Tax Policy Toward Low-Income Families[*]

Hilary Hoynes and Jesse Rothstein
UC Berkeley and NBER

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ABSTRACT

In this paper, we review the two most prominent provisions of the federal income tax code that target low-income tax filers, the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC). We frame the paper around what we see as the program's goals: distributional, promoting work, and limiting administrative and compliance costs. We review what is known about the program impacts and distributional consequences under current law. We supplement this literature review with simulations from the Tax Policy Center, allowing for static distributional analysis. We conclude that the EITC is quite successful in meeting its three goals. In contrast, much of the benefits of the CTC go to higher income households. In addition to analyzing current law, we consider the possibilities for reform. In particular we analyze changes to the EITC expanding access for childless tax filers and limiting self-employment income for calculating the EITC.

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I.   Introduction

The primary purpose of the tax code is to raise revenue. For this purpose, low-income families are not very relevant. The bottom 40% of tax filing units – those with incomes below $39,370 – earned just 14% of pre-tax income in 2013 (Tax Policy Center, 2015). Just as Willie Sutton robbed banks because that's where the money was, the tax code focuses on high-income families because that is where there is revenue to be had.

But the tax code is used to pursue purposes and objectives other than just revenue collection. Today, the two most prominent provisions of the federal income tax code that target low-income tax filers, the Earned Income Tax Credit (EITC) and the less prominent but similar Child Tax Credit (CTC), are explicitly redistributive, designed to transfer money to families rather than tax it away from them.

The EITC is a tax credit available to lower-income families with positive earned income. Importantly, it is refundable: Many recipients have too low incomes to owe substantial tax, so with the EITC their liabilities are negative and they thus receive refund checks from the Internal Revenue Service. In 2013, 87 percent of the total tax expenditure of the EITC took the form of tax refunds (Internal Review Service 2015).

Introduced in 1975, the EITC has grown to become a central element of the U.S. social safety net (Bitler, Hoynes and Kuka 2014). Almost 20 percent of all tax filers and 44 percent of filers with children receive the EITC. The maximum credit in 2015 is $6,242 for families with three children, $5,548 for those with two children, $3,359 for those with one child, and $503 for those without children – this can be as much as 45% of a family's pre-tax income. The credit has been indexed for inflation since the Tax Reform Act of 1986.

In 2013, the EITC reached 28.8 million tax filers at a total cost of $68 billion, with an average credit amount of $3,063 for families with children (Internal Review Service 2015). The program dwarfs traditional cash welfare (Temporary Assistance for Needy Families, or TANF), which reached 1.6 million families in 2013, an almost 70 percent decline since 1994.

The CTC is more recent, introduced in 1997. It is structurally similar to the EITC, but more universal in design and less targeted on lower-income families. In 2015, it is available to families with incomes as high as $150,000 for married couples ($115,000 for singles), with the maximum credit available at incomes as high as $110,000 for married couples ($75,000 for

singles). The CTC is not inflation adjusted, so these parameters are generally unchanged in nominal terms from one year to the next; the maximum credit has been unchanged at $1,000 per child (in nominal dollars) since 2003. Although this is much smaller than the maximum EITC, the CTC's broader reach means that total expenditures are comparable ($56 billion for the CTC vs. $68 billion for the EITC in 2013).

The CTC, unlike the EITC, is not fully refundable. This has limited its value to low-income families. But in 2009, the American Recovery and Reinvestment Act greatly expanded the refundability of the CTC, making the schedule similar to the EITC's.

In this paper, we review the roles of the EITC and CTC, what is known about their impacts and distributional consequences, and the possibilities for reform. We begin in Section II by discussing the goals of the programs, and we use these goals to organize our discussion of possible reforms. Section III reviews their structure and history. Section IV discusses the economics of in-work tax credits like the EITC and CTC. Section V evaluates what do we know about how the programs affect these objectives. In Section VI and VII we discuss analyze possible reforms to the EITC. In Section VIII we conclude.

II.   Framing: What are the objectives of this tax?

The EITC and CTC are best seen not as taxes but as transfer programs that happen to be administered through the tax code. As we see it, they have three primary goals. First, all means-tested transfer programs are designed in part to achieve distributional goals. In the case of the EITC, these are to transfer funds to low- and moderate-income families, and particularly to those with children. The CTC's distributional objectives are less clear, given its high phase-out point – the target is clearly the broad middle class rather than just the lowest-income families. It may be better thought of as a "universal child benefit."

The two other main goals of the EITC are what distinguish it from other transfer programs. It aims to encourage work rather than living "on the dole," and to limit the high administrative costs associated with other transfer programs that require very labor-intensive eligibility screening.

The EITC is quite successful at all three goals. Almost three-quarters its benefits go to families with annual incomes below $25,000 (roughly the 24th percentile of the income

distribution) (Internal Review Service 2015, DeNavas et al 2015), and EITC payments lift millions of families out of poverty each year. The evidence indicates that the program has substantially raised the labor force participation rates of single mothers, by perhaps 5-8 percentage points; while there is also evidence of negative effects on married women's participation and on the intensive margin (the number of hours worked per year, among those who would work some in any case), these effects are much smaller than those on the extensive margin. Finally, the tax system has many administrative advantages over a welfare bureaucracy, and has proved to be an efficient means of distributing the EITC (though as we discuss below there are nontrivial rates of noncompliance with the EITC, particularly on dimensions that are not well tracked by existing third party reporting).[2]

The CTC is much less studied. It performs much less well at transferring income to the neediest families, and is likely less effective at encouraging work as well. But like the EITC it is quite inexpensive to administer, and its redistribution to the middle and upper middle parts of the income distribution is apparently also valued by policymakers.

While these provisions generally do a good job of meeting their objectives, they are far from perfect. We discuss below some options for reforming the programs that might be considered.

III.   Current policies and recent reforms

To be eligible for the EITC, a taxpayer – or tax filing unit – must have earned income during the tax year.[3] The value of the credit is determined by a benefit schedule with three regions, known as the "phase-in," "flat" (or "plateau"), and "phase-out." In the phase-in region, the credit increases by a share of each additional dollar earned. Once the credit reaches its maximum (capped) value, the taxpayer is in the second, "flat" region. In the final region, the

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[2] An additional potential disadvantage of the tax-based system is the ability of for profit tax preparation firms to collect on high-interest, short-term loans against a tax filer's eventual EITC payment, though recent reforms have reduced the prevalence of this.

[3] Earned income is the sum of wages, tips, salary, union strike benefits, some disability payments, and net self-employment earnings (IRS 2013).

credit declines with each additional dollar of earnings (or, adjusted gross income, or AGI, if that is higher) until it is zero.

The exact parameters of the schedule vary by filing status and by the number of qualifying children, but the basic shape is the same. Figure 1 displays the schedule in 2015 (as a function of earned income) for single taxpayers with no, one, two, and three or more children. The Figure makes clear that the credit for families with children is much different than that for childless families, and we start with the former. The phase-in or subsidy rate is substantial at 34 (or 40 or 45) percent for those with one (or two or three) children, while the phase-out rate is much lower, at 15.98 (21.06) percent for those with one (two or more) children. Maximum benefits range from $3,359 for families with one child to $6,242 for those with three or more. Single taxpayers with incomes above $39,131 (with one child), $44,454 (with two children), or $47,747 (with three or more children) are ineligible for the credit.[4] The credit for families without children is much less generous, with phase-in rate of 7.65, a maximum credit of $503 and a maximum allowable income of $14,820.

Importantly, the EITC is refundable: if the credit exceeds a taxpayer's tax liability, he or she receives the difference as a refund. Typically, families with earnings below $20,000-$25,000 will owe very little income tax, so the bulk of the EITC will arrive as a refund even when withholding is zero.[5]

As elsewhere in the tax code, there are many complexities and special cases, not all illustrated in Figure 1. Married couples, for example, have slightly different schedules – with longer "plateau" segments and higher phase-out points – than do single filers with the same number of children (as illustrated by the dotted lines in the figure). Defining qualifying children is also difficult, and qualification for the EITC differs from that for the dependent exemption.[6] Finally, the schedule is slightly more complex for families with unearned income. When

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[4] Unmarried taxpayers with dependents are termed head of household filers. In this paper, we typically refer to this group as "single filers with children" or "single parents with children."

[5] For example, a single parent with two children enters the first bracket (with a 10 percent marginal tax rate) at gross earnings of $22,000.

[6] A qualifying child for the EITC is younger than 19 (or younger than 24 and a full time student), lives with the taxpayer for more than half the year, has a valid social security number, and is not claimed as a dependent by another taxpayer (IRS 2013). In some circumstances, a grandchild can qualify.

earnings place the family in the plateau or phase-out ranges and adjusted gross income (including unearned income) exceeds earned income, the credit is based on the latter.

The current EITC schedule reflects substantial growth over time. Figure 2 shows how the maximum credit has evolved for families of different sizes. After the program's introduction in 1975, inflation gradually eroded the real maximum benefit. The 1987 expansion of the EITC, passed as part of the Tax Reform Act of 1986, increased the generosity of the credit and indexed the credit schedule to inflation. The most prominent change was the 1993 expansion, enacted as one of President Bill Clinton's signature initiatives – it introduced a credit for families without children for the first time, and greatly increased the credit for families with two or more children. Elsewhere in the figure, one can see smaller expansions in the early 1990s, as well as the introduction of a separate three-child schedule in 2009. This last change was part of the American Recovery and Reinvestment Act (ARRA), and was originally set to expire at the end of 2010, but has since been extended through 2017. Table 1 shows the specific credit parameters for selected years.

The Child Tax Credit (CTC) has a similar form to the EITC, in that is has a phase-in, flat and phase-out structure and the schedule differs somewhat across family types. However, the structure of the two programs is otherwise different. The CTC depends on only adjusted gross income (AGI), not on earnings. The phase-in and phase-out rates are 15% and 5%, much smaller in magnitude than the EITC. The maximum credit is $1,000 per qualifying child. Importantly, the CTC reaches much farther into the income distribution. The flat range of the CTC is very large – for a married couple with two children, it ranges from $13,333 to $110,000 for single (married) filers. The highest phase-out income level for the EITC is $53,267 (for married couples with three children), the same family can receive the CTC with an income as high as $170,000. For a single taxpayer with two children, the flat range extends from $13,333 to $75,000. Table 2 shows specific CTC parameters for different family types.

Another major difference is that the CTC, unlike the EITC, is not fully refundable. The refundable portion of the CTC is known as the Additional Child Tax Credit (ACTC), and is limited to 15% of earned income above a fixed threshold. This threshold was $11,500 (in nominal dollars) in 2007, preventing most low income families from receiving meaningful CTCs. But in 2009, ARRA reduced the threshold to $3,000 (again nominal). This allowed more taxpayers to claim the additional child tax credit and increased the amount of refundable credits,

making the low-income portion of the schedule more similar to the EITC. Like the three-child EITC provision of ARRA, the reduced CTC threshold was originally set to expire at the end of 2010, but has since been extended through 2017.

Figure 3 augments the EITC trapezoid, as illustrated in Figure 1, with additional areas representing the refundable and non-refundable (labeled "offset against taxes" on the graph) portions of the CTC under the 2014 schedule.[7] The figure also shows (in an area labeled as "forfeited") the portion of the credit that is forgone by very low income families for whom the refundability limit is binding. We show schedules for single (head-of-household) and for married taxpayers, each with two children (Figures 3a and 3b). (The contrast between the EITC areas in these two panels shows the expanded plateau region for married taxpayers, discussed above.) These make clear that the refundable portion of the CTC serves in large part to expand the EITC, serving approximately the same income range but increasing the benefit. By contrast, the portion of the CTC that offsets other tax liabilities rises much higher in the income distribution, not even beginning to phase out until income is double or more of the maximum value under the EITC.

Figure 4 shows outlays on the EITC and CTC over time, in real 2014 dollars and including both tax refunds and foregone tax revenues (the total tax expenditure). The EITC expanded from about $5 billion per year in the 1980s to nearly $50 billion in the mid-1990s, and has grown gradually since then. EITC expenditures were just shy of $70 billion in 2013. The CTC was introduced in 1997, but has grown extremely rapidly since then – since 2003, its total cost has been comparable to the EITC.

An often-voiced concern about means-tested transfer programs is that they can create high effective marginal tax rates (MTRs) as they phase out, and that the constellation of overlapping programs can create an extremely complex budget constraint. Figure 5, taken from Steuerle and Quakenbush (2015), shows the combined value of the EITC, the CTC, and other tax- and universally-available benefit provisions affecting low-income families (the Supplemental Nutrition Assistance Program, SNAP; Medicaid; the Children's Health Insurance

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[7] The distinction between the two is based on a simulation of the income tax liability of a family with no unearned income or itemized deductions. The portion of the CTC that offsets the family's income tax liability, net of the Child and Dependent Care Credit, is counted as non-refunded, while the portion that exceeds that liability is counted as refundable.

Program, CHIP; and health insurance premium assistance under the Affordable Care Act).[8] We assume here that families participate in all of the available programs, where in fact there is substantial non-participation in each. The tax provisions are colored in shades of gold, while other transfers and health programs are in shades of blue. Three things are of note here. First, the cash value of Medicaid and the SNAP (formerly known as food stamps) is much larger than that of the EITC for a family with income below $25,000 (though families may not value health insurance at its full cost). Second, despite this, the overall trapezoid shape created by the EITC schedule, with negative marginal tax rates (i.e., a positive slope in Figure 5) at low incomes and positive marginal tax rates (a negative slope) at higher levels, shows through despite all of the other programs that are layered on top of it. Third, the EITC serves a population that is also targeted by other means-tested transfers, where the CTC serves a much higher-income population that is unlikely to be receiving other transfers.

Figure 6 provides another look at the interaction among programs. Here, we plot the net effective marginal tax rate (EMTR), again assuming 100 percent take-up of the tax and transfer programs. In the figure, the solid line shows the EMTR for all tax and benefit programs, the dashed line shows the EMTR generated by federal income taxes (EITC, CTC, and the ordinary income tax) and the dotted line shows the EMTR for the EITC and CTC alone. (This figure is also taken from Steuerle and Quakenbush (2015) but we modify it in adding the EMTR for the EITC and CTC alone.) Again, we see that other programs shift the marginal tax rate schedule around, but that the basic pattern of negative, zero, then positive MTRs created by the EITC and CTC carries through to the overall schedule.[9]

The U.S. EITC has parallels in programs in place in many other developed countries (OECD 2011). One that is often discussed is the United Kingdom's Working Families Tax Credit (WFTC; see, e.g., Blundell and Hoynes 2004). Like the EITC, it is available only to those who work. A key design difference is that the WFTC does not have a phase-in negative marginal

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[8] The figure shows the programs in Colorado. It would be qualitatively similar in other states, but Medicaid differs across states both in its value and in its reach into the income distribution (for states that did not take up the Affordable Care Act Medicaid expansion).

[9] The figure shows average MTRs over $5,000 income ranges, to smooth over spikes in MTRs when taxes and benefits change discretely. This smoothing obscures the zero MTR in the plateau region of the combined EITC and CTC schedule – the $15,000 to $20,000 range includes a portion of the phase-out range as well.

tax rate; rather, it is available only to those who meet minimum weekly hours requirements. Enumerating the universe of EITC-like programs (often referred to as "In-Work Tax Credits") is difficult, as similar tax structures can appear quite different depending on how the different portions are labeled. (Consider, for example, the "program" consisting of the combination of payroll taxes, the EITC, and the TANF and food stamps benefit phase-outs.) There is a great deal of heterogeneity in implementation across countries (see Nichols and Rothstein 2015, OECD 2011), in part reflecting different weights placed on the three goals we outline above. The OECD (2011) classifies programs into those that are more targeted (this group includes the U.S., UK, France) and those that are more universal with low or no phase-out (this group includes Denmark, Sweden, and the Netherlands). The U.S. program stands out as more generous and as having one of the largest phase-in rates.

