

***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

*Stephen D. Holt
Holt & Associates Solutions*

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Introduction

The evolution of federal and state anti-poverty policies over the past two decades has resulted in the availability of essential assistance to households trying to support themselves in lower-wage jobs. The effectiveness of income support may be diminished, however, in two significant ways. First, low-income working households may not be taking advantage of the array of programs for which they are eligible. Second, the programs they do utilize, in combination with each other and the tax system, can have the unintended consequence of negating much of the benefit of increased earnings from higher-paying work.

This report examines income support in Wisconsin in 2000, looking first at the theoretical effectiveness of available programs. Using a data set matching tax, wage, and benefit program administrative files, the report then measures actual participation in those programs and estimates the exposure of households to high marginal effective tax rates that reduce the return on increased income. The report concludes by looking at the policy implications of the findings and identifying questions for additional research that could increase understanding of this issue.

¹ This report incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

“Making Work Pay”: Then and Now

As federal and state efforts to ameliorate poverty evolved into the 1980's, traditional concerns about the disincentive effects of welfare policies on labor force participation began to be shared by a wider range of the political spectrum. Both policy analysts and welfare recipients recognized it often did not pay to go to work. The loss of cash assistance and other benefits (such as Medicaid) could mean that a person would be worse off for getting a job. These losses – either because eligibility had depended on not working or because counting the new income reduced or eliminated assistance – combined with the imposition of positive tax liabilities to result in the equivalent of a loss in household resources. This combined effect can be expressed as the marginal effective tax rate (or MTR); that is, the percentage of additional earnings that is lost through reduction in benefits or imposition of taxes. For many trying to make the welfare to work transition, the MTR well exceeded 100%.

By the 1992 presidential election, the idea of “making work pay” had assumed dominance.² In his first State of the Union address, President Clinton declared:

The new direction I propose will make this solemn, simple commitment: by expanding the refundable earned income tax credit, we will make history; we will reward the work of millions of working poor Americans by realizing the principle that if you work 40 hours a week and you've got a child in the house, you will no longer be in poverty.

Congress soon enacted the largest in a series of expansions of the federal Earned Income Tax Credit (EITC).³

The EITC became the largest cash assistance program for low-income households.⁴ Its negative MTR in the phase-in range helped offset the disincentives associated with other programs (Ellwood, 2001). Multiple reviews of the effects of this centerpiece “making work pay” policy have generally found a positive impact on labor force participation over the credit's phase-in range and evidence of its effectiveness in reducing poverty.⁵ Moreover, even before the 1993 expansion, the rate of participation among those eligible was notably higher than in other income assistance programs (Scholz, 1994).

² A review of the strategy by one of its principal architects is in Ellwood (2000).

³ Excellent reviews of the political origins and evolution of the EITC may be found in Ventry (2001) and Hotz and Scholz (2003).

⁴ In 1996, federal EITC expenditures (\$28.8 billion) were for the first time larger than combined federal and state spending for AFDC (\$28.2 billion). In that same year, federal Food Stamp benefits totaled \$23.5 billion, and Supplemental Security Income payments totaled \$24.1 billion. (2004 Green Book).

⁵ A comprehensive survey of the literature is in Hotz and Scholz (2003).

There have been other policy changes with a “making work pay” orientation over the past several years. These have included extended Medicaid eligibility, creation of the State Children’s Health Insurance Program, and a dramatic increase in the availability of subsidized child care. To the extent they are utilized, these programs further reduce the overall MTR associated with going to work and increase the ability to support one’s household with low-wage work.

But the mitigation of high MTRs at the lowest rungs of the wage ladder has also had the unintended consequence of creating barriers to moving up that ladder. The EITC and the other programs are not universal; the benefits still phase out, and some end abruptly at an income eligibility cap (known as a cliff effect). The programs provide a higher level of benefits; having more to phase out requires reducing benefits at a more aggressive rate. These problems make it more difficult for working households to be more economically secure by working more or earning more.⁶

Standard economic theory would predict a negative relationship between income assistance phase-out and labor force participation from both income and substitution effects. The studies of the impact of the EITC on work have indeed found some evidence that the credit has had some negative effect among those already in the labor force and in two-earner families.⁷ But the existence of potentially confiscatory MTRs among lower-income households is not widely understood, and little is known about their incidence.

Similar Studies

Relatively little research has been conducted regarding the combined effects of federal and state tax and income assistance policies. Giannarelli and Steuerle (1995) used a microsimulation model to calculate the effects of increased earnings on a sample of households receiving Aid to Families with Dependent Children. Dickert, Houser, and Scholz (1994) used a similar microsimulation technique with a broader sample. Wilson and Cline (1994) had access to a state data set in Minnesota that matched tax return and benefits information (cash transfer programs only) for a stratified sample of households.⁸ Acs, *et al.* (1998)

⁶ A key non-monetary issue (not being addressed here) is the impact of the EITC on marriage and living arrangements (Ellwood, 2001; Holtzblatt and Rebelein, 2001).

⁷ The negative labor force participation effects -- seen in the credit phase-out range and to some extent with the flat rate between phase-in and phase-out (Hotz and Scholz, 2003) -- were smaller than the positive ones seen in the phase-in range. Alstott (1995) cautions that the usual analysis made by economists discounts positive effects such as a parent being able to work less and spend more time with her children. Eissa and Hoynes (2004) found that the EITC is, in effect, subsidizing married mothers to stay at home.

⁸ Wilson (2000) looks at more narrowly defined cumulative programmatic effects in the context of Minnesota’s two-tier state EITC.

examined multi-program MTRs for households receiving Temporary Assistance for Needy Families assistance in twelve states. Sammartino, Toder and Maag (2002) looked at multi-program MTRs for Pennsylvania households.⁹ Each of these studies found that households receiving income assistance could experience high cumulative MTRs. None quantified that population.

Data Set

This analysis is based on a data set that matches benefits receipt information with unemployment insurance wage records and state income tax records for Wisconsin in 2000. The benefits programs included are Medical Assistance (traditional Medicaid), BadgerCare (State Children's Health Insurance Program), Wisconsin Shares (subsidized child care), Food Stamps, and Wisconsin Works (Temporary Assistance for Needy Families cash assistance).

The data set contains over 3,200,000 records, 72% with tax but no benefits data, 13% with both tax and benefits information, and 15% with benefits data only.¹⁰

Key Findings

The following were found in Wisconsin in 2000:

Available programs improved the viability of household support from lower-wage work

- With full-time, year-round work at minimum wage (\$5.15 an hour), a single parent with two children could finance 94% of a minimally adequate budget¹¹
- With full-time, year-round work at \$6.25 an hour, a single parent with two children could fully finance a minimally adequate budget
- With each working full-time, year-round at \$6.25 an hour, a married couple with one, two, or three children could fully finance a minimally adequate budget

⁹ Another study focused on lifetime returns to work included analysis of cumulative MTRs (Gokhale, Kotlikoff, and Sluchynsky, 2002).

¹⁰ Unlike the household basis for the tax-only and tax and benefits data, the benefits-only data is for individuals, many of whom are children or other dependents. The matching methodology (see Part E) eventually linked most of those records to adult household heads from all three sources. The file used for analysis contained 47,951 households with benefits-only data, compared to 494,452 individual records.

¹¹ The budget adequate to meet a household's basic needs uses a methodology consistent with that developed by others, including the National Center for Children in Poverty, the Economic Policy Institute, and the Center for Women's Welfare. In 2000, the minimally adequate budget for a single parent in Milwaukee, Wisconsin with two children totaled \$18,730. This figure excludes child care and health insurance costs, because those costs are accounted for on the resource side of the calculation. Detailed information on the minimally adequate budget is in Part C.

Without income support, much higher wages were needed to meet basic household needs

- A single parent with two children not utilizing income support needed \$11.75 an hour (full-time, year-round) and free child care to finance a minimally adequate budget

Marginal effective tax rates from income support programs could be very high, negating much of the benefit from increases in earnings

- Single parents with two children who participated in all programs experienced MTRs well above 50% (*i.e.*, they kept less than 50 cents of each additional dollar earned) at annual incomes from \$12,000 to \$31,000
- The net benefit to those households of moving from a \$6.25 an hour job to one paying \$16.75 an hour would have been less than \$15 a month

There was significant under-utilization of income support programs

- Among one likely eligible population (single parents with two children and incomes under \$18,000), 8% participated in no income support program, and fewer than a third participated in more than three of the five programs under study here
- Among that population, the highest participation was for the Wisconsin Earned Income Tax Credit (80%)
- Approximately two-thirds received subsidized health insurance, half claimed Food Stamps, and just over a third used subsidized child care
- Among the same population, only 22% claimed the state Homestead Credit

Even with low program utilization, several households experienced high marginal effective tax rates

- Nearly 5,000 households¹² were at immediate risk of significant resource losses due to program “cliff effects”
- Approximately 76,000 lower-income households were subject to MTRs higher than those experienced by middle-income households
- Over one-fifth of lower-income single-headed households with children were subject to high MTRs

¹² These data are drawn from 2,769,493 records, each representing a “household.” This exceeds the 2,086,304 households found in the 2000 Census. There are three primary explanations for the discrepancy: 1) “household” here is tied to tax filing status rather than the Census definition; 2) the Census is a static, point-in-time measure, and this file includes households from throughout calendar year 2000; and 3) non-resident households with a Wisconsin earner are included in the overall household count (these non-resident households are *not* included in the counts of high MTR incidence, because they were not eligible for the benefits that generate those rates).

Policy Implications

The following derive from the project's research and findings:

- Analysis of income support policy must include reference to a reasonable threshold standard such as a minimally adequate household budget
- Enacted income support policies in Wisconsin in 2000 did well compared to an adequacy standard, but program utilization rates indicated they had been incompletely implemented
- The tax system has proven it can be an effective means of delivering support to eligible populations if there is adequate publicity and few barriers to filing claims
- Elevated marginal effective tax rates result from the combined effect of several programs, and there are ameliorative options available within each program
- However, the uneven incidence of elevated marginal rates and their association with participation in multiple programs argue for more targeted approaches

Detailed Analysis

This report includes the following sections providing more detailed analysis:

- A. Structural Elements of Income Support Programs for Low-Income Working Households
- B. Payroll and Income Tax Liabilities of Low-Income Working Households
- C. Capacity for Self-Support Through Low-Wage Work
- D. Marginal Effective Tax Rates for Low-Income Working Households
- E. Methodology for Creating Matched Income Support and Tax Data Set
- F. Participation in Income Support Programs
- G. Incidence of Elevated Marginal Effective Tax Rates among Low-Income Working Households
- H. Policy Implications
- I. Questions for Additional Research

Conclusion

As measured in Wisconsin in 2000, the effectiveness of income support programs designed to make work pay is limited by incomplete and uneven utilization of those programs. Households that do avail themselves of federal and state income support assistance expose themselves to high marginal effective tax rates that can negate the benefits of increased earnings. The actual incidence of exposure to such rates is depressed by the low participation rates. Nonetheless, several thousand households likely saw relatively low returns to working or earning more. Although they were often only minimally able to meet their families' needs, they were effectively taxed at rates higher (and in some cases substantially higher) than much higher-income households. Additional research is needed to determine the effects of this on labor force participation, skills development, and overall economic activity. Yet even with what is known now, there is a need for policy changes that reduce this burden, and several opportunities are available to policymakers.

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**Part A: Structural Elements of Income Support Programs
for Low-Income Working Households**

This Part A examines the benefit structures of six income support programs and how they affect a worker's marginal effective tax rate (*i.e.*, the percentage of additional earnings lost through reduction in income supports). The key parameters of two of the programs – the federal Earned Income Tax Credit (EITC) and Food Stamps – are consistent nationally. Two other programs are federally-funded with state-specific characteristics: subsidized child care (Wisconsin Shares), and the State Children's Health Insurance Program

¹³ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

(BadgerCare). There are two additional Wisconsin-specific income support programs, each offered through the tax system: the state EITC, and the Homestead Credit.

The scope of this study is limited to those programs in Wisconsin with relatively widespread distribution. Some households may participate in additional programs that have marginal effective tax rate (MTR) implications, some of which can be quite significant (*e.g.*, subsidized housing). However, including those programs would reduce the applicability of the findings to the general population and would, in most cases, require access to additional data sets. Any MTR effects of the Medicaid program are also excluded because of the availability of BadgerCare.¹⁴

¹⁴ Income and other eligibility limits of Medicaid program can vary widely by state and family circumstances. Although these limits can impose the cliff effect type of MTR, the development of the State Children's Health Insurance Program (as well as some waiver programs) has mitigated those impacts for persons with children. For purposes of this paper, it is assumed that a household with children that loses partial or full Medicaid liability becomes a participant in BadgerCare (thus becoming subject to the MTRs associated with that program).

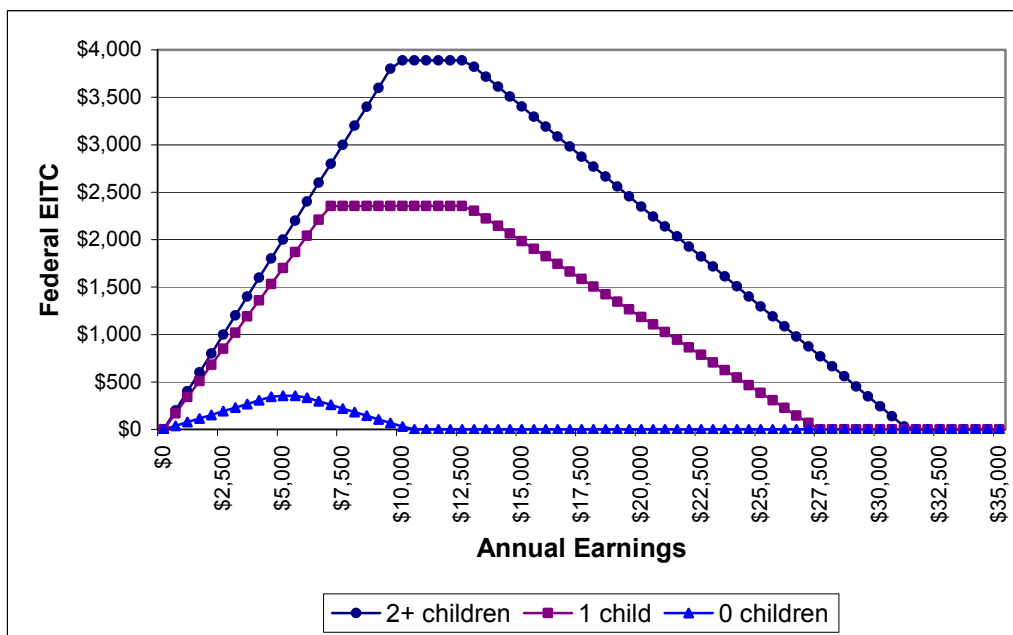
Federal Earned Income Tax Credit

Although administered as part of the federal income tax, the EITC is best considered separately because of its refundability. A refundable credit is one that may be claimed without regard to tax liability. The combination of refundable credits and net tax liability determines the net refund or amount owed.

Unlike most income assistance programs, the maximum EITC is not available to the lowest income claimants. Consistent with the “making work pay” philosophy, the credit phases in as a percentage of earnings. For a person with two qualifying children in 2000, the phase-in rate was 40%, meaning that each additional dollar of earnings provided forty cents in additional EITC. Once the maximum credit is reached (in this case, \$3,888, at an income of \$9,720), the EITC benefit remains flat for a range of income. It then phases out at a constant rate; with two qualifying children in 2000, the phase-out rate was 21.06%. This meant that each additional dollar earned at incomes between \$12,690 and \$31,152 resulted in a twenty-one cent drop in the EITC.

Figure 1 shows the federal EITC that could be claimed in 2000 for each household type (measured at each \$500 increment of earnings):

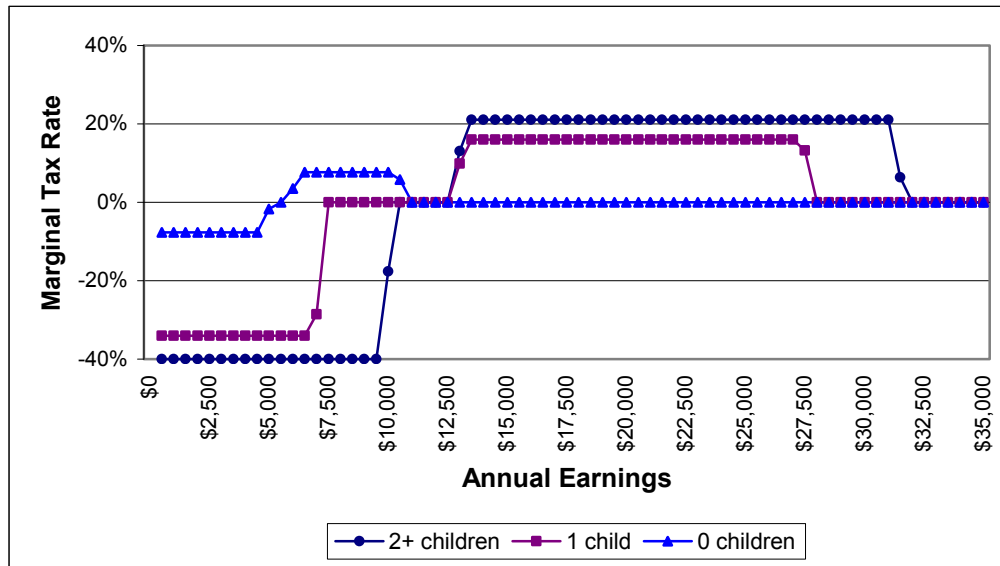
Figure 1. Federal Earned Income Tax Credit Amounts (2000)



The initially rising line for each configuration reflects the credit phase-in range and shows that the program has a *negative* MTR at those lower incomes. There is then for each household type a plateau range (where the MTR is zero) and a phase-out range.

Figure 2 shows the MTR structure for each of the three household types:

Figure 2. Federal Earned Income Tax Credit Marginal Rates (2000)



Food Stamps

The federal Food Stamp program is administered by the states with some variability in program design, but the elements with MTR impacts are fairly consistent across states.

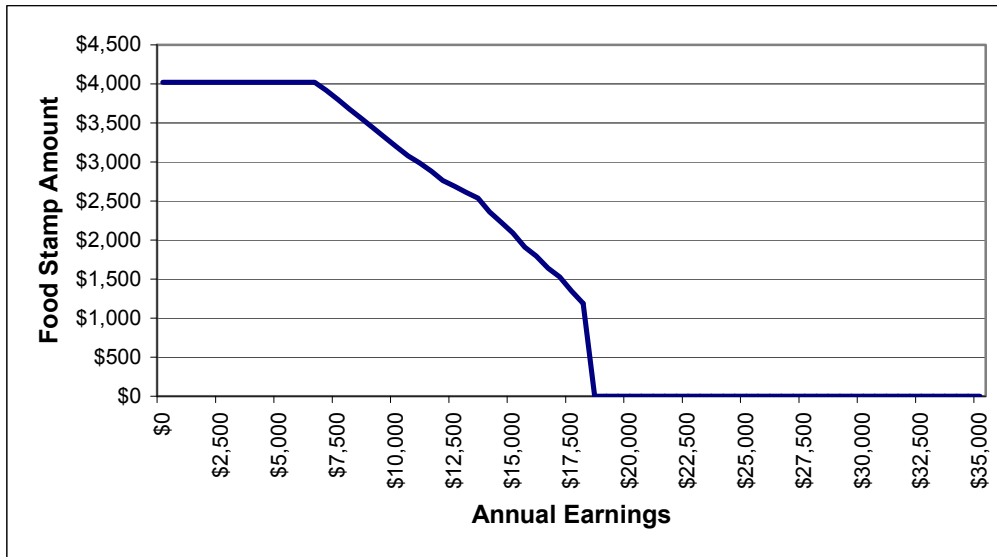
The Food Stamp benefit calculation formula is very complex. Benefits are reduced by 30% of any increase in net income, but because there is also a 20% earned income disregard, the effective phase-out rate is 24%. In addition, one or more of the elements included in the determination of net income can affect the overall program MTR. For example, there are deductions for child care costs and high rent and utility bills. The iterative effects of these features (as well as programmatic interactions for those receiving income-based subsidies for those other costs) can raise the MTR by several percentage points.

Households in the Food Stamp program can also experience an abrupt loss of all benefits if income rises above an eligibility ceiling (referred to as a cliff effect). Although there is a gradual phase-out of benefits associated with the net income component of the benefit calculation formula, there is also a separate gross income test. Households with gross incomes above 130% of the federal poverty level are ineligible for benefits. This point is often encountered well before the net income phase-out is complete.¹⁵

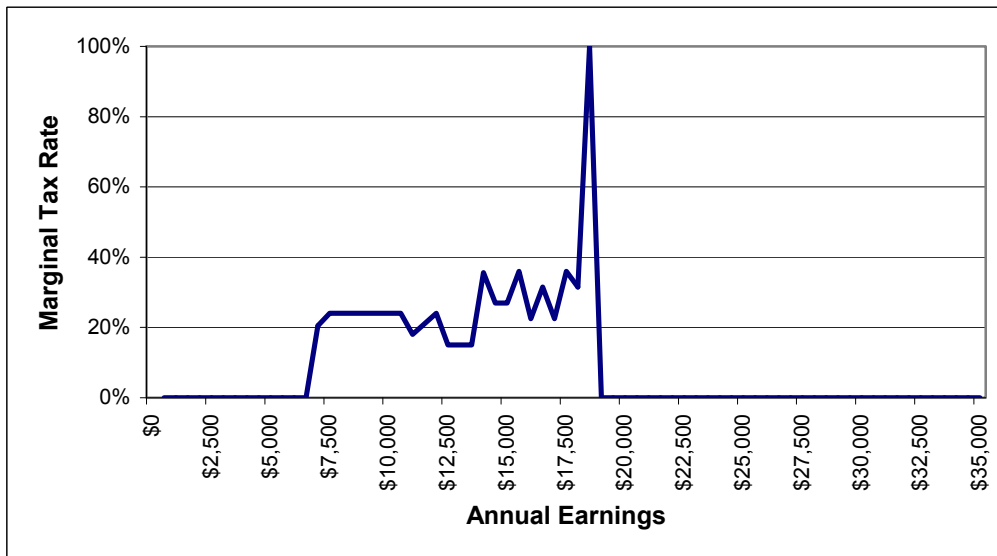
¹⁵ Households in which every member is receiving TANF cash assistance, Supplemental Security Income, or general assistance are not subject to either the gross or net income tests but are considered categorically eligible. Households with an elderly person (or, sometimes, a disabled person) are not subject to the gross income test.

Figure 3 shows the Food Stamp amounts in 2000 for a single parent with two children¹⁶, and Figure 4 shows the Food Stamp MTRs. These examples assume that the parent's child care costs are minimized by participation in Wisconsin's subsidized child care program:

**Figure 3. Food Stamp Amounts
(Single Parent with Two Children, 2000)**



**Figure 4. Food Stamp Marginal Rates
(Single Parent with Two Children, 2000)**



¹⁶ This study uses a single parent with two children as the standard household configuration in examples, both because this household is frequently referenced in anti-poverty policy debates and because its circumstances illustrate the issues well.

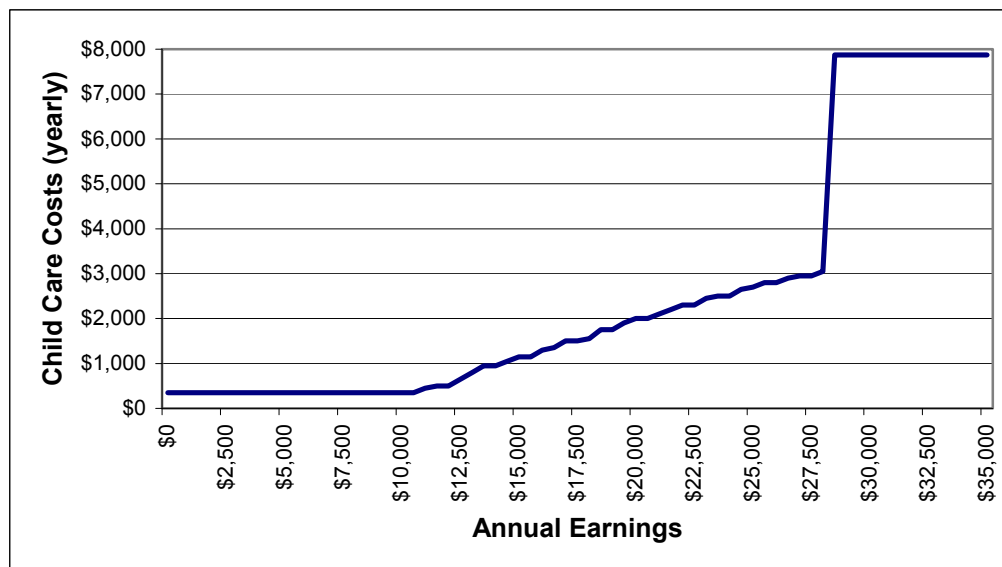
Wisconsin Shares

Wisconsin Shares is the state's subsidized child care program. Families with incomes up to 185% of the federal poverty level may enroll in the program, and they may remain in Wisconsin Shares until household income exceeds 200% of poverty. Almost all participating parents have a co-payment liability. The amount of the co-payment depends on the number of children in subsidized care, the type of care selected, and income. There are stepped co-payment adjustments at each 5% increment of the federal poverty level above 70% (*i.e.*, one rate for incomes between 75% and 80% of poverty, another at incomes between 80% and 85%, and so on). Co-payments are intended not to exceed 12% of a participating family's gross income.

Because Wisconsin Shares has an income eligibility ceiling, there is a large cliff effect associated with the program. The maximum co-payments assessed in the program do not come close to covering the market rate for child care, so a family that loses eligibility can experience a significant loss of net income.¹⁷

Figure 5 shows a participant's annual child care costs in Wisconsin Shares:

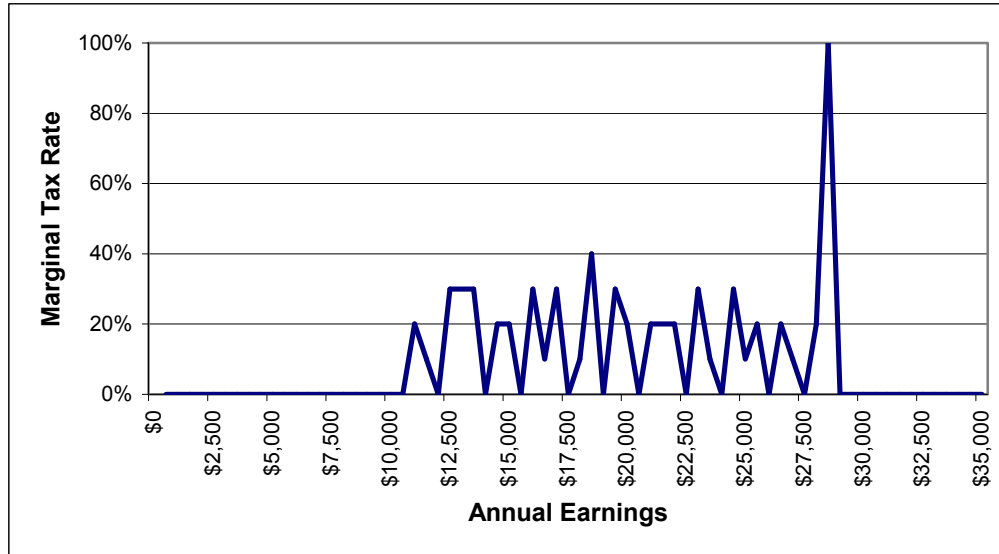
**Figure 5. Child Care Costs with Wisconsin Shares
(Single Parent with Two Children in licensed care, 2000)**



¹⁷ The analysis for this study does presume that a household losing Wisconsin Shares eligibility will switch to less expensive care; however, this merely reduces the magnitude of the cliff effect.

The stepped co-payment schedule means that the MTR associated with Wisconsin Shares can be 0% or a much higher percentage, depending on whether an increase in income brings the household to the next higher step. As seen in Figure 6, the positive rate percentages (prior to the cliff point) were in the 20% to 40% range:

**Figure 6. Wisconsin Shares Marginal Rates
(Single Parent with Two Children in licensed care, 2000)**



BadgerCare

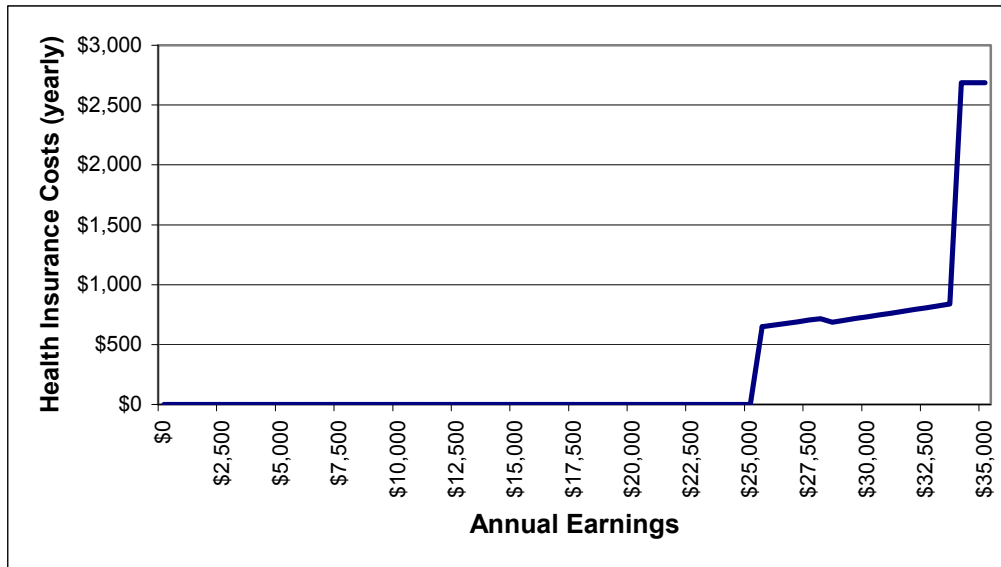
BadgerCare is Wisconsin’s program providing health care coverage to uninsured families. It effectively operates to extend Medicaid benefits to those whose incomes or family circumstances make them ineligible for the standard medical assistance program but who do not have access to an employer-sponsored plan. As with Wisconsin Shares, qualifying families with incomes up to 185% of the federal poverty level may enroll in the program, and they may remain enrolled until household income exceeds 200% of poverty.¹⁸

A family does not incur any cost for BadgerCare until countable family income exceeds 150% of the federal poverty level. Above that threshold, there is a premium equal to a percentage of income (3% in 2000).

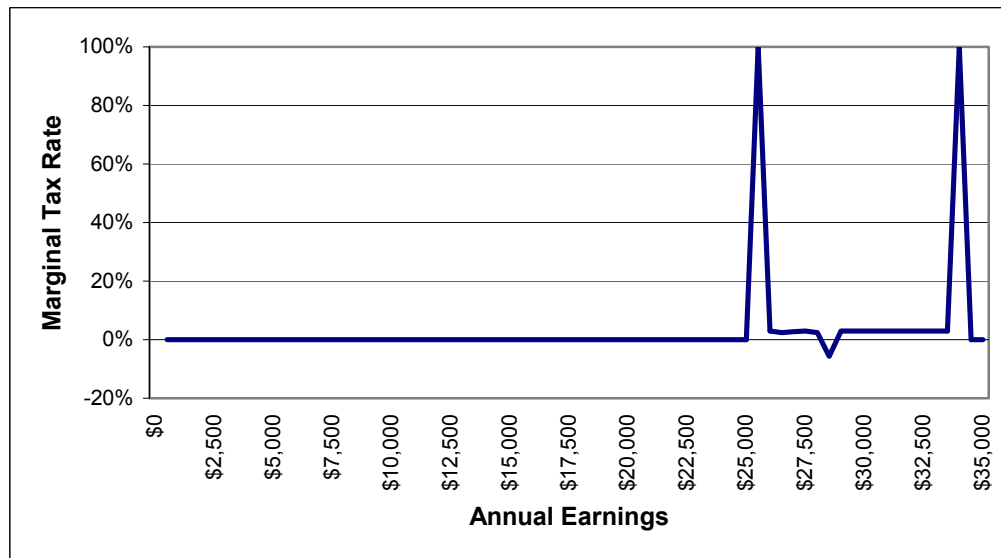
¹⁸ Although both Wisconsin Shares and BadgerCare have an upper income eligibility of 200% of the federal poverty level, the programs use different definitions of income. The availability of deductions and exclusions in BadgerCare mean that the 200% point is reached at a higher gross income.

Figure 7 shows health insurance costs under Badger Care in 2000 for a single parent with two children, and Figure 8 displays the associated MTRs:

**Figure 7. Health Insurance Costs under BadgerCare
(Single Parent with Two Children, 2000)**



**Figure 8. BadgerCare Marginal Rates
(Single Parent with Two Children, 2000)**



As seen in Figure 8, the BadgerCare premium structure operates as a cliff effect when it is first imposed and then as a small MTR for those paying the premium. Although the premium is a constant percentage, the BadgerCare MTR can vary because of other factors. In this example, the MTR is negative at the point when Wisconsin Shares eligibility is lost and child care costs increase dramatically.

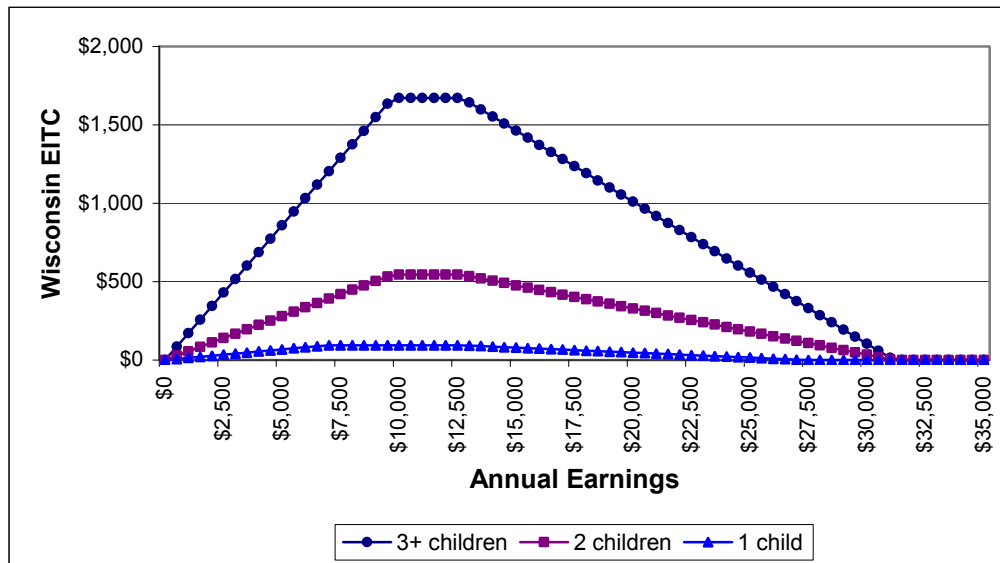
The second cliff point seen in Figure 8 represents the loss of BadgerCare eligibility because household income exceeds the eligibility ceiling (eligibility can also be lost due to a change in the availability of employer-sponsored insurance). The family sees a drop in income, either because it is paying market rates for non-group health insurance or it is bearing medical costs without insurance.¹⁹

Wisconsin Earned Income Credit

Wisconsin has its own EITC that is piggybacked on the federal credit, meaning that it is calculated as a percentage of the federal amount. The credit percentage is 4% for filers with one child, 14% for those with two children, and 43% for those with three or more children. There is no Wisconsin EITC for filers with no qualifying children.

Figure 9 shows the Wisconsin EITC payable in 2000 at each \$500 earnings increment for each household type:

Figure 9. Wisconsin Earned Income Tax Credit Amounts (2000)

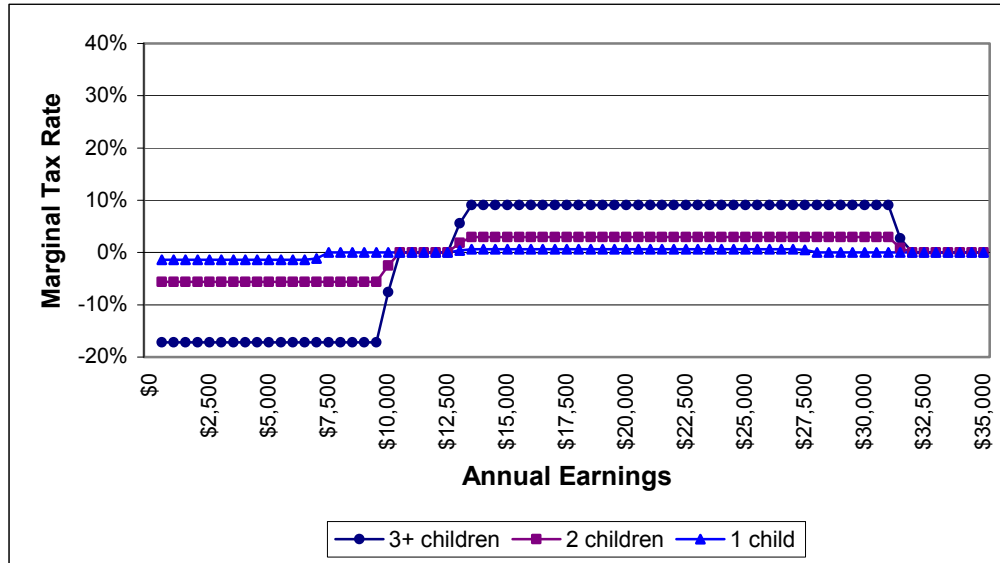


The MTR impact of the Wisconsin EITC is to increase both the phase-in and phase-out rates of the underlying federal credit.

¹⁹ This study tries to recognize the range of adaptation choices upon loss of BadgerCare eligibility by assuming payment of a limited premium equal to one-third of a market-rate group health insurance policy; nonetheless, even this rather optimistic assumption results in a large cliff effect.

Figure 10 shows the *additional* MTR resulting from the state EITC:

Figure 10. Wisconsin Earned Income Tax Credit Marginal Rates (2000)



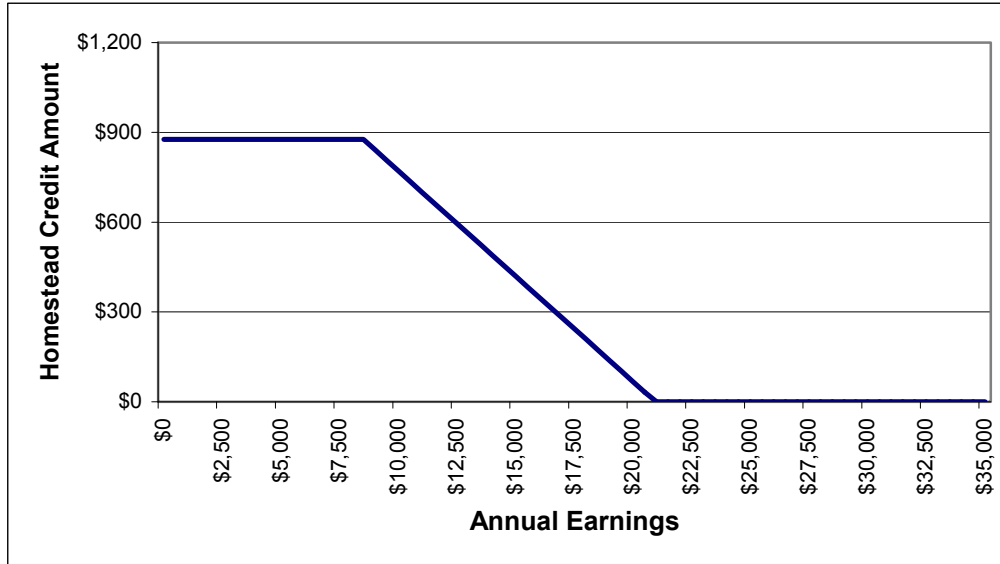
For the largest households, the *combined* federal and state EITC phase-out rate is just over 30%.

Homestead Credit

Wisconsin's Homestead Credit circuit breaker reduces the burden of high property taxes on lower-income households. It is administered in conjunction with the income tax but is based on property taxes paid (imputed for renters) and a distinct definition of household income. The maximum credit amount in 2000 was \$1,160. A renter paying \$604 a month or more in rent (heat included) could have qualified for the maximum credit. The Homestead Credit phased out at a constant effective rate of 7.03% at incomes over \$8,000 (after a deduction of \$250 per dependent).

Figure 11 shows the Homestead Credit payable in 2000 for a single parent with two children paying Milwaukee-area fair market rent:

**Figure 11. Wisconsin Homestead Credit
(Single Parent with Two Children, 2000)**



The steadily decreasing credit line reflects the Homestead Credit's static MTR through the phase-out rate range. There is no cliff effect associated with the Homestead Credit.

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Part B: Payroll and Income Tax Liabilities of Low-Income Working Households

This Part B examines the payroll and income tax liabilities of low-income working households in Wisconsin in 2000 and how those liabilities affect a worker's marginal effective tax rate (*i.e.*, the percentage of additional earnings lost through reduction in income supports).

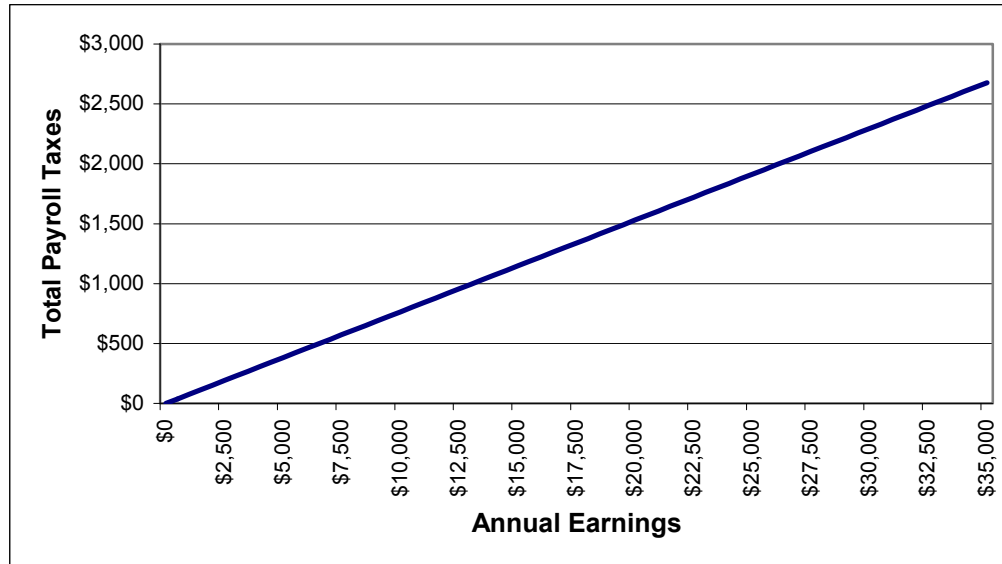
Federal Taxes

Payroll Taxes

Each dollar of earnings at lower wage levels is subject to the 6.20% Social Security tax and the 1.45% Medicare tax. The payroll tax marginal effective tax rate (MTR) for low-income working households is thus a constant 7.65%²¹, so total payroll taxes graphed as a function of earnings is a steadily rising line (as shown in Figure 1):

²¹ Although economists generally also assign incidence of the 7.65% matching employer payroll taxes to employees, only the direct employee contribution is included here, because the focus is on the direct impact to a worker of an increase in earnings.

Figure 1. Federal Payroll Taxes (2000)



Income Tax

Although each dollar of earnings is subject to federal income tax, personal exemptions and the standard deduction shield the first several thousand dollars of annual income from taxation. In 2000, the tax threshold – the point at which a positive tax liability attaches – was \$14,850 for a single parent with two children.²²

In 2000, the tax on the initial income bracket above the tax threshold was 15%. For the single parent with two children, this bracket ended at a taxable income (income less personal exemptions and the standard deduction) of \$35,150. Taxable income above that level (up to \$90,800) was taxed at 28%.

Calculation of federal income taxes here includes two non-refundable tax credits²³: the child tax credit of \$500 per child (CTC) and the child and dependent care tax credit (CDCTC).²⁴ These credits may be applied against any positive tax liability, so they effectively increase the tax threshold for eligible families. If the single parent with two children incurred the maximum countable child care expenses for the CDCTC (\$4,800, or just under \$100 a week), the

²² This study uses a single parent with two children as the standard household configuration in examples, both because this household is frequently referenced in anti-poverty policy debates and because its circumstances illustrate the issues well.

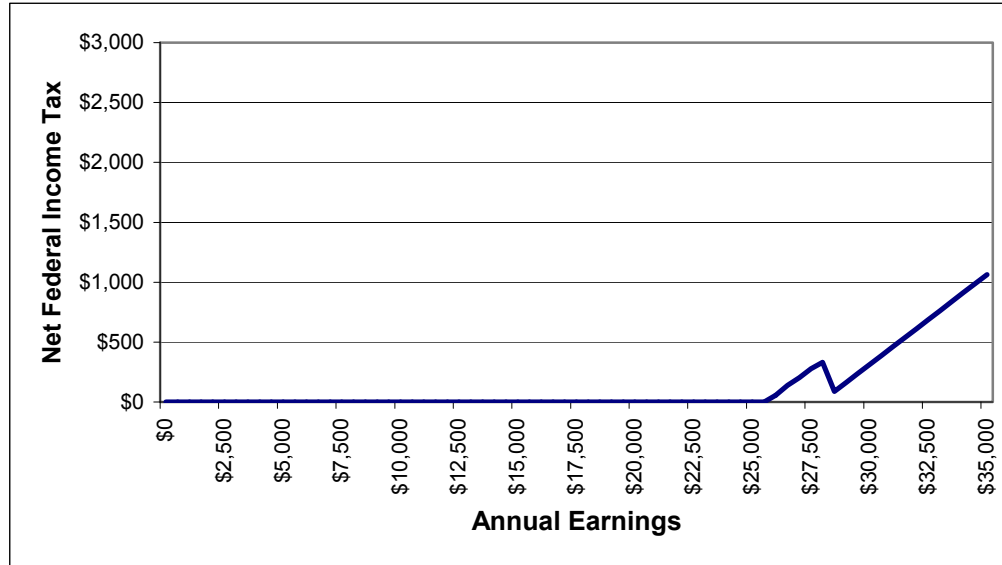
²³ The fully-refundable federal Earned Income Tax Credit is addressed as an income support program in Part A.

²⁴ For families with three or more children, there was also a partially refundable additional CTC.

combination of the CTC and the CDCTC would have raised her tax threshold to over \$28,000.

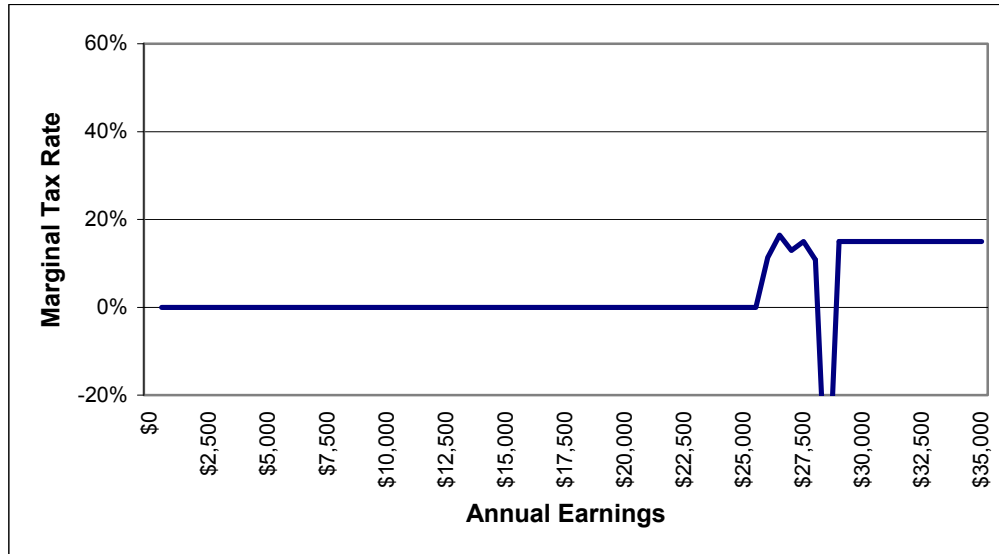
Figure 2 shows the net federal income tax liability in 2000 for a single parent with two children (measured at each \$500 increment in earnings):

**Figure 2. Federal Income Taxes
(Single Parent with Two Children, 2000)**



In addition to the regular marginal rates, there is a separate MTR impact from the CDCTC, because the credit rate (the percentage of countable expenses that can be claimed) decreases in steps from a maximum of 30% to 20%. Because the phase-down begins well before most households have a positive tax liability against which to apply the credit, few can claim the higher credit rates. But the latter steps of the phase-down can impose an additional MTR on earnings, as can be seen in the jagged line portion of the MTRs graphed in Figure 3

**Figure 3. Federal Income Tax Marginal Rates
(Single Parent with Two Children, 2000)**



The negative MTR at the \$28,500 mark in Figure 3 represents the point at which the parent loses eligibility for the Wisconsin Shares child care subsidy. Because she would then incur higher child care costs, she would see an increase in her CDTC and a drop in net federal income taxes (as seen in Figure 2).

Wisconsin Taxes

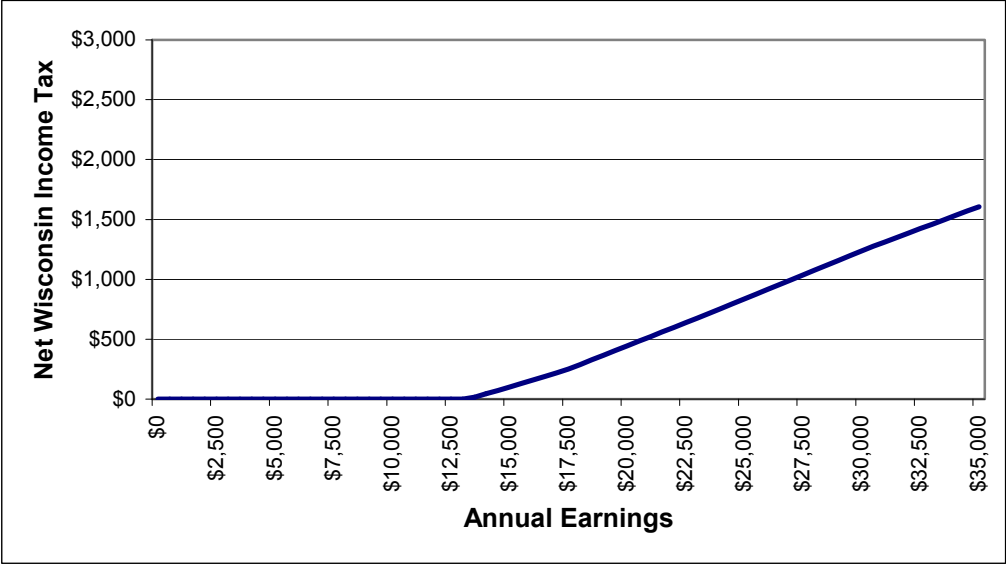
Income Tax

As with the federal income tax, a household does not begin to incur the Wisconsin income tax until annual income rises above a minimum threshold. Also as in the federal system, both a personal exemption and a standard deduction determine the tax threshold. For a single parent with two children in 2000, the nominal threshold was approximately \$11,000.

The effective tax threshold is generally significantly higher than the nominal one because of the application of non-refundable tax credits, principally a credit for school property taxes that is available to both homeowners and renters. Married filers can also claim a credit based on a percentage of the lower-earning spouse's income. While all of the credits can raise the tax threshold, only the married couple credit has a MTR impact (lowering the MTR for two-earner families).

Figure 4 shows the net Wisconsin income tax liability in 2000 for a single parent with two children:

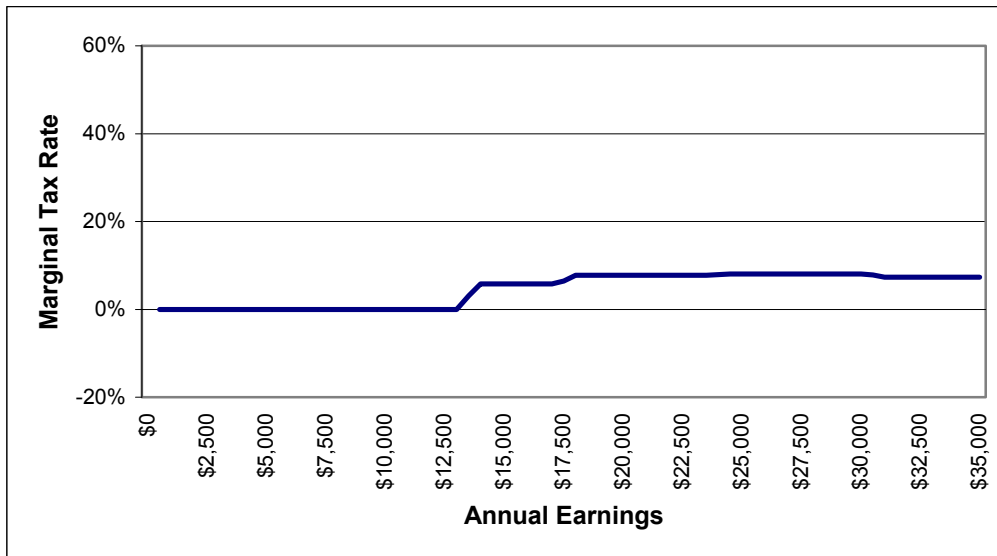
**Figure 4. Wisconsin Income Taxes
(Single Parent with Two Children, 2000)**



The tax rate for the initial tax bracket above the threshold was 4.73% in 2000. However, the effective rate was higher, because the Wisconsin standard deduction phases out as income rises. The first two tax brackets are relatively narrow in Wisconsin, with a higher nominal rate of 6.33% already applicable at taxable income above \$7,790 for single filers and a 6.55% rate beginning above \$15,590 (for single filers in 2000).

Figure 5 shows the marginal effective tax rates for the Wisconsin income tax:

