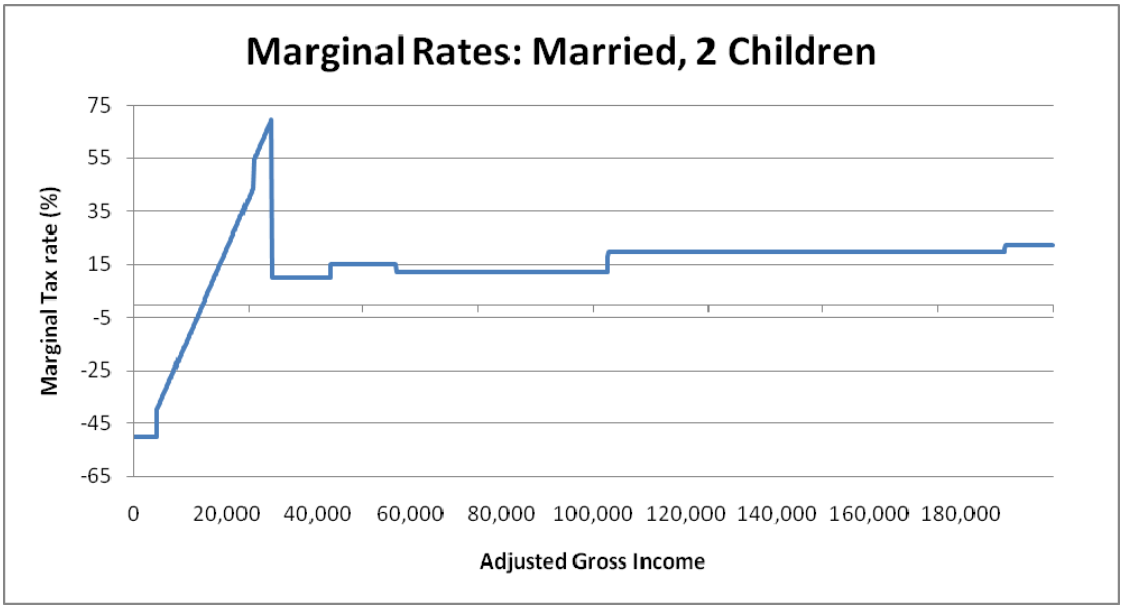
D. 20% Phase-in until \$30,000



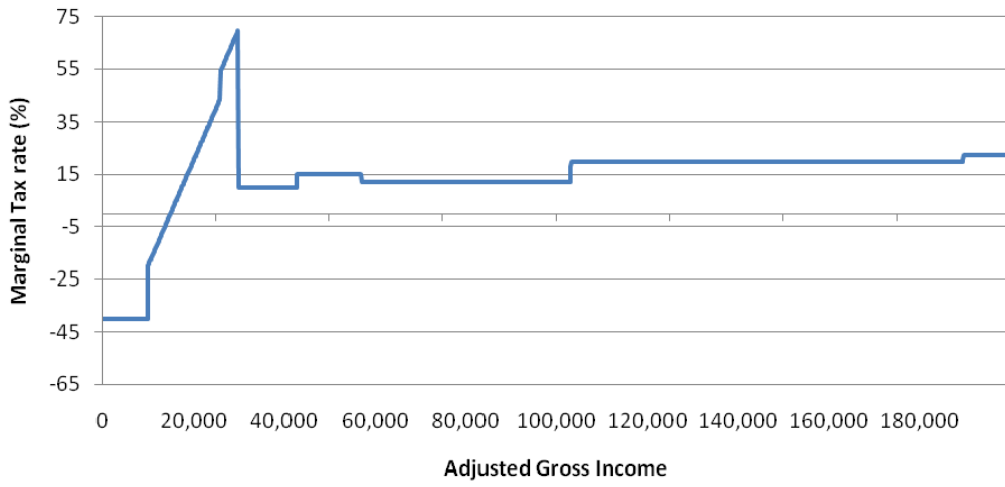
E. 50% Wage Credit until \$15,000



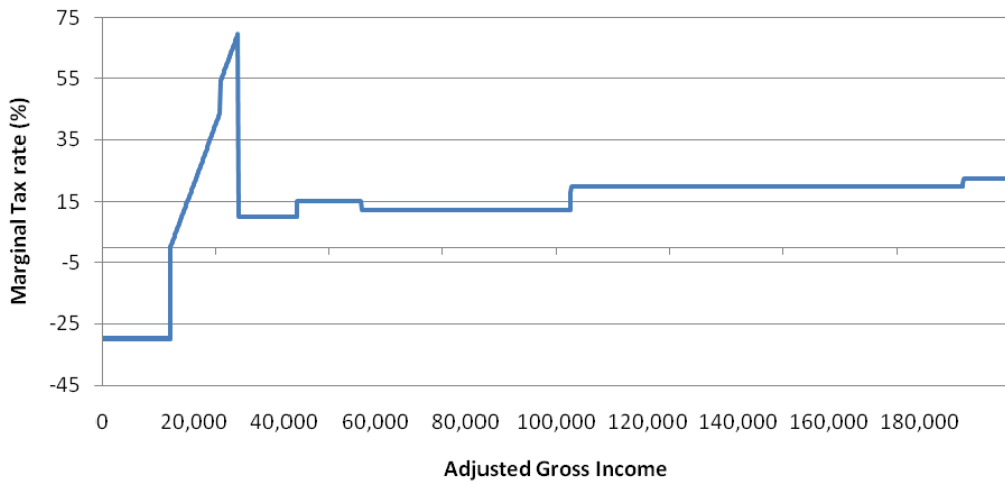
F. Wage Credit with Phase-Out



Marginal Rates: Married, 2 Children



Marginal Rates: Married, 2 Children



G. 22 Percent Phase-out Rate of Credits