IV.   The economics of in-work tax credits

We discuss labor supply incentives under the EITC; those created by the CTC are generally similar, though we discuss a few relevant differences below.

The EITC generates labor supply incentives on the intensive and extensive margins that differ depending on marital status.[10] Among single parents, who represent 60 percent of EITC filers and 74 percent of total EITC tax expenditures, the EITC increases the returns to entering employment for those outside of the labor force, leading to an increase in labor supply on the extensive margin. The phase-in marginal tax rates are large in magnitude, currently -34 percent for those with one child, -40 percent for those with two children and -45 percent for those with three or more children. This leads to sizable increases in the first-hour net-of-tax wage (though a small portion of this is offset by other taxes, most notably payroll taxes, and by phase-outs in other transfer program schedules), and thus to large incentives to enter work. Even for those whose potential earnings are beyond the phase-in, the EITC increases the net-of-tax wage for entering work so long as potential earnings are below the end of the phase-out range. Figure 7 illustrates the canonical budget constraint and income-leisure tradeoff under the EITC.

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[10] This discussion draws from our prior work including Eissa and Hoynes (2006a), Hoynes and Patel (2015) and Nichols and Rothstein (2015).

The effects of the EITC on the intensive margin, for those already in the labor market, are less unambiguously work-promoting. In the phase-in region, the EITC increases the net-of-tax wage; the effect on the intensive margin is ambiguous due to a positive substitution effect and a negative income effect. On the other hand, in the phase-out region, both substitution and income effects create a consistent incentive to reduce labor supply, while in the flat region the substitution effect is zero but the pure income effect also is predicted to reduce labor supply.

Because the EITC is based on family income, the credit leads to a somewhat different set of incentives for married taxpayers. Overall, as with singles, we would expect higher rates of "family" employment (participation by at least one family member) for married couples, as a result of the credit being tied to work. But individual participation incentives can be more complex, particularly for secondary earners. Consider a sequential labor supply decision, where one spouse chooses his/her labor supply (non-strategically) before the other. The primary earner faces the same labor supply incentives as does a single filer, discussed above. However, suppose the primary earner earns enough to take the family into the phase-out range on his/her own. In this case the EITC imposes a positive first-hour tax on the secondary earner. The second mover can only reduce the family's credit by working, and the EITC thus reduces net returns to labor market participation. Importantly, though, the effective positive tax rate here is smaller in magnitude than the negative rate faced by single parents: It can never be bigger than the EITC phase-out rate (currently maxing out at 21.06 percent), and will often be much smaller.

As this makes clear, there are two unambiguous pro-work incentives in the EITC: Single parents and married couples (jointly) are encouraged to work rather than to remain out of the labor force. This is perhaps not surprising, as it is exactly this intended response that motivated the design of the program. But for other groups (secondary earners) and at other margins (hours of work rather than annual participation) the incentives can work in the opposite direction, discouraging rather than encouraging work.

The self-employed face additional incentives. These mostly relate to reporting – where wage and salary earnings are reported to the IRS by the employer (on the Form W-2 earnings report), self-employed workers report their own earnings with limited third party verification, and may be able to change the amount of earnings reported without changing their actual labor supply. Additionally, many self-employed workers make accounting decisions about how to allocate business income between earnings and profits. Those in the phase-out range of the EITC

schedule, and even some with earnings above the end of that range, can face an incentive to hide or reclassify some earnings in order to maximize their credit (this would also reduce federal income taxes). By contrast, those in the phase-in range face incentives to *raise* their reported earnings. This is because the EITC phase-in rate is higher, in absolute value, than the additional payroll (and ordinary income) taxes that would need to be paid on additional reported earnings. Similar incentives apply to those choosing between formal and informal (i.e., under the table) work – the EITC raises the return to being paid formally, though it can also incentivize shifting a portion of compensation under the table for those in the phase-out range. Most IRS enforcement efforts are focused on identifying under-reporting, and a taxpayer who over-reported her self-employment income in order to increase her EITC may be hard to detect.

The labor supply predictions under the CTC are similar, but more muted given the smaller credit amount. The general shapes of the two credits are similar, each with phase-in, flat, and phase-out regions. However, the "flat" portion of the CTC is very large and the phase-out rate is low, only 5 percent, and comes in at relatively high income levels—among families with two children the phase-out region starts at $110,000 for married couples and $75,000 for single parents and ends at $150,000 and $115,000, respectively.

The incentive to participate in the labor market under both the EITC and the CTC is based on the (negative) average tax rate at potential earnings. The CTC never creates an average tax rate smaller than -13.04% (this is for three-child families), and for most potential workers it is larger than this. (The combined ATR of the two programs in combination can be much more negative, but this is driven by the EITC.) Thus, while the CTC shares the EITC's pro-participation incentive, the CTC's contribution is likely to be small. The secondary earner and intensive margin incentives are less important as well, given the long reach of the program.

The EITC and CTC also create incentives surrounding other decisions that would affect the tax credit, most notably marriage and fertility. These are not explicit goals of the programs, and indeed the incentivized behavior is often counter to what we might hope to promote, but are inherent in a credit administered through the family-based tax system and tied to the presence and number of children. In particular, the EITC creates incentives for low-income one-earner couples to legally marry, while for low-income two-earner couples the incentive is to avoid marriage or separate. The substitution effects are fairly clear here, but there may also be income effects at work, possibly in the opposite direction: Increased financial resources due to the EITC

and CTC may free some women from the pressure to enter into unpromising marriages. On net then, the EITC and CTC, like ordinary income taxes, create marriage penalties for some and marriages bonuses for others. Additionally, because the credits increase with the number of children, they may incentivize additional births.

Given the distributional goal of the credits, it is useful to consider their expected effects on the distribution of income. We distinguish two types of effects: the *direct* and *indirect* effects of the programs on net disposable income. The direct effect is simply the EITC or CTC payment, which of course has a positive effect on after-tax and transfer income. The indirect effect comes from any induced change in pre-tax earnings and other family income. For those induced to enter the labor market, increases in earnings increase family income (a positive indirect effect), but this may be partly offset by reductions in other income sources, such as cash welfare and SNAP. For those already in the work force, the indirect effect is likely to be negative, but for plausible elasticities much smaller than the positive direct effect.

There is a second-order indirect effect as well, not yet discussed. Specifically, the EITC may affect *pre-tax* wages. Since the negative effective tax rate encourages increased labor force participation, standard tax incidence models suggest that the credit will be shared between the buyers and sellers of labor (Rothstein 2008, 2010; Leigh 2010). This occurs through a reduced pre-tax wage, allowing employers of EITC recipients to capture a portion of the money spent on the EITC (and, as a side effect, creating a transfer from non-EITC workers competing in the same labor markets as the recipients to their employers). This fact was not prominent in early discussions of the EITC but concerns about incidence have become more prominent as the EITC has expanded in the presence of relatively low minimum wages.

It is useful to relate back to the credit schedule to consider where in the income distribution we expect to see these direct and indirect gains. Figure 8 provides some of this information by illustrating the 2015 EITC in income/poverty space for six groups defined by marital status and number of children. In each figure, the x-axis is pre-tax earnings (or AGI) and the y-axis is after tax income (earnings plus the EITC), expressed as a percent of the poverty threshold. Consider a single parent with two children working full time at the federal minimum wage (this group is in Figure 8e). Pre-tax earnings would be $15,080, or about 75% of the poverty line based on pre-tax income. But this family would be in the plateau region of the EITC, with a credit of $5,548 that would bring post-EITC income to 103% of the poverty line.

Seen somewhat differently, a family with earnings as low as $14,542 -- placing it just above the top of the EITC phase-in region – would be at 72% of the FPL without the EITC but would be lifted to the poverty line by the EITC. Figure 8f shows that a married couple family with two children with earnings of $18,702 (in the flat region) would be at 77 percent of the FPL without the EITC but would be lifted out of poverty by the EITC. By contrast, the credit for the childless (panels a and b) is sufficiently low that there is no pre-tax earnings level at which the EITC brings the taxpayer above poverty.

V.   What do we know about how the programs affect these objectives?

We organize our assessment of the available evidence around the three goals that we discussed above: distributional, encouragement of work, and limiting of noncompliance and administrative costs. We begin in Section V.A by presenting empirical estimates of the distributional effects, without accounting for behavioral adjustments. We then review the empirical literatures measuring behavioral effects on labor supply (and other outcomes) in Section V.B and noncompliance in Section V.C. There is much more direct evidence regarding the EITC, which has a much higher public profile, than about the CTC, so our discussion focuses on the former. In the final subsection, V.D, we present the available evidence on what is missed by the static perspective – on the distributional impacts of the programs once indirect effects operating through labor supply and other changes that influence pre-tax income are included.

V.A.   Static distributional effects

Median family income in 2014 was $53,657, the 20th percentile was $21,432, and the 40th percentile was $41,186 (DeNavas-Walt and Proctor 2015). Comparing these figures to Figure 8 shows that a large fraction of families have incomes that are both (a) not too far from the poverty line and (b) in the range where the EITC can have a substantial effect. This suggests that the EITC has the potential to have important effects on after-tax poverty and income distributions, even before considering any indirect effects operating through labor supply channels.

We rely on two sources in assessing the static distributional effects of the EITC and CTC. The first is the Census Bureau's calculations for the new Supplemental Poverty Measure

(SPM).[11] The SPM resource measure includes taxes and cash and non-cash benefits, allowing for a simple static calculation as to the anti-poverty effects of the EITC and CTC covering the whole population of tax filers and non-filers alike. In 2014, the SPM poverty rate was 15.3 percent, but the Census Bureau calculates that it would have been 18.4 percent without the EITC and CTC (Short, 2015). The effect on child poverty is even larger: The SPM poverty rate for those under 18 years of age was 16.7 percent, but would have been 23.8 percent without the refundable tax credits. Based on these numbers, the EITC and CTC can be credited with lifting 9.8 million people, including 5.2 million children, out of poverty. The effects on total poverty are far larger than those of any other single program except Social Security, and the effects on child poverty are the largest without exception.

The second approach limits attention to tax filers, as represented in the Statistics of Income Public Use File distributed by the IRS. We begin by illustrating the *potential reach* of the two programs. Figures 9 and 10 show the pre-tax income distribution of tax filers in 2009 (the most recent year available), inflated to 2014 dollars and presented by marital status (married, single) and number of children (zero, 1, 2, 3 or more). Figure 9 is for single filers and Figure 10 is for married. The income tabulations include all tax filers, not just EITC or CTC recipients.[12] Overlaid on each figure are the EITC and CTC schedules. Several observations can be drawn from these figures. First, they illustrate the variation in the generosity of the schedule across the eight groups. The credits are substantially larger for families with children than for those without children and the credits are larger for families with larger children. Second, they show that the potential reach of the EITC, particularly among single parents, is very high. Only 30% of singles with one child and 18% of singles with two children have earnings *higher* than the top of the phase-out range (compared to 75% and 76% for married families with one and two children, respectively). Third, they show that the CTC extends to very high income levels, and the majority of both single and married parents qualify for substantial benefits.

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[11] Official poverty is based on a pre-tax cash income measure for resources. Thus, the direct (or static) impact of the EITC on official poverty is zero by construction. The SPM is designed, in part, to capture the effects of tax and other policies on poverty that are missed by the official poverty measure.

[12] We limit the sample in each case to those returns with earned income between $1 and $200,000 and indicate in figure notes the share of total filers for that demographic group that are excluded from the histogram (those filers with earned income that is <=0 or >$200,000).

Next, we move from the potential reach to the actual use of the programs – not all families are eligible, and while take-up rates are high they are not complete. We use the Tax Policy Center's (TPC) microsimulation model, applied to the same Statistics of Income file, to measure the distribution of EITC and CTC benefits under current law. We discuss these current law findings in the next paragraphs. In a later section, we use the same approach to examine the distributional impacts of alternative policies.[13]

By design, the TPC simulations assume that pre-tax income and earnings, as well as all other characteristics (e.g., number of children) are unaffected by counterfactual tax rules, so only capture the *static* effects of the current policies. We discuss the implications for the full dynamics effects below.

To illustrate the benefits of current law EITC and CTC, we use the TPC simulations to compare the current law tax policies to three sets of counterfactual policies. The first zeroes out the EITC; the second zeroes out the CTC; and the third keeps both programs but reverts the CTC to its pre-2009 schedule, with the refundable portion of the credit limited to 15% of the family's income in excess of $14,600 (rather than the $3,000 threshold currently in place).

We begin, in Figure 11a, by plotting the distributional effects of the EITC for all tax filers. The x-axis shows bins of 2015 income. There are two sets of bars: The darker bar plots the share of total tax units in each income group while the lighter bar shows the share of total EITC tax benefits that accrue to each income group. The line graph illustrates the share of total income accounted for by each income group – not surprisingly, the highest income categories account for a much larger share of income than of filing units.

The EITC series in Figure 11a shows the distributional goal of the program is EITC is well met – more than half of the benefits go to filers with income below $30,000. Another potential dimension of the distributional effects relates to family type. The remaining panels in Figure 11 present the same graph by family type: married couples with children (Figure 11b), married couples without children (Figure 11c), single filers with children (Figure 11d) and single filers without children (Figure 11e).. For each subgroup, we display the relevant series (tax units, pre-tax income, EITC benefits) as a share of the total (all filers) amount.

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[13] We thank Elaine Maag and the TPC tax model team for providing us with these simulations.

Looking at the lighter bars in these figures, it is clear that the EITC largely accrues to single filers with children (Figure 11d). Specifically, 62% of EITC benefits go to single parents with children, as compared with only 24% to married-filing-jointly filers. Comparing to the darker bars in those figures, it is clear that this difference across family types entirely reflects the different income distributions of the two groups– there are roughly 2.5 times as many married-filing-jointly returns filed as there are head-of-household returns, but the latter are 3.4 times as likely to have incomes below $40,000.

The CTC, with its eligibility range extending relatively high up the income distribution, is less successful in meeting the distributional goal. In Figure 12a we compare the distribution of EITC and CTC payments across income groups, pooling all types of filers. The CTC series here (the middle set of bars) includes both credits that are used to offset income tax liabilities and credits issued as refunds. More than half of the benefits of the CTC go to filers with incomes over $50,000; for the EITC, the corresponding figure is less than 11 percent. At the other end of the distribution, over 25 percent of EITC benefits but far less than 10 percent of CTC benefits go to filers with incomes below $20,000. Figures 12b-d show this comparison for the four family types (married with children in 13b, married without children 13c, and single with children in 13d and single without children in 13e – note that the axes vary across these panels). Figure 13 summarizes the EITC and CTC in terms of their distribution across family types. Over 60% of EITC benefits go to head-of-household filers (i.e., to single parents), but this group receives only 40% of CTC benefits. This is due to the CTC's high income limits, which allow over half of the benefits to flow to married couples (many dual-earners); this group gets less than one-quarter of EITC benefits.

Prior to 2009, the lowest income filers were effectively ineligible for the CTC, as they had no income tax liability and were not eligible to receive the CTC as a tax refund due to the high income threshold for refundability (the CTC refund was limited to 15% of earnings over $11,500 in 2007). The provision that reduced the refundability threshold to $3,000 is currently set to expire in 2018. It is thus useful to consider the distributional impact of the reduction of the refundability threshold, seen as a policy in and of itself. Returning to Figures 12 and 13, the lightest bars illustrate the distributional effects of the counterfactual policy that restores the pre-

2009 CTC refundability threshold.[14] By comparing the lighter bars (current law CTC) to the lightest bars (CTC with high refundability), we illustrate the highly progressive distributional effects of the lower refundability threshold.[15]

V.B.   Behavioral Effects

Given the prominence of the EITC and the significant expansions of the credit in the tax acts of 1986, 1990, 1993, and 2009, there is a significant body of research estimating the behavioral effects of the credit. There are several existing reviews of the literature (e.g., see Hotz and Scholz 2003, Eissa and Hoynes 2006, and Nichols and Rothstein 2015). Rather than recapitulate those reviews, here we provide only a brief summary of the main findings in the literature.

The main focus of the empirical literature regarding the EITC, particularly in the early years, was to quantify and explore the main pro-work aspect of the program: the incentive it creates for single parents to participate in the labor force. In practice, this meant analyses of employment decisions (at the extensive margin) of low educated single mothers. Most studies take a quasi-experimental approach leveraging the variation across tax year and family size in the federal credit, essentially using women with no children or women with just a single child as controls. A smaller set of papers uses variation in state EITCs, which add on to the federal credit. The 1993 expansion provides a particularly attractive policy reform because it represents the largest expansion of the credit in its history (see Figures 2 and 4) and the expansion for women with two or more children was much larger than the expansion for women with one child (thus allowing for a comparison among single women with children, comparing those with two or more children to those with one child).

Across all of the different types of comparisons, the evidence nearly universally points to a significant positive effect of the EITC on the labor force participation (or employment) of single women with children. For example, Eissa and Liebman (1996) find labor force

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[14] This simulation, along with the others, is for tax year 2015. We set the threshold for refundability at $13,850 (2015 dollars), adjusted for inflation from the 2001 threshold of $10,000 (nominal).
[15] Maag (2015) explores the implications of changes in the CTC refundability threshold, as well as other potential changes to the program, in more detail.

participation increased by 2.8 percentage points for single females with children, relative to single females without children after the EITC expansion of 1986. Over a longer period, Meyer and Rosenbaum (2001) find that the EITC raised labor force participation by 7.2 percentage points for single women with children relative to those without children between 1984 and 1996. Hoynes and Patel (2015) find that the 1993 expansion increased employment by 6.1 percentage points, with larger effects for women with two or more children (as expected from the expansion). Using the approach in Chetty, Guren, Manoli and Weber (2013), the extensive margin elasticities for these studies ranges from 0.30 to 0.45 (Hoynes and Patel 2015).[16]

The changes in employment, particularly for the 1993 expansion, are evident in the basic unconditional trends. This is illustrated in Figure 14 (based on Nichols and Rothstein 2015, Figure 8b) where we use the March Current Population Survey and plot the percent of single women (those with zero, one or two or more children) working at all during the year for each year from1976 to 2013. The figure illustrates that for the two decades before 1993, the annual employment rate for unmarried women with children was substantially below that for single women without children. By 2000, the gap narrowed substantially, with an especially dramatic increase for single women with two or more children (who experienced a larger EITC expansion). Since then, employment rates show a decline for all groups, likely reflecting adverse macroeconomic conditions.

Figure 15, taken from Figure 7 in Hoynes and Patel (2015), illustrates the quasi-experimental estimates of the EITC from the 1993 expansion controlling for other contemporaneous effects such as welfare reform and the strong labor market (Blank 2001). The figure plots event time coefficients and 95 percent confidence intervals for single women with two more children and with one child, both compared to single women without children. The omitted year is 1993 (the year prior to the policy expansion). The graph also displays the change in the real average maximum credit across the groups (dashed line, right axis) to give some guidance as to how the EITC is changing over time and across groups. The figure shows the differential labor supply increases after 1993 closely follow the pattern of EITC expansions—

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[16] These elasticities are with respect to the net of tax wage, taking account of other taxes. It is more common in the EITC literature to report elasticities with respect to gross earnings plus the EITC (or, equivalently, with respect to the EITC average tax rate). These are higher, in the 0.7-1.0 range. See Chetty et al. (2013), Appendix B.

women with children increase their employment relative to women without children with larger effects for women with two or more children.[17]

This graph makes quite clear that the EITC has a large positive effect on single mothers' labor force participation, and this conclusion is consistent across studies.[18] There are fewer studies of married couples, but the available evidence shows that the EITC leads to small reductions in the employment of married women, consistent with the predictions above. There is little evidence of any effects on men (Eissa and Hoynes, 2004, 2006b).

A second question concerns the EITC's effect on the intensive margin. Estimates based on quasi-experimental approaches like that illustrated in Figure 15 show little sign of meaningful effects (Hotz and Scholz 2003; Nichols and Rothstein 2015). However, standard difference-in-differences research designs are not ideally suited to this question due to the confounding effects of composition – the large extensive margin effects mean that the composition of the working population is different between the pre- and post-EITC period.

In the past decade, the EITC literature has re-focused on the intensive margin using other methods. Saez (2010), which looks for "bunching" in the income distribution around the kinks in the EITC schedule, was one of the first in this vein. Saez (2010), like other bunching studies that have followed, found little sign that families in the phase-out range reduce their labor supply to maximize their credits, but did find evidence that workers in the phase-in range adjust to increase their credits (Saez 2010; see also Chetty, Friedman and Saez 2013, Chetty and Saez 2013). Most of this effect derives from self-employed workers, who generally self-report their earnings without independent verification on the part of the IRS. It is thus difficult to determine whether it is a real behavioral effect or a change in reporting. Chetty, Friedman and Saez (2013) use earnings distributions of families in the year after the birth of a child to look for intensive margin responses. They find that the intensive margin elasticity is small on average, around 0.14, though they argue that this is attenuated due to a lack of information about the incentives that families face.

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[17]It also shows that in the years prior to the expansion employment was trending similarly across the groups, validating the use of women without children as controls.

[18] The extensive margin effects estimated in the literature are quite robust across different time periods (including studies identified from pre-1993 expansions) and using different identification approaches (including more structural approaches or using state EITC expansions).

There are a handful of studies that examine the effect of the EITC on marriage (e.g., Ellwood 2000, Rosenbaum 2000, Eissa and Hoynes 2004, Herbst 2011, Michelmore 2014). The empirical evidence is largely inconclusive, though it generally points to small effects. There is less evidence on the effects of the EITC on fertility (Baughman and Dickert-Conlin 2009) but again the results suggest small effects. Finally, though somewhat outside the scope of this paper, there is a recent and growing literature that uses the increase in after-tax income generated by the EITC to examine impact on downstream outcomes. The studies find that the credit leads to increases in infant health (Baker 2008, Baughman 2012, Hoynes, Miller and Simon 2015, Strully et al 2010), maternal health (Evans and Garthwaite 2014), children's cognitive outcomes (Dahl and Lochner 2012, Chetty, Friedman, and Rockoff 2011) and educational attainment (Michelmore 2013, Manoli and Turner 2014). These are generally interpreted as income effects, though it is possible that a portion of each effect is directly related to increased maternal employment.

In sum, the evidence on behavioral effects shows that the EITC leads to substantial increases in employment for single mothers, concentrated among less-skilled women and among those with more than one child. There is also evidence of small reductions in employment for secondary earners in married couples, but little evidence of any induced changes in male labor supply. Though there is less evidence on the intensive margin of labor supply, the available evidence suggest at most small responses. There is little evidence that the EITC has much of an effect on marriage or fertility.

V.C. Compliance

Over-claiming of the EITC has been a persistent concern with the program. The most recent IRS study (Internal Revenue Service 2014), based on audited 2006-2008 returns, found an overclaiming rate between 28.5% and 39.1% of all EITC dollars claimed (the range derives from assumptions about taxpayers who did not participate in the audit).[19] There are two primary sources of noncompliance—misclaiming of qualifying children and income misreporting.

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[19] The rates of overclaiming may be overstated in the administrative data, as filers who request reconsideration of credit denials succeed in overturning nearly half of IRS rulings (National Taxpayer Advocate 2004).

Qualifying child violations occur in 30% of returns with over-claims, but represent over half of the dollars of over-claims. The EITC's qualifying child rules are complex, and – despite recent changes aimed at harmonization – differ from those for child exemptions. IRS Publication 596 lists a multitude of examples in which many economists would have trouble identifying who was eligible to claim the credit, and many situations in which multiple filers could claim different credits with choices over who claims qualifying children.[20] The optimal choice is often hard to determine. Greenstein and Wancheck (2011) conclude that "EITC overpayments most commonly result from misunderstanding of how to apply the EITC's intricate rules regarding who may claim a child, especially in changing family situations involving separated, divorced, or three-generation families." Although definitions have been changed to better align with those used elsewhere in the tax code and the IRS has increased its efforts to verify children's identity (by, e.g., requiring reporting of the child's social security number on the tax form), misreporting of qualifying children remains high.

The other major category of over-claiming, income misreporting, is more common but results in smaller overpayments, on average. About two-thirds of returns with overclaims misreport income. Incorrect reporting of self-employment income is the primary source of income misreporting (resulting from the lack of second party verification that is present for wage and salary income).

Another source of evidence related to reporting or noncompliance comes from the "bunching" studies discussed above. In the original Saez study (Saez 2010), since replicated by others (e.g. Chetty et al 2013), there is substantial evidence of bunching at the end of the phase-in region, at the first EITC kink. Chetty and Saez (2013) found something similar as the result of an information treatment at H&R Block: The provision of information about the tax schedule led families to move toward the first kink point. There is no sign of bunching at the second kink point (between the plateau and the phase-out range), nor of a hollowing out of the density at the third (at the end of the phase-out range), though the standard model would predict all three.

As Saez points out, the total marginal tax rate, combining the EITC and other taxes (e.g., payroll taxes), is generally negative in the phase-in range implying that a filer with earnings

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[20] Residency test failures are the most common in the over-claiming audits, suggesting that many non-custodial parents claim a child who should have been claimable only by the custodial parent. Enforcement is challenging for the IRS, as many components of the qualifying child definition are not readily observed.

below the first kink point would come out ahead by reporting to the IRS *higher* earnings than he/she actually had. Saez (2010) and others find that the bunching at the first kink point is entirely driven by the self-employed, who likely have a fair amount of latitude over how much income to report. Thus, Saez suggests that the bunching he observes likely reflects decisions to report casual earnings (from, e.g., babysitting) that would not have been reported to the IRS in the absence of the EITC, though it is also possible that some of it reflects a true intensive margin response or reporting income that was not actually received in order to maximize the value of the EITC.

V.D.   Distributional-dynamic

The above evidence suggests that the labor supply impacts of the EITC, particularly on the participation decisions of single parents, are large, and may have important implications for the distributional impacts of the policy. Unfortunately, there is little evidence that quantifies the distributional effects of the EITC taking account of the full behavioral responses.

A handful of studies estimate the effect of the EITC on income or poverty (Bollinger et al 2009, Grogger 2003, Gunderson and Ziliak 2004, Hoynes and Patel 2015). This literature shows that the *direct* (EITC payment) and *indirect* (through earnings net of changes in other income) channels combine to lead to large effects of EITC on income. For example, Hoynes and Patel (2015) use difference-in-difference (DD) and parameterized DD models to estimate the effects of the EITC on the distribution of after tax and transfer income relative to poverty among single mothers with less than a college education. They find that the 1993 expansion led to a 7.9 percentage point increase in the share of families with after tax and transfer income above poverty. They estimate similar models for the propensity to have after tax and transfer income above various income to poverty thresholds; Figure 16 (taken from Figure 11 in Hoynes and Patel 2015) provides their core results. They find that the EITC has little effect on the very lowest income groups (below 75% poverty), likely reflecting low labor market attachment of families in this range. Between 75% and 150% of the poverty line, the effects of the EITC are large and statistically significant; they then fall to zero by 250% poverty.

Hoynes and Patel then use these results to compare the static distributional effects of the EITC (direct effect only) to the dynamic distributional effects (direct and indirect effects). They find that for their sample of single mothers with children ignoring the indirect effects of the

EITC (increased earnings net of changes in other income) leads to significant underestimates of the distributional effects. For example, they find that the total effect of the EITC removes 2.4 million children from poverty compared to 1.2 million when considering only the direct effect.

Another dimension of dynamic effects has to do with tax incidence, the effect of the EITC on pre-tax wages. As we discussed above, the standard incidence model predicts that the EITC should, to some degree, reduce pre-tax wages. These effects would be felt by EITC-eligible and non-eligible workers (who mix in the workplace) alike. Such general equilibrium effects are difficult to estimate using credible research designs, especially given the widespread use of the variation by tax year and number of children (e.g. OBRA 93), as wage effects would be common to all family types in the same year. Leigh (2010) exploits the introduction of state level EITCs in a DD framework, essentially relying on the assumption that employers do little substitution of workers across states. He finds that a 10% increase in the EITC leads to a 5% (2%) reduction in pre-tax wages for high school dropouts (high school graduates) and no effect on the wages of college graduates. Rothstein (2010; see also Rothstein, 2008) takes a simulation approach by relying on previous estimates of demand and supply elasticities to calibrate a calculation of the distributional effects of the EITC. He finds that $1 in EITC payments leads to $0.09 worth of increased labor supply but a $0.27 decline in worker pre-tax incomes—the difference, $0.36, is transferred to employers through reduced pre-tax wages. As a consequence, after-tax income rises by only $0.73.

Although none of the evidence is airtight, it appears that employers of low-wage labor capture a meaningful share of the credit through reduced wages and this comes to some extent at the expense of low-skill workers who are not eligible for the credit (due, e.g., to not having children). The implied effects are large enough to have quantitatively important implications for the EITC's distributional impacts – a crude calculation based on Rothstein's (2010) results suggests that static calculations could overstate the transfer to recipients by as much as one-third, and that dynamic calculations like Hoynes and Patel's (2015) overstate it by as much as one-half (based on the ratio of Rothstein's (2010) wage-constant effect on after-tax income, $1.09, to the net effect inclusive of wage responses, $0.73). But this remains an under-studied topic, and the effective confidence intervals around these estimates are large.

VI.   The Need for change

The above evidence indicates that the EITC is doing a good job of meeting its objectives: It successfully targets low-income working families, bringing many of them out of poverty; it has meaningful positive effects on labor force participation, with small or zero negative effects on the intensive margin and for secondary earners; and, while there is evidence of substantial overclaiming, the dollar amounts are not that large, and errors seem to relate in large part to qualifying child definitions. The CTC, while less studied, is clearly less effective on at least the distributive and labor supply dimensions, and likely in terms of compliance as well.

But although the EITC is doing well on all three margins, it would be possible to improve. The concerns most commonly voiced about the EITC are that it largely fails to reach childless workers (including non-custodial parents) and that overpayments are too high. We thus consider three potential changes aimed at addressing these concerns. First, we consider President Obama's proposal to expand the childless EITC to more than double its current size. Second, we consider an even more dramatic expansion designed to bring the childless EITC to rough parity (in family-need-adjusted terms) with that available to families with children. Third, we consider changing the calculation of the credit for families with self-employment income, which as noted above is an important source of overclaiming. Under our proposed alternative schedule, self-employment income would not count toward increasing a family's credit, reducing the incentive to over-claim such income.

We discuss each of these proposed changes in more detail below. These proposals were chosen in part because their (static) distributional impacts can be simulated using the TPC calculator, and we present estimates of each. But we also discuss alternative proposals that would help to address the same concerns, as well as the likely impacts (particularly on labor supply and compliance) that are not captured by the TPC simulations.

None of the above proposals are designed primarily to improve the EITC's labor supply impacts, though here too there are reasons to be dissatisfied with the status quo. As discussed above, the EITC has large positive effects on labor force participation among single parents, with little if any negative effect on hours of work of those who would work in any case. But for married couples the labor supply impacts are not so positive: Eissa and Hoynes (2004) document a negative effect on the labor supply of married women, many of whom are secondary earners and who therefore would qualify for a larger EITC if they did not work than if they did.

Unfortunately, there are few good options for avoiding this problem. It is merely an example of the marriage penalties that are inherent in any progressive, family-based tax system, and like other marriage penalties is quite difficult to avoid. Berlin (2007) proposes making the EITC depend on individual rather than family earnings. Holt and Maag (2009) propose replacing the EITC and CTC with a worker credit, based on individual earnings, and a child credit based on family earnings. This would eliminate the second worker penalty, but would represent an enormous change in the U.S. tax system and would cost tens of billions of dollars. A more incremental proposal comes from Kearney and Turner (2013), who would create a secondary earner deduction that would reduce the second worker penalty and effectively extend the EITC schedule for two-earner families.

VII.   Options for change

VII.A. Options aimed at childless tax filers

Our first two alternative policies would dramatically expand the EITC for families without children. Because historically the EITC was seen as an alternative to cash welfare as a means of supporting children, it was initially unavailable to childless adults and remains comparatively limited for them. But views of the purpose of the EITC have evolved and it is now seen, at least in part, as a way of compensating for the erosion of real wages paid to low-income workers. This does not provide much rationale for excluding childless workers, and so there is increasing interest in expanding this portion of the credit.

Table 3 compares the parameters of the no-child EITC under current law (column 1), under the Obama Administration proposal (column 2), and with a more aggressive proposal (column 3). The Obama proposal would roughly double the generosity of the credit for very low income childless taxpayers, as well as extending the plateau and phase-out ranges to higher income levels.

Our proposed alternative expansion is designed to set the maximum credit for a single childless adult to the same level as for a single adult with one child, after adjusting for the different needs of one- and two-person families using a standard equivalence scale. We keep the phase-in range the same as in current law, and solve for the needed phase-in rate; this turns out to be nearly identical (33.8% vs. 34%) to that for one-child families under current law. We set the plateau for single adults to have a width of $5,000, very similar to its width under Obama's

proposal and to the plateau for multiple-child families under current law. Following the schedule for families with children, we extend the plateau range by $5,500 for married couples. We set the phase-out rate to match the current one-child schedule (15.98%).

Figure 17 illustrates the schedules under the three alternatives, with the one-child single schedule shown as well for comparison. Either of the alternatives to current policy would better serve the purpose of redistributing more money to low-income families, and would do more to encourage labor force participation, than does the current schedule. They would likely reduce over-claiming: although childless individuals and couples would face the same incentives as do those with children to over-report self-employment income, the great incentive that families currently face to mis-claim qualifying children would be much reduced and, in many cases, nearly eliminated. The expanded credit would also lead to changes in incentives for marriage. Couples without children will now face similar incentives as we discussed above for couples with children (marriage penalties for two earners and marriage subsidies for one earners). Marriage penalties for two earner couples with children will increase under the expansion. The existing research, however, suggests these changes in marriage penalties (and subsidies) will not translate to meaningful changes in marriage.

We again turn to the Urban-Brookings TPC Microsimulation model to quantify the static distributional effects of these changes. Figure 18 presents a comparison of EITC current law, the Obama plan ("Alternative A") and our more generous expansion ("Alternative B"). The total cost of the Obama expansion is $4.6 billion, while the more generous expansion would cost $18 billion (each on top of the $68.5 billion cost of the EITC under current law).[21] Figure 18 plots, by income bin and for married couples without children (left panel) and single filers without children (right panel), the average EITC received under current law and the two alternatives. Both alternative plans show, as expected, an increase in EITC payments throughout the EITC-eligible range. To reiterate, this is a static simulation and there is no response of labor supply modelled here, either on the extensive (we would expect more filers) or intensive margin.

Of course, the above schedules are not the only option for expanding the EITC for taxpayers without children. One alternative that has received some attention is an expansion of

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[21] The Obama proposal (Executive Office of the President and U.S. Treasury Department 2014) costs the expansion at $60 billion over ten years.

eligibility for non-custodial parents, conditioned on the payment of child support and designed to create incentives to do so (Primus 2006). New York and Washington DC have implemented non-custodial parent credits, and a regression discontinuity evaluation of the New York program shows positive effects on both employment and child support payment (Nichols, Sorenson, and Lippold 2012).

VII.B. An option aimed at improving compliance

The third reform option we consider is aimed at reducing non-compliance with the EITC. As discussed above, there is suggestive evidence that many self-employed individuals over-state their earnings in order to qualify for larger EITCs, and the IRS estimates that this accounts for a large share of EITC over-claiming.

One way to eliminate this source of non-compliance is to base credit calculations only on non-self-employment income. This is not unprecedented: California's new EITC excludes self-employment income. It reduces the redistributive value of the credit – some self-employed workers are deserving – and also its labor-supply-promoting effects. But it also reduces the scope for over-claiming by reporting income that was not actually earned.

To implement this proposal, we simulate a new credit schedule that counts only wage and salary income toward the filer's EITC. (We allow self-employment income to *reduce* the credit if the total of employment and self-employment income would place the filer in the phase-out range or would be too high to be eligible; we simply ensure that the presence of self-employment income cannot *increase* the family's credit.

Figure 19 presents the simulations under current law and the alternative policy, again using the Urban-Brookings Tax Policy Center Microsimulation Model. The cost of the EITC would decline by $11 billion under this plan. The upper panel of Figure 19 shows that change in average EITC payments by income bin, and as expected the reduction in the value of the EITC is larger at lower income levels. In the lower panel we see that this reform would lead to EITC losses for all filing types.

VIII.   **Conclusion**

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In this paper, we examine the state of tax policy for families with children. We focus on the two most important provisions, the Earned Income Tax Credit and the Child Tax Credit. We discuss these two programs within the lens of the three presumed goals of the programs: distributional, encouragement of work, and limiting of administrative costs and noncompliance. To discuss these three goals, we use tax data and quantify the static distributional features of the programs. We also summarize the existing research to assess how the programs meet the other two goals.

We conclude that the EITC well meets all three of these goals. The policy provides increases to income for low to moderate income families. A large body of research shows that the first order behavioral effect of the policy is to increase employment among single mothers with children. Married couples also benefit from the program, and secondary earners in those families are found to reduce modestly their employment. Administrative costs are low, particularly compared to the public assistance alternative to the EITC. Compliance remains an issue, with complicated rules for claiming children and incentives to overreport self-employment income. The CTC looks much less favorable within this lens. The credit is not targeted, with a large share of the expenditures extending way above median income groups. However, the 2009 expansion of the credit, making the CTC refundable at low earnings levels, is highly targeted and represents effectively an expansion of the EITC.

We also discuss and simulate proposals to reform the EITC that would improve one or more of the three program goals. The credit for childless taxpayers is very low, so like others we consider an expansion for this group. We also consider limiting self-employment income for calculating the EITC in the phase-in region as part of promoting higher tax compliance.

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Figure 1. EITC schedule, by number of children and marital status (2015 tax year)
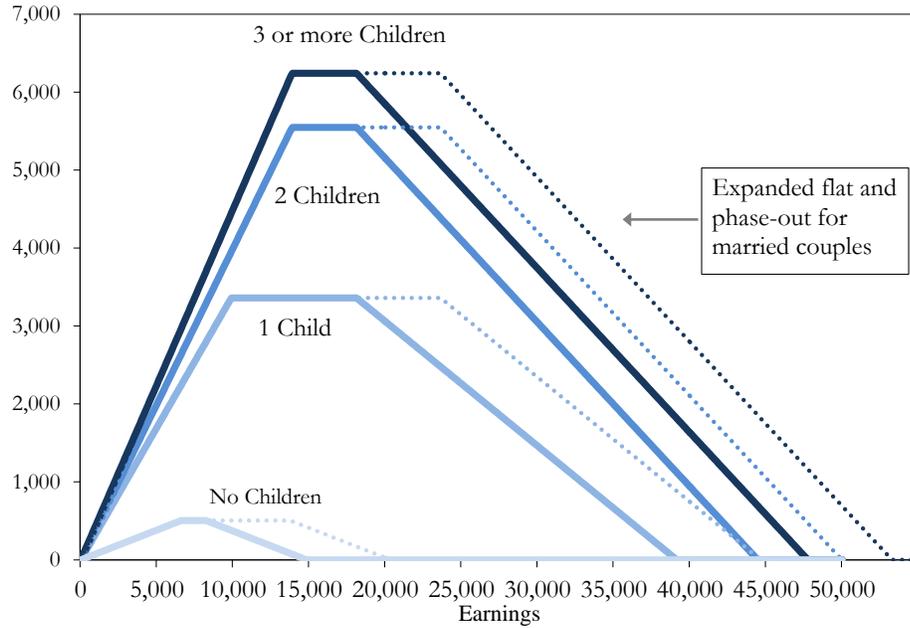
3 or more Children

2 Children

Expanded flat and phase-out for married couples

1 Child

No Children

Earnings

Figure 2. Maximum EITC credit over time, by number of children

- · Three or more children
—— Two children
- - One child
····· No children

ARRA 2009

OBRA 1993

OBRA 1990

TRA 1986

Maximum EITC (2014 dollars)

Year
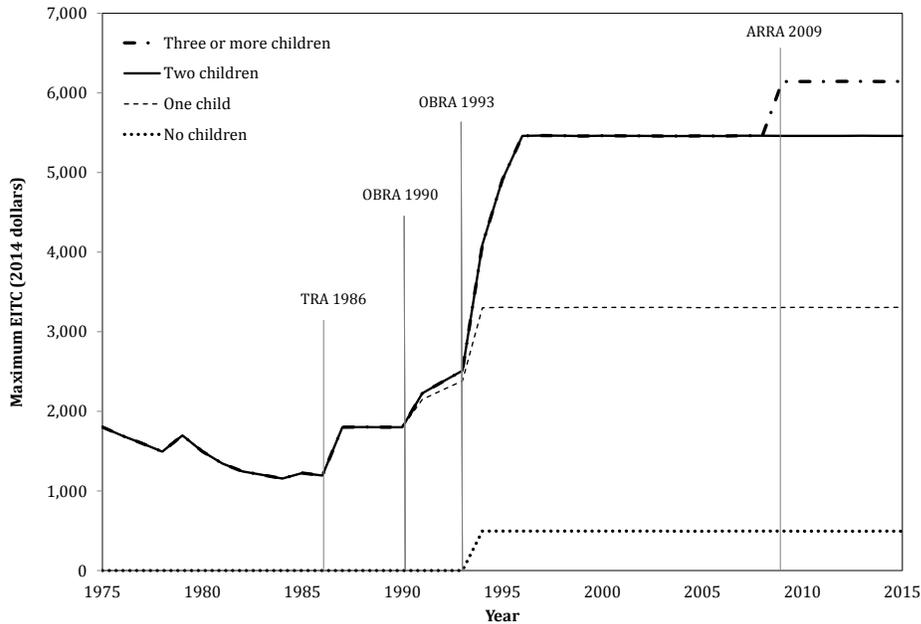
Figure 3. Combined EITC and CTC Schedules

(a) Head of Household, 2 children
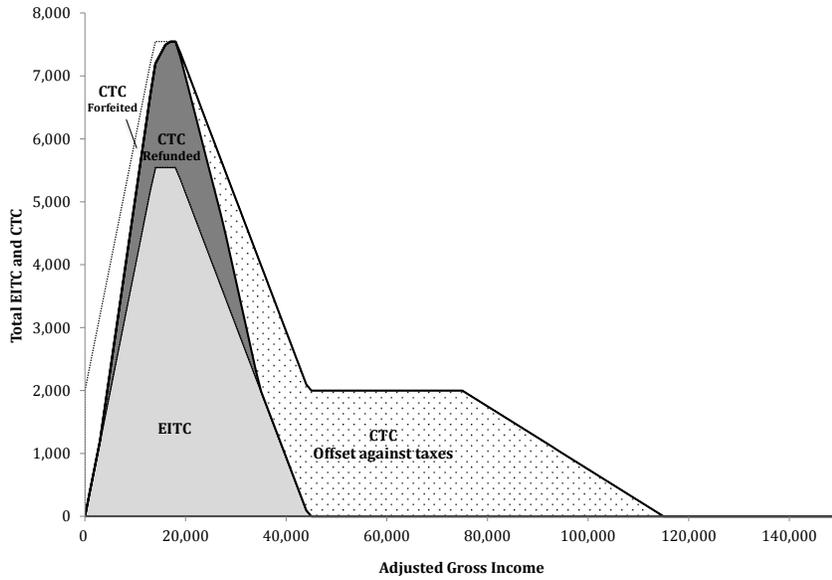
(b) Married joint tax-filers, 2 children
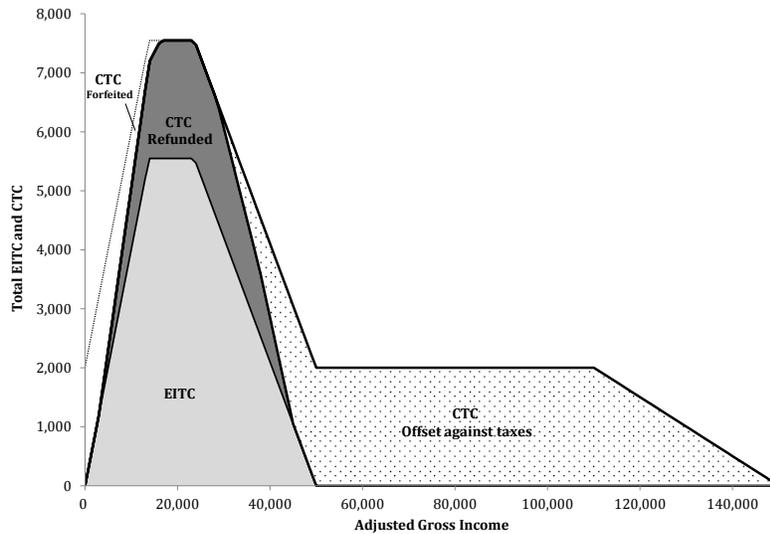
Notes: Figures are assessed for two eligible children and assumes the full amount of the Child and Dependent Care Tax credit that the family is eligible for is offset against federal income tax liability. The refundable portion of the CTC refers to the amount refunded. The non-refundable portion of the CTC refers to the amount offset against federal income tax liability.

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Figure 4. EITC and CTC Outlays (millions of 2014 dollars)
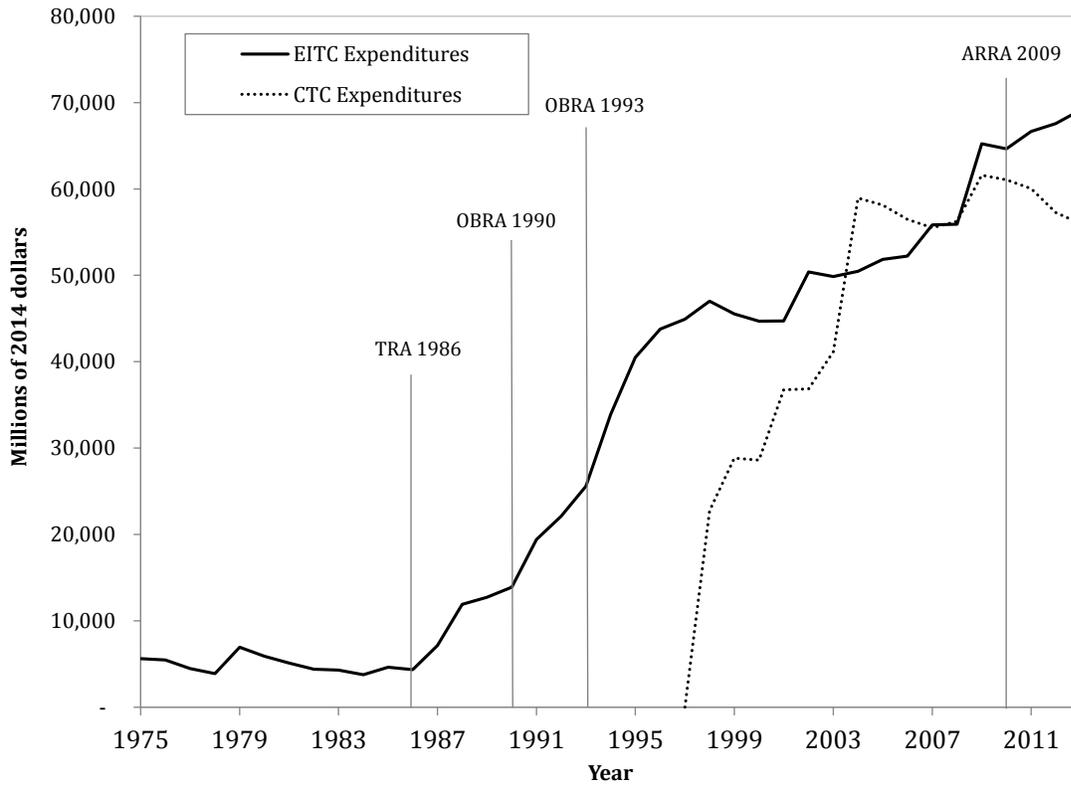
Sources:

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Figure 5. Tax and Transfer Benefits for Universally Available Programs, by income (Single adult with 2 children, 2015)

Figure 6. Effective Marginal Tax Rates, by Income (Single adult with 2 children)

Marginal Tax Rate per $5,000

Universal Tax and Benefit Programs:
Federal income tax, state income tax, payroll tax, SNAP, Medicaid, CHIP, premium assistance subsidies

Federal Income Tax: federal income tax, EITC, and CTC

EITC and CTC

Wages
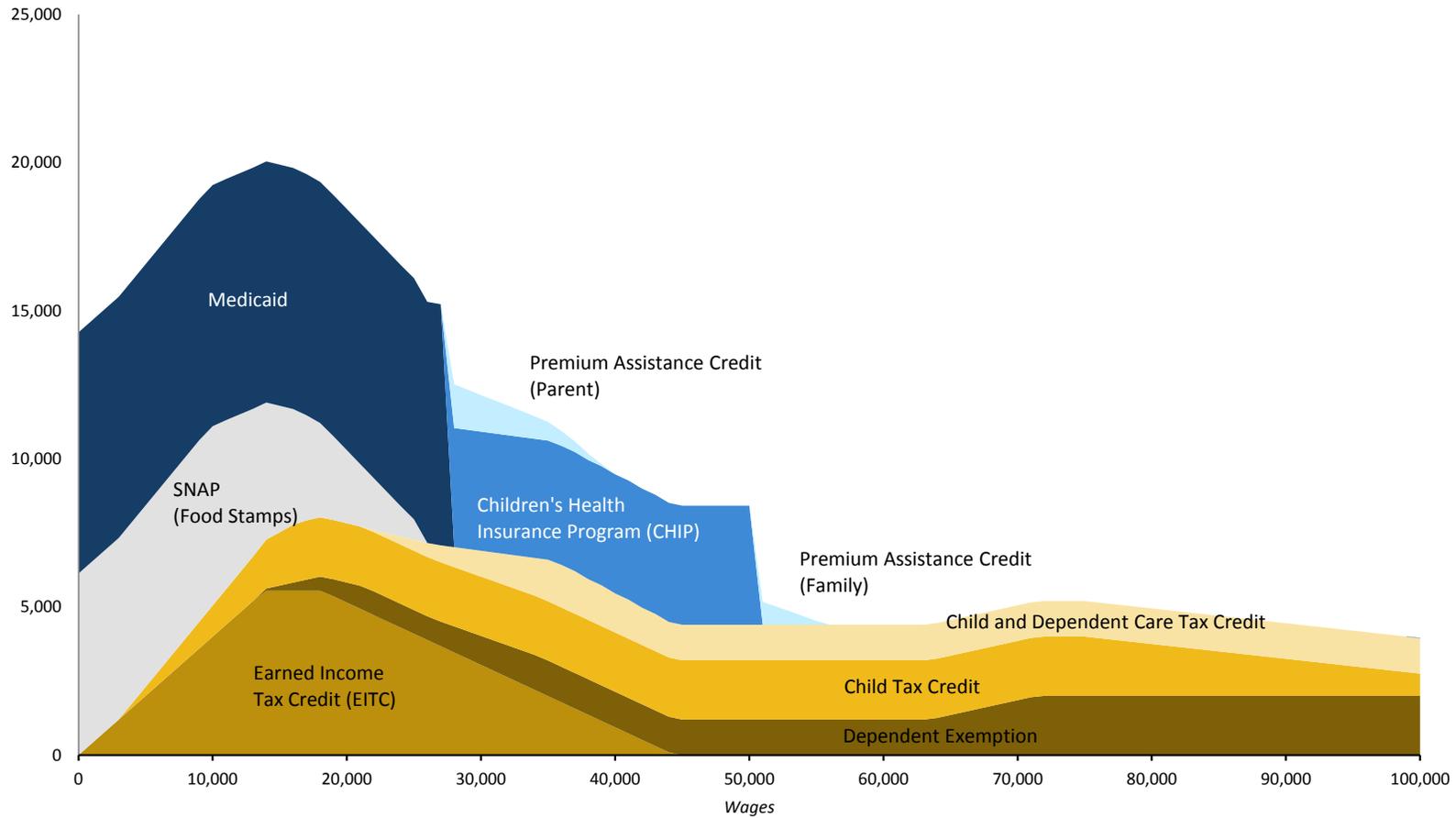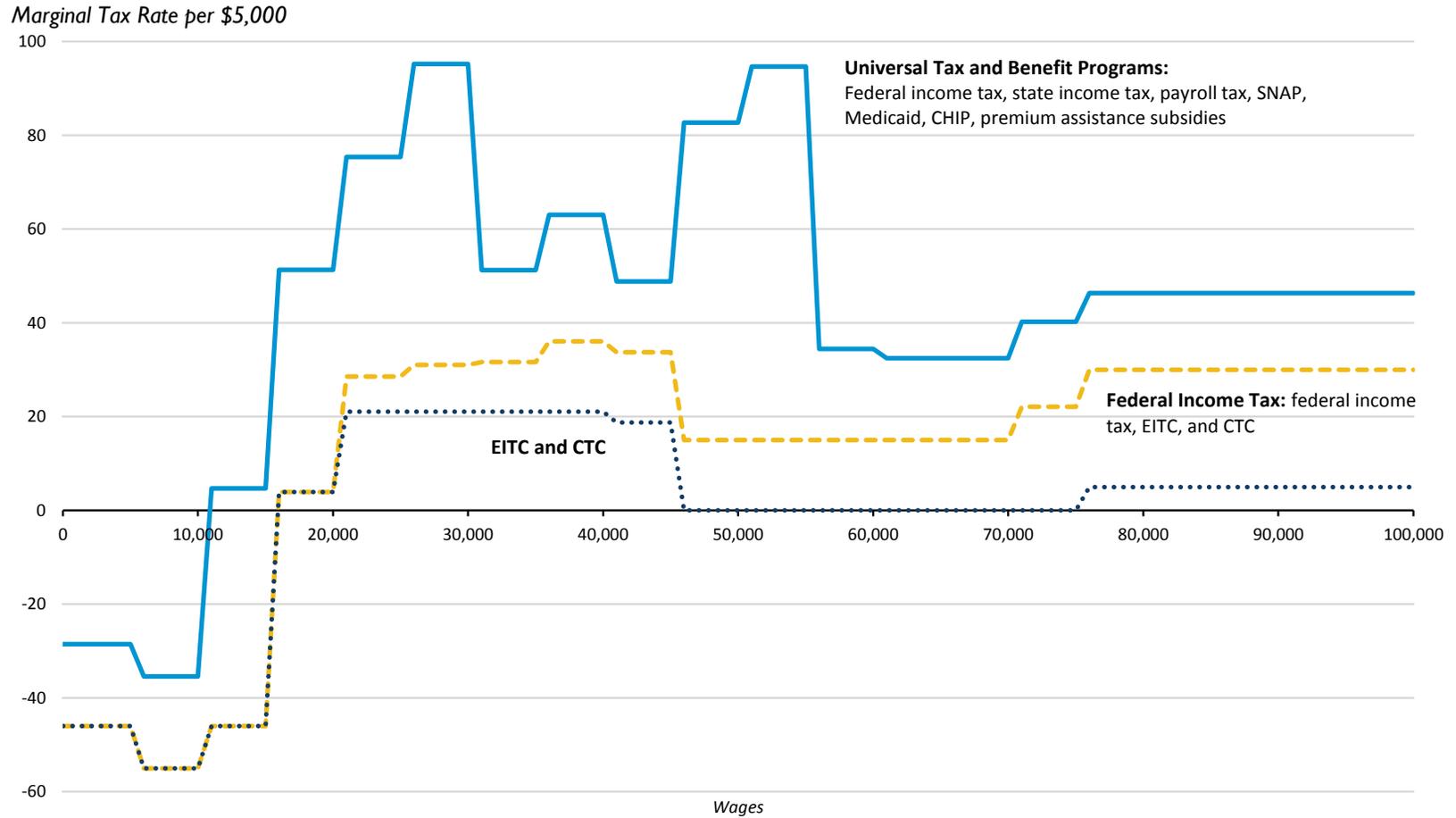
Source: C. Eugene Steuerle and Caleb Quakenbush. Urban Institute. 2015.

Notes: Average effective marginal tax rates facing a single parent with two children living in Colorado. The effective marginal rate is the marginal tax rate is calculated using changes in net income after taxes and transfers given changes in total compensation, which includes employee wages and the employer share of payroll taxes. The tax rate is then smoothed in $5,000 increments.

Figure 7. EITC budget constraint
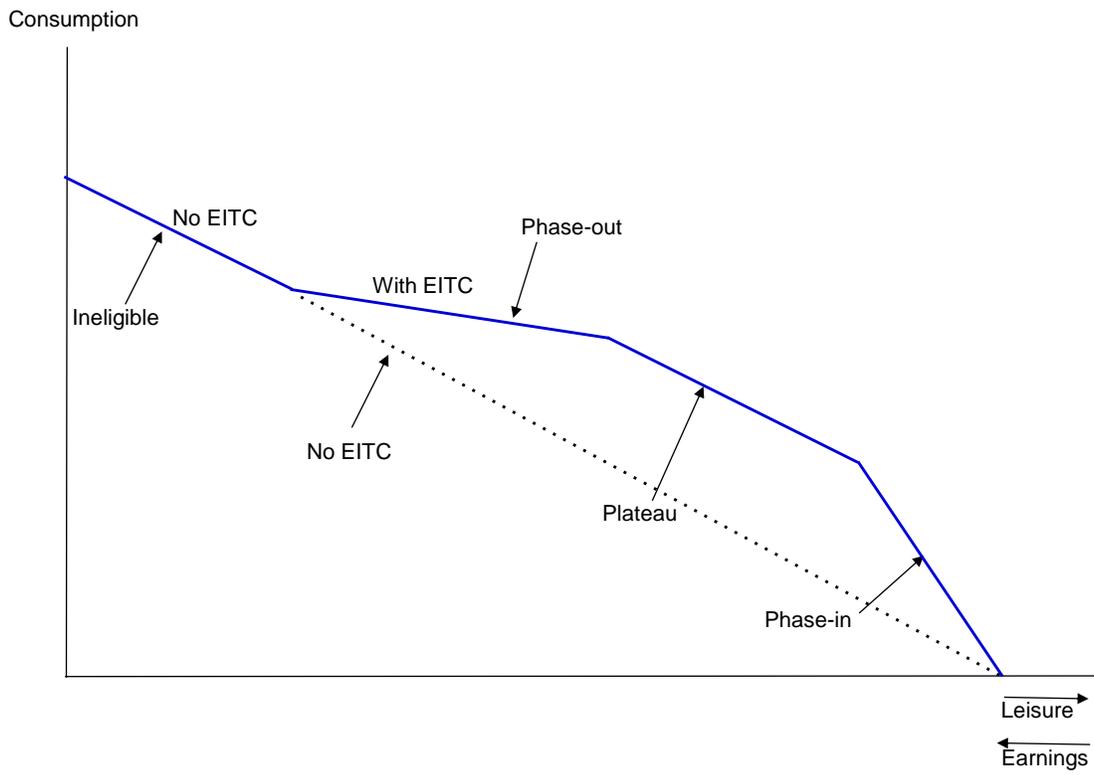
Figure 8. Pre-EITC and Post-EITC Income and Poverty, 2015 tax year

(a) Single filer, no children

(b) Married couple, no children

(c) Single filer, one child

(d) Married couple, one child

(e) Single filer, two children

(f) Married couple, two children
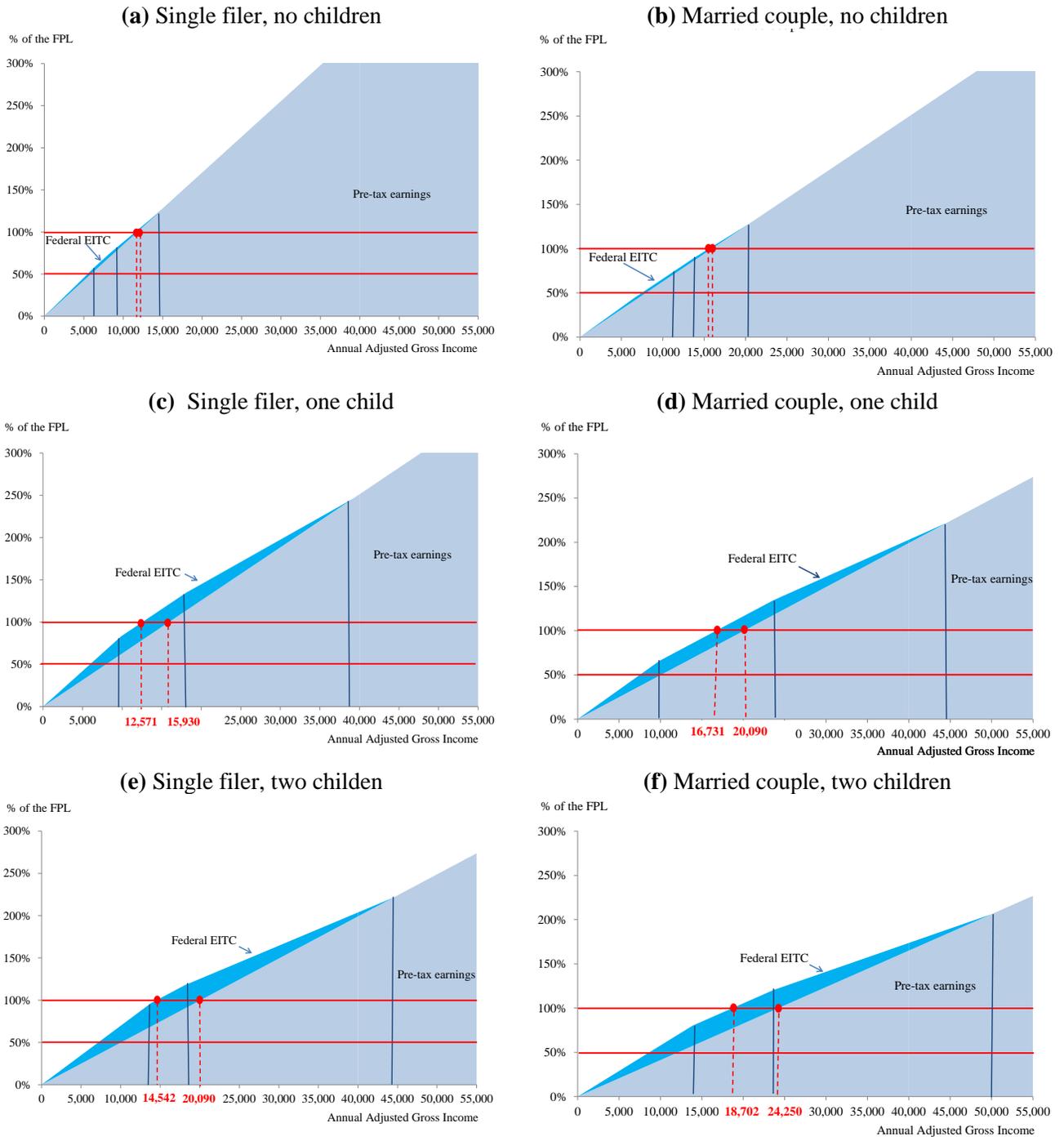
Notes: Solid vertical lines indicate the location of EITC kink points; see Table 1 for exact values. Dashed vertical lines indicate the pre-tax income at which a family reaches the poverty line, with or without the EITC. . In panel a, these are at pre-tax earnings of $11,770 without EITC or $11,518 with EITC; in panel b, they are at $15,930 and $15,565, respectively. Panels a, b, and c reach higher percentages of the poverty line than displayed in the graph

Source: http://www.dhcs.ca.gov/services/medi-cal/eligibility/Documents/ACWDL2015/ACWDL15-14.pdf

Figure 9. Distribution of earnings by filing status and number of children
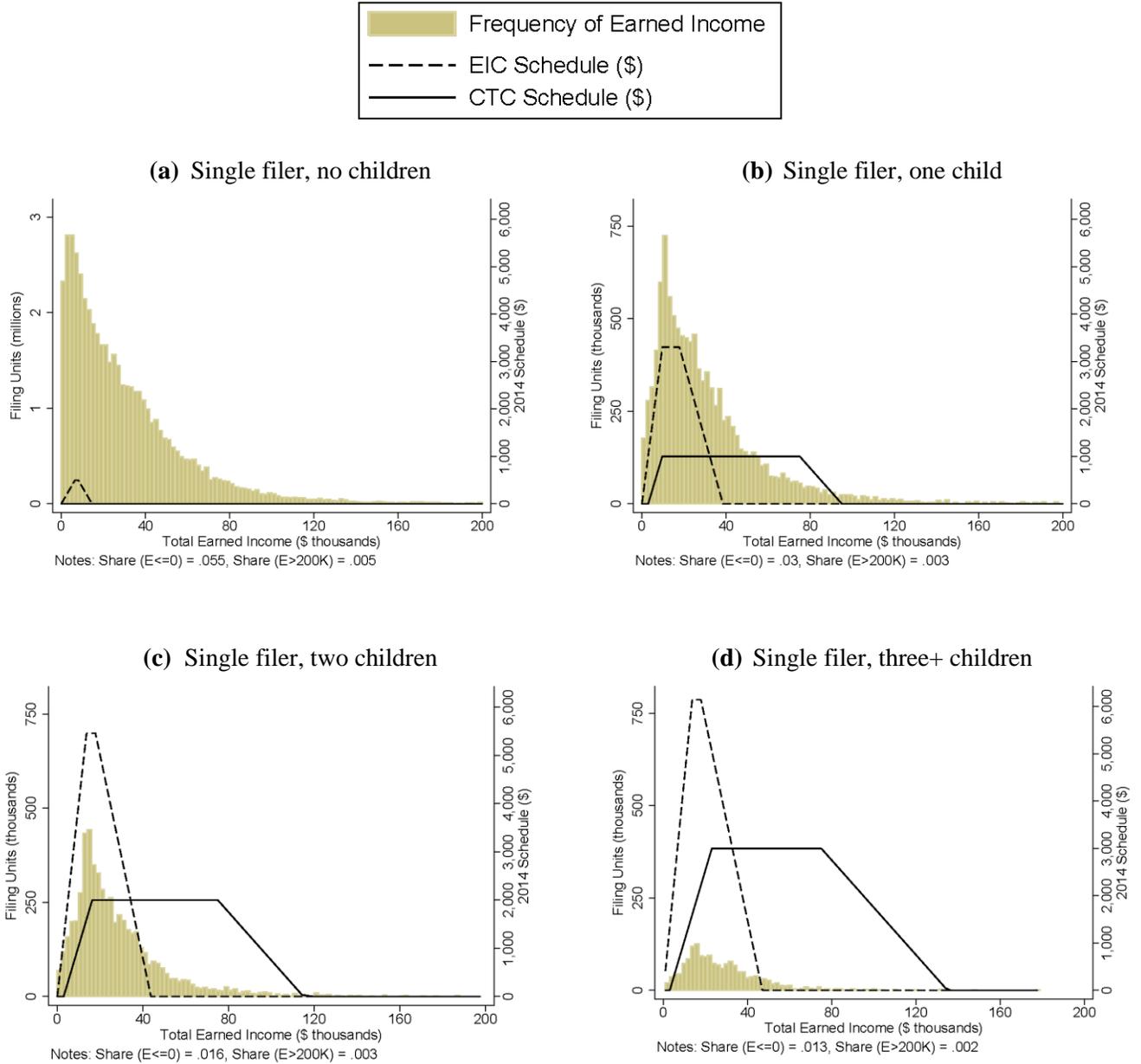
Legend:
- Frequency of Earned Income
- EIC Schedule ($)
- CTC Schedule ($)

(a) Single filer, no children

Notes: Share (E<=0) = .055, Share (E>200K) = .005

(b) Single filer, one child

Notes: Share (E<=0) = .03, Share (E>200K) = .003

(c) Single filer, two children

Notes: Share (E<=0) = .016, Share (E>200K) = .003

(d) Single filer, three+ children

Notes: Share (E<=0) = .013, Share (E>200K) = .002

Notes: The graphs inflation-adjust 2009 income data to 2014 levels and show EITC and CTC schedules from 2014. The sample excludes married couples filing jointly, filing units receiving social security but without children, and those filing late. The left y-axis in panel (a) differs from the left y-axis in panels b-d. Panels a, b, c, and d correspond to 47%, 8%, 4%, and 1% of filing units, respectively.

Source: 2009 Tax Model files created by the Statistics of Income Division of the IRS

Figure 10. Distribution of earnings by filing status and number of children
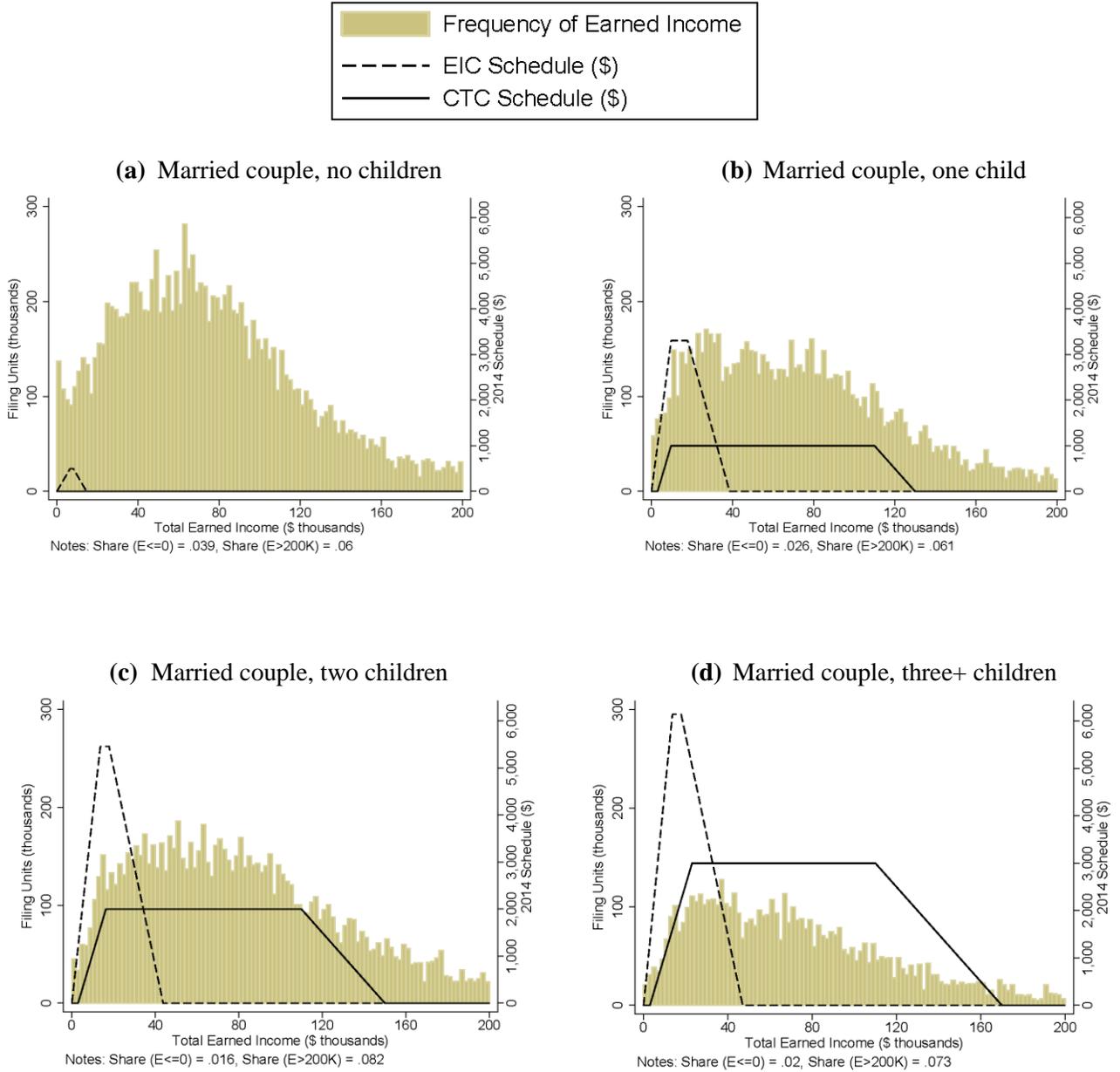
(a) Married couple, no children   (b) Married couple, one child

(c) Married couple, two children   (d) Married couple, three+ children

Notes: The graphs inflation-adjust 2009 income data to 2014 levels and show EITC and CTC schedules from 2014. The sample excludes married couples filing jointly, filing units receiving social security but without children, and those filing late. Panels a, b, c, and d correspond to 18%, 7%, 8%, and 5% of the filing units, respectively.

Source:
2009 Tax Model files created by the Statistics of Income Division of the IRS

Figure 11. Tax Filing Units, EITC Benefits, and Pre-tax Income by Filing Type

(a) All Filing Types

(b) Married couple with children

(c) Married couple without children

(d) Single filer with children

(e) Single filer without children
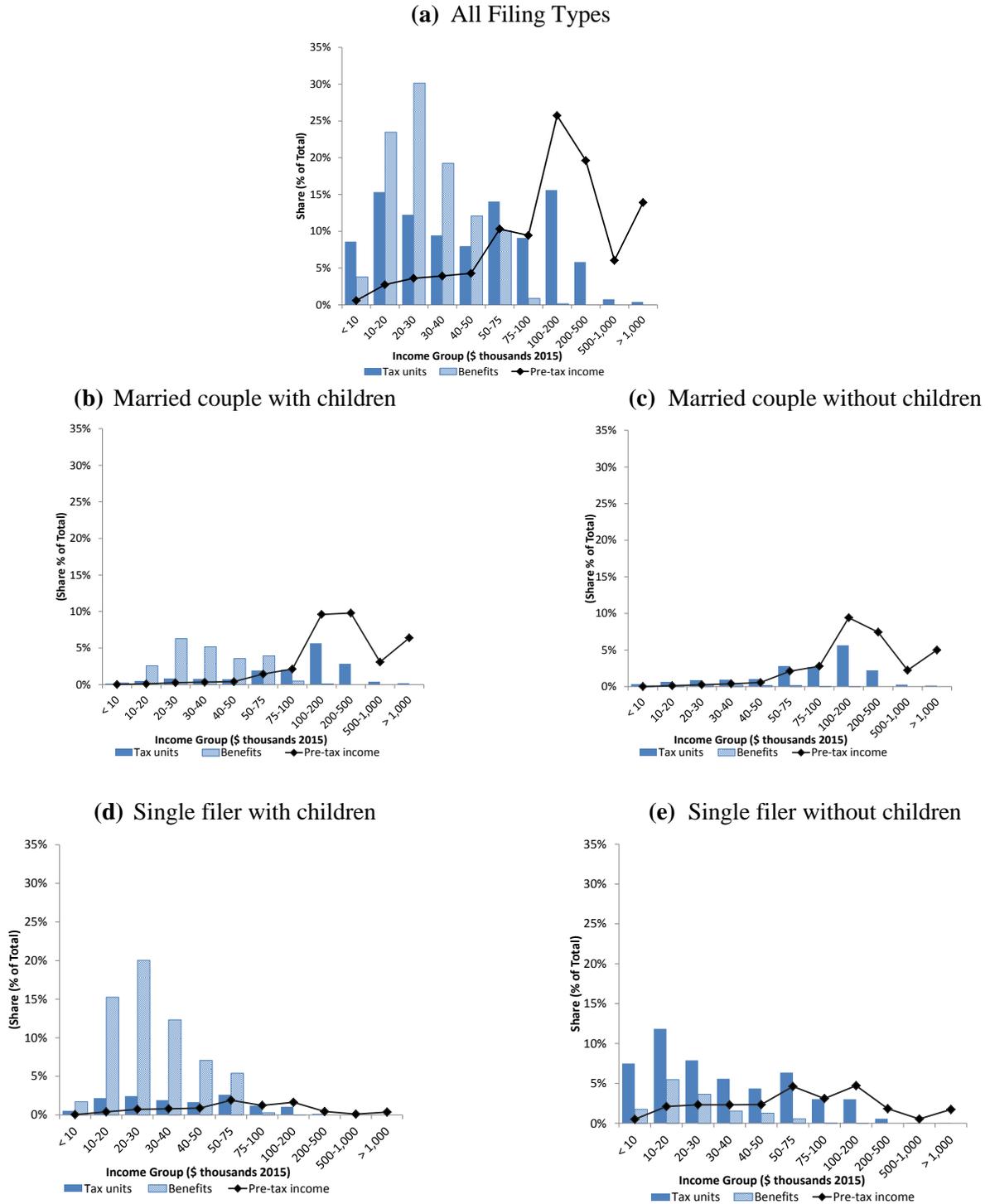
Note: Each of tax units, pre-tax income, and EITC benefits are calculated as a share of the total all tax-filing units.

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0515-1)

Figure 12. Distributional Benefits of EITC, CTC and CTC with High Refundability threshold

(a) All Filing Types

(b) Married couple with children

(c) Married couple without children

(d) Single filer with children

(e) Single filer without children
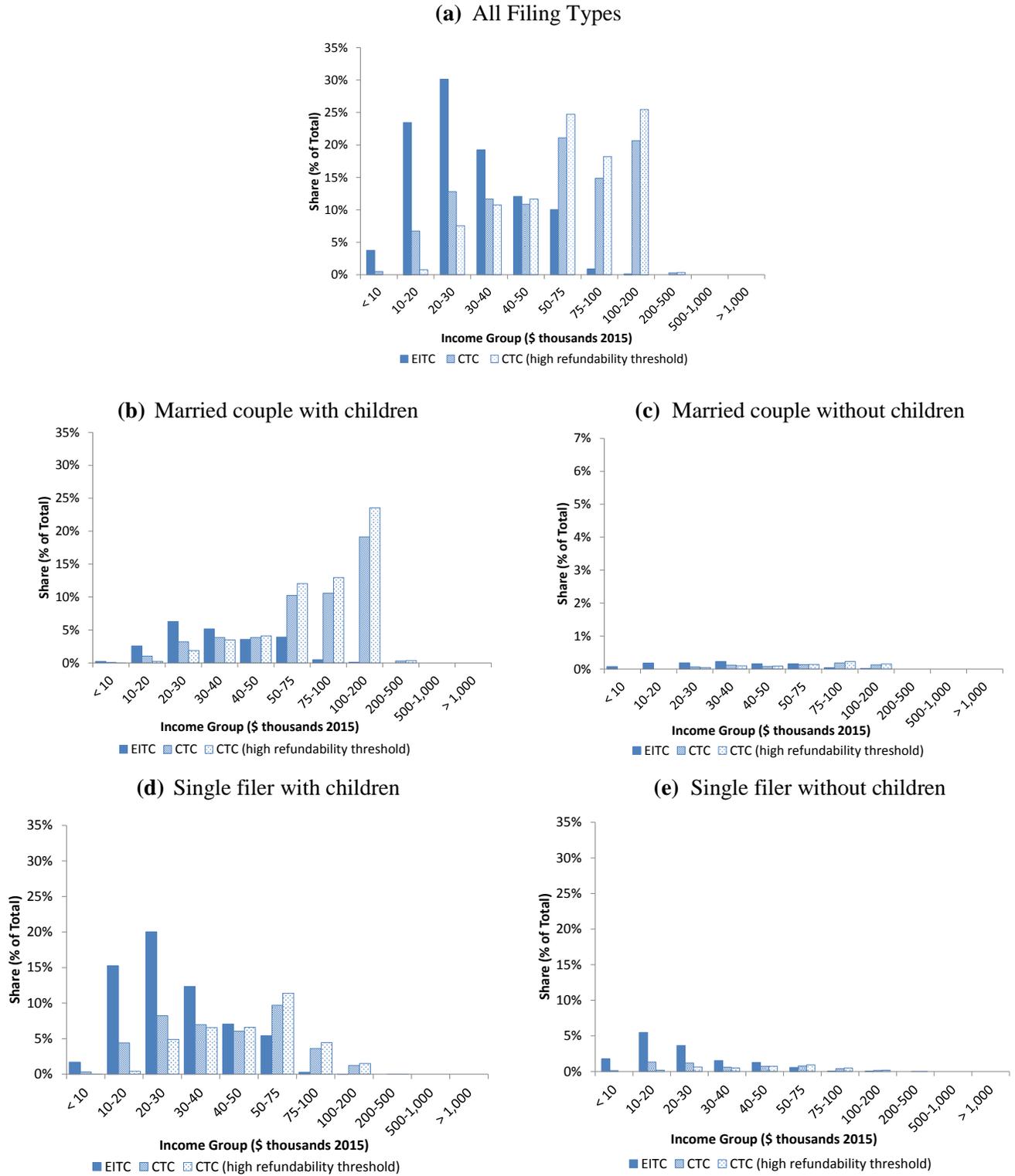
Notes: Tax benefits for each are calculated as a share of all tax-filing units.

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0515-1)

Figure 13. EITC vs. CTC Benefits by Filing Type
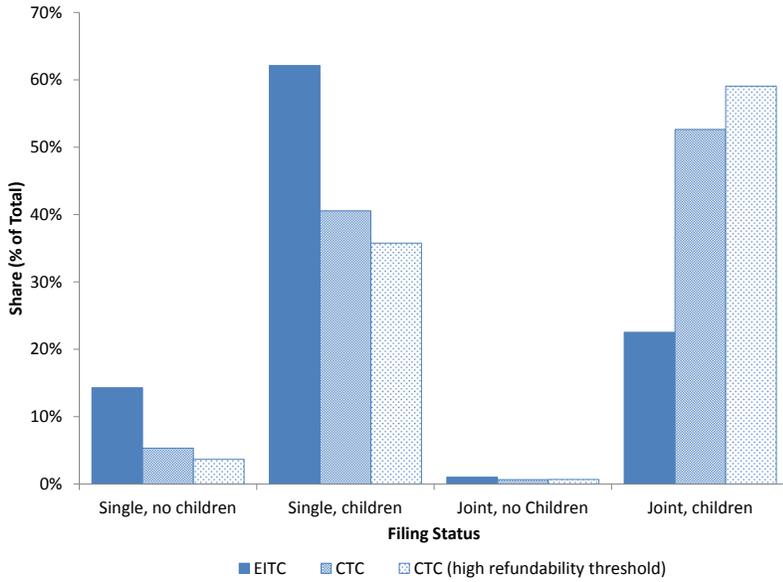
Figure 14. Female employment Rates Over Time
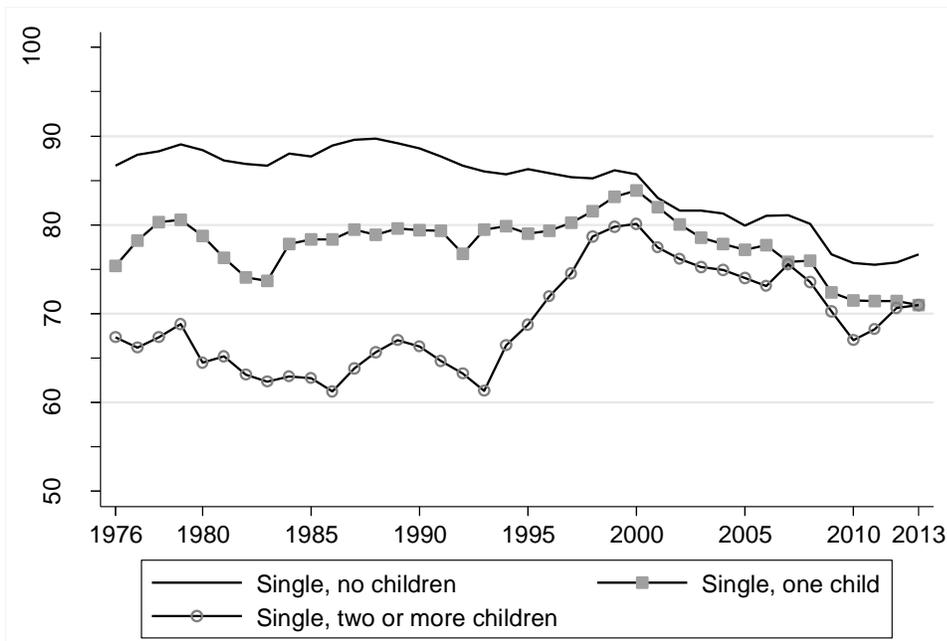
Notes: Includes disabled/students.

Figure 15. Event Time Estimates of the Effect of OBRA93 on Employment of Single Women with Children
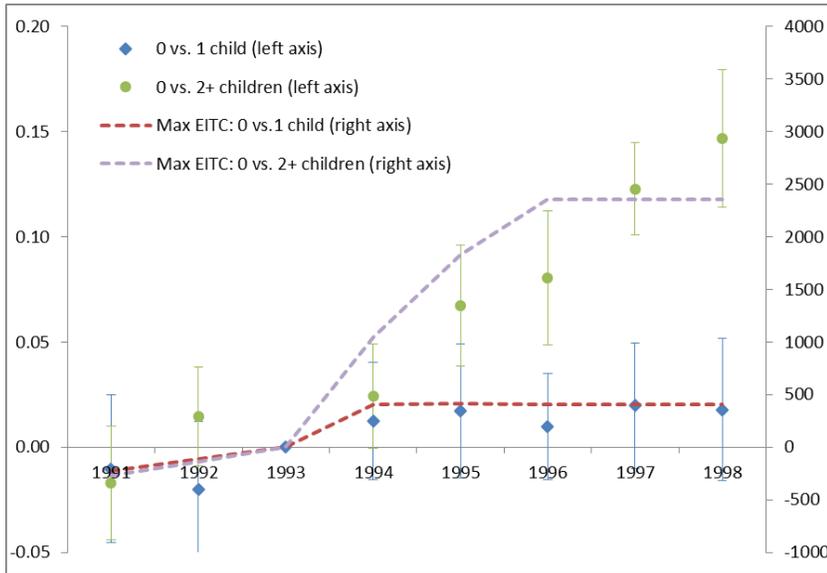
Notes: Figure 7 from Hoynes and Patel (2015). The sample includes single women, ages 24 through 48 with some college education or less from the 1992 through 1999 Current Population Survey (March). Coefficients are estimates from an event study model with single women without children a control, 1993 is the omitted year. The dashed lines show the change in maximum EITC benefits for the treatment minus the control for each one of the years. 95% confidence intervals clustered on state.

Figure 16. Difference-in-difference Estimates of OBRA 93 on After Tax and Transfer Income above Multiples of the Federal Poverty Threshold
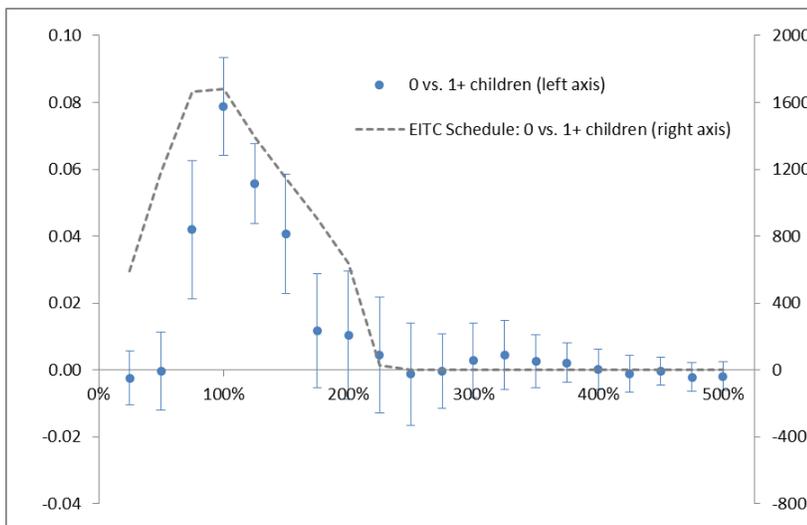

Notes: Figure 11 from Hoynes and Patel (2015). The sample includes single women, ages 24 through 48 with some college education or less from the 1992 through 1999 Current Population Survey (March). Each dot and whisker represents a single regression estimate and 95% confidence interval clustered on state. Each model is a difference-in-difference model comparing women with children to women without children, before and after OBRA93. The dashed line is the weighted change in EITC benefits for families with children versus those without children across the OBRA 93 expansion.

Figure 17. Childless EITC Schedules under current law and proposed alternatives
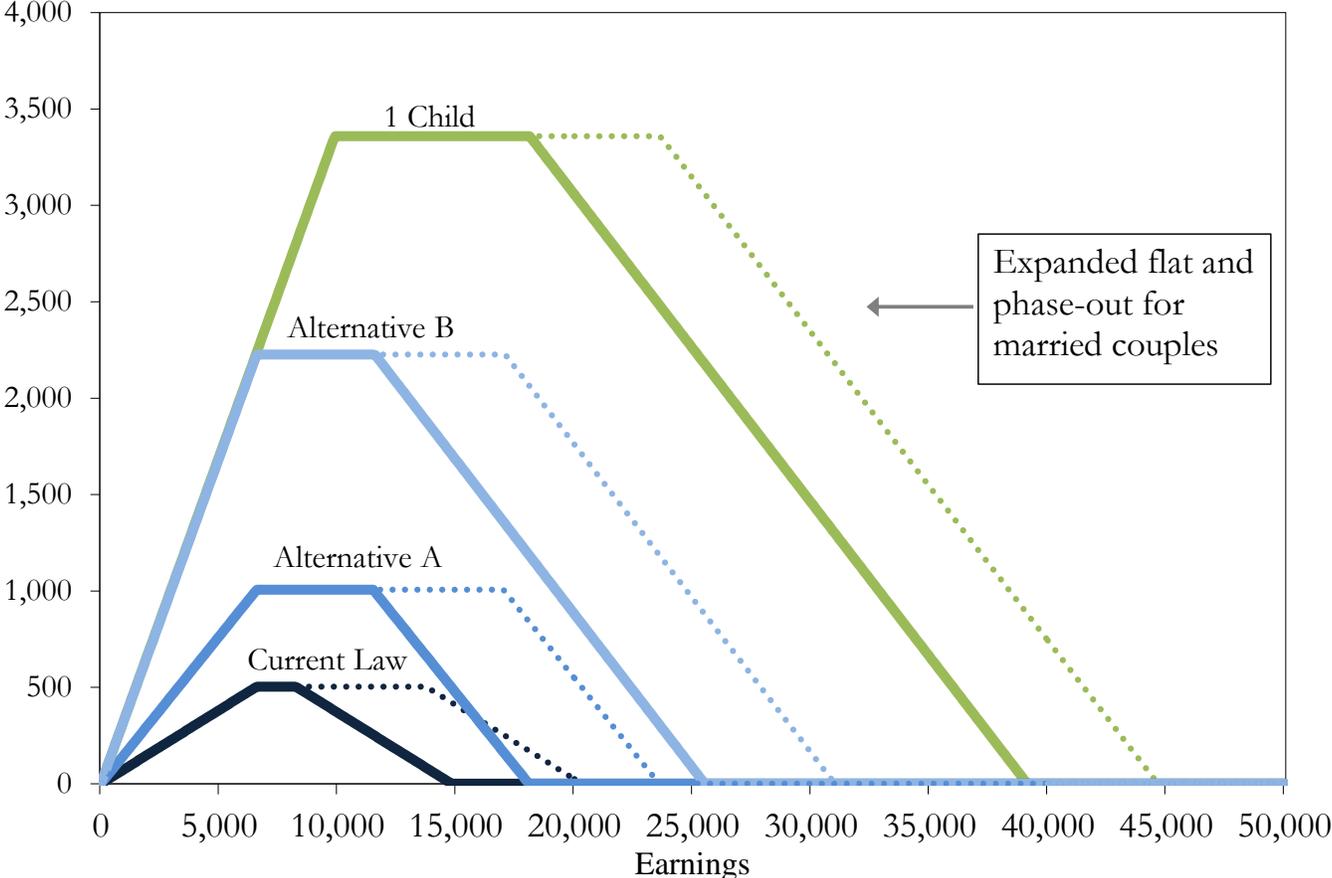
Notes: Alternative A represents President Obama's proposal, and Alternative B represents changes suggested by the authors.

Source: https://www.whitehouse.gov/sites/default/files/docs/eitc_report.pdf , updated to 2015 and authors tabulations.

Figure 18. EITC Current Law Compared to Alternatives A and B
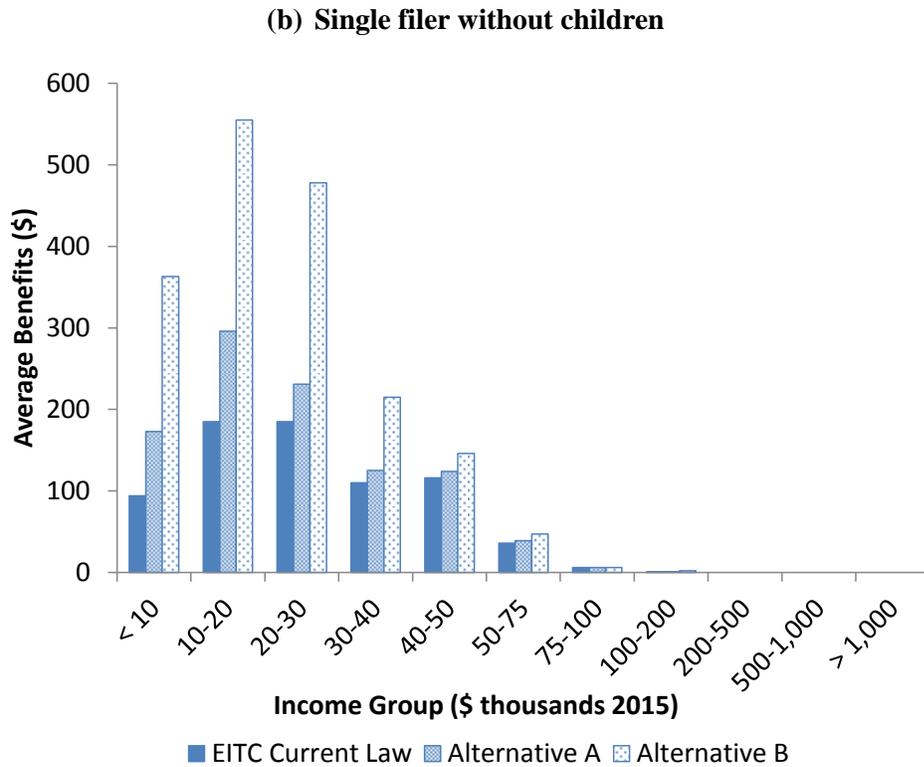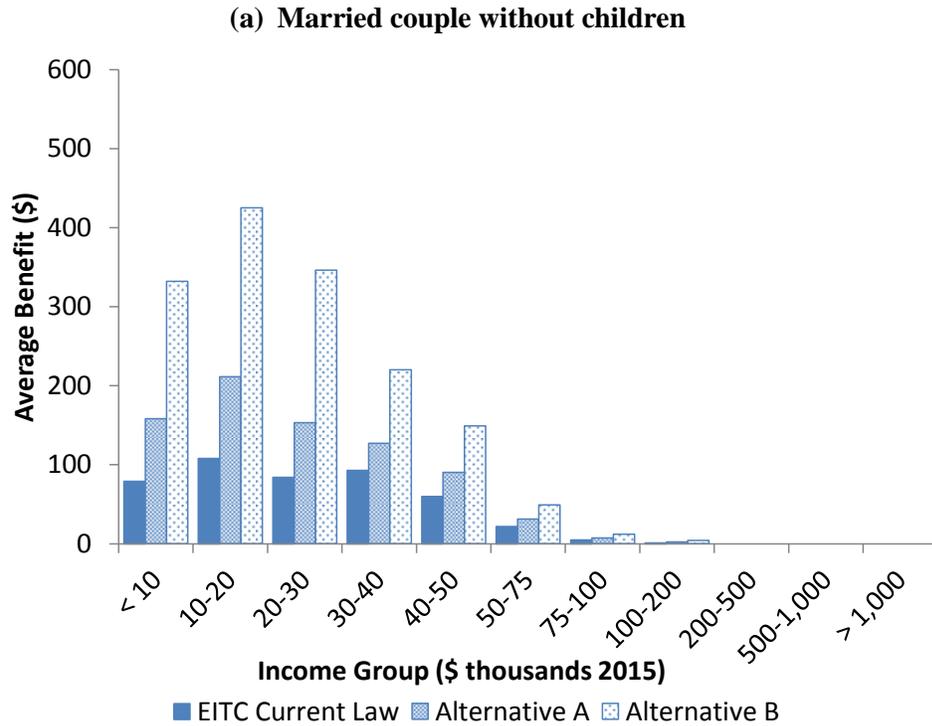
(a) Married couple without children

(b) Single filer without children

Figure 19. EITC Current Law Compared to No Self-Employment Alternative

(a) Distribution by Income Group
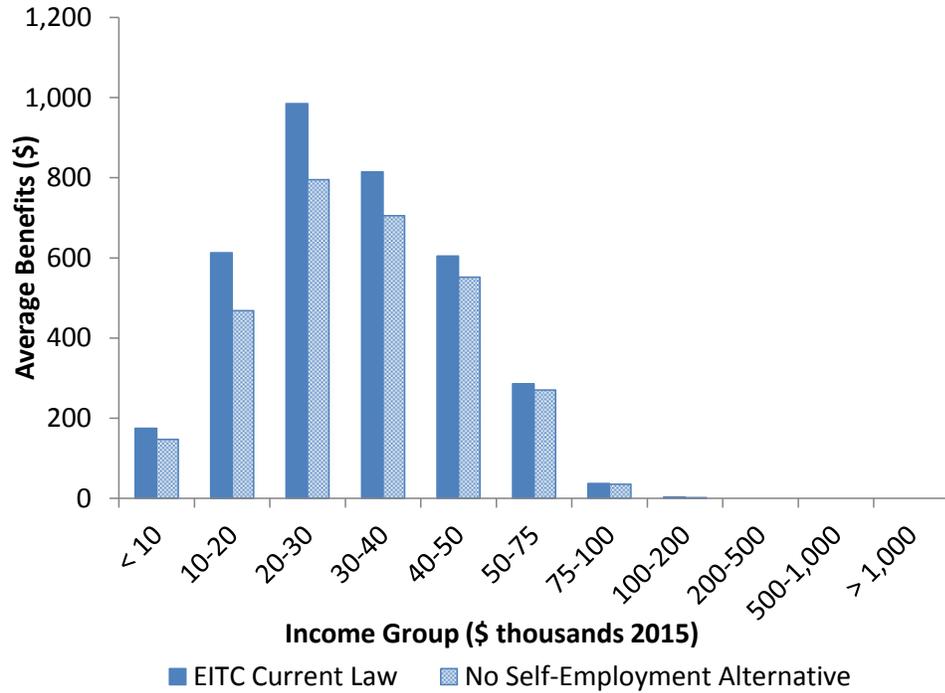
(b) Distribution by Filing Status
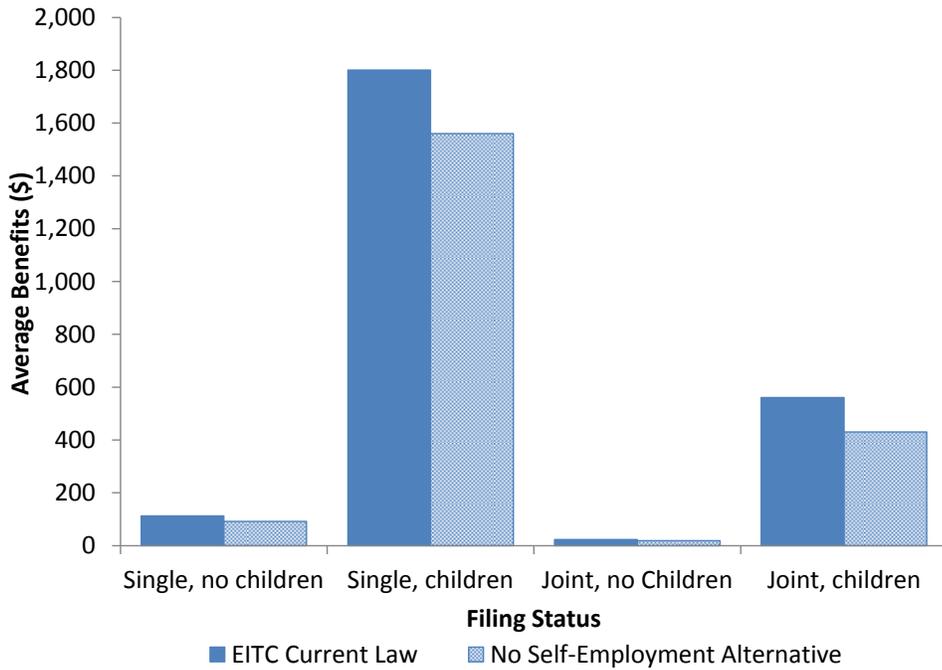
Table 1. Earned Income Tax Credit Parameters, 1975-2015 (selected years), in 2014 dollars

| Calendar year	Credit rate (percent)	Minimum income for maximum credit	Maximum credit	Phaseout rate (percent)	Phaseout range [1] Beginning income	Phaseout range [1] Ending income
2015						
No children	7.65	6,580	503	7.65	8,240	14,820
One child	34.00	9,880	3,359	15.98	18,110	39,131
Two children	40.00	13,870	5,548	21.06	18,110	44,454
Three children	45.00	13,870	6,242	21.06	18,110	47,747
2014						
No children	7.65	6,582	504	7.65	8,238	14,821
One child	34.00	9,874	3,357	15.98	18,112	39,120
Two children	40.00	13,866	5,546	21.06	18,112	44,448
Three children	45.00	13,866	6,240	21.06	18,112	47,740
2009						
No children	8.44	6,587	504	7.65	8,242	14,829
One child	37.51	9,875	3,358	15.98	18,117	39,129
Two children	44.13	13,869	5,548	21.06	18,117	44,460
Three children	49.65	13,869	6,242	21.06	18,117	47,753
2003 [1]						
No children	10.09	6,582	504	7.65	8,231	14,813
One child	44.85	9,880	3,360	15.98	18,111	39,132
Two children	52.76	13,863	5,545	21.06	18,111	44,442
1996						
No children	7.65	6,583	504	7.65	8,237	14,821
One child	34.00	9,875	3,357	15.98	18,112	39,123
Two children	40.00	13,869	5,548	21.06	18,112	44,454
1995						
No children	7.65	6,578	504	7.65	8,231	14,809
One child	34.00	9,883	3,360	15.98	18,114	39,141
Two children	36.00	13,862	4,990	20.22	18,114	42,794
1994						
No children	7.65	6,585	504	7.65	8,231	14,815
One child	26.30	12,758	3,355	15.98	18,107	39,104
Two children	30.00	13,869	4,161	17.68	18,107	41,641
1993						
One child	18.50	13,148	2,433	13.21	20,697	39,104
Two children	19.50	13,148	2,563	13.93	20,697	39,104
1992						
One child	17.60	13,146	2,315	12.57	20,699	39,107
Two children	18.40	13,146	2,419	13.14	20,699	39,107
1991						
One child	16.70	13,141	2,194	11.93	20,705	39,110
Two children	17.30	13,141	2,273	12.36	20,705	39,110
1990	14.00	13,140	1,839	10	20,703	39,099
1989	14.00	13,137	1,839	10	20,695	39,087
1988	14.00	13,133	1,839	10	19,887	37,543
1987	14.00	13,134	1,838	10	14,949	33,337
1985–86	11.00	11,288	1,242	12.22	14,675	24,834
1979–84	10.00	14,679	1,468	12.5	17,615	29,358
1975–78	10.00	17,635	1,764	10	17,635	35,270

Note:

[1] Beginning in 2002, the values of the beginning and ending points of the phase-out range were increased for married taxpayers filing jointly. The values for these taxpayers were $1,000 higher than the listed values values from 2002-2004, $2,000 higher from 2005-2007, $3,000 higher in 2008, $5,000 higher in 2009, $5,010 higher in 2010, $5,080 higher in 2011, $5,210 higher in 2012, $5,340 higher in 2013, $5,430 higher in 2014, and $5,520 higher in 2015.

Sources:

Tax Policy Center. 2013. Earned Income Tax Credit parameters, 1975–2015. Available at [http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?Docid=36]. Posted 3 November.

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Table 2. Child Tax Credit Parameters, 1997-2018

Non-time-varying parameters (in nominal dollars)

Beginning of phase-out range			
Head of Household	75,000		
Married, Filing Separately	55,000		
Married, Filing Jointly	110,000		

Phase-out rate	5%		

End of phase-out range	1 child	2 children	3 children
Head of Household	95,000	115,000	135,000
Married, Filing Separately	75,000	95,000	115,000
Married, Filing Jointly	130,000	150,000	170,000

Time-varying parameters (in 2015 dollars)

Year	Max. Credit per Child		Refundability		
	($ Nominal)	($ 2015)	Rate	Threshold ($ Nominal)	Threshold ($ 2015)
1997	500	742	n/a	n/a	n/a
1998	400	584	n/a	n/a	n/a
1999	500	717	n/a	n/a	n/a
2000	500	695	n/a	n/a	n/a
2001	600	808	0.1	10,000	13,461
2002	600	795	0.1	10,159	13,461
2003	1,000	1,295	0.1	10,391	13,461
2004	1,000	1,266	0.1	10,630	13,461
2005	1,000	1,228	0.15	10,960	13,461
2006	1,000	1,182	0.15	11,388	13,461
2007	1,000	1,156	0.15	11,649	13,461
2008	1,000	1,108	0.15	8,500	9,421
2009	1,000	1,106	0.15	3,000	3,319
2010	1,000	1,090	0.15	3,000	3,271
2011	1,000	1,064	0.15	3,000	3,193
2012	1,000	1,038	0.15	3,000	3,113
2013	1,000	1,020	0.15	3,000	3,061
2014	1,000	1,005	0.15	3,000	3,014
2015	1,000	1,000	0.15	3,000	3,000
2016	1,000	1,000	0.15	3,000	3,000
2017	1,000	1,000	0.15	3,000	3,000
2018	1,000	1,000	0.15	13,461	13,461

Notes: Inflation for 2018 was calculated using the 2015 CPI.

Sources:
Congressional Research Service. 2014. The Child Tax Credit Current Law and Legislative History. [Available at https://www.fas.org/sgp/crs/misc/R41873.pdf]
US Bureau of Labor Statistics (BLS). 2014. Table 24. Historical Consumer Price Index for All Urban Consumers (CPI-U), 74. December to December changes.
CPI Detailed Report December 2014. [Available at http://www.bls.gov/cpi/cpid1412.pdf.] Posted December.

Table 3. Childless Filer Proposals

Parameters	2015 Current Law	2015 Obama Proposal	2015 Hoynes-Rothstein
Phase-in rate	7.65%	15.30%	33.83%
Phase-out rate	7.65%	15.30%	15.98%
Max Credit	$503	$1,007	$2,226
End of phase in range	$6,580	$6,580	$6,580
Phase-out starts - single	$8,240	$11,500	$11,580
Phase-out ends - single	$14,820	$18,080	$25,510
Phase-out begins - married	$13,740	$17,000	$17,080
Phase-out ends - married	$20,320	$23,580	$31,010
Eligible ages	25-64	21-66	21-64

Source: Col C from https://www.whitehouse.gov/sites/default/files/docs/eitc_report.pdf, updated to 2015.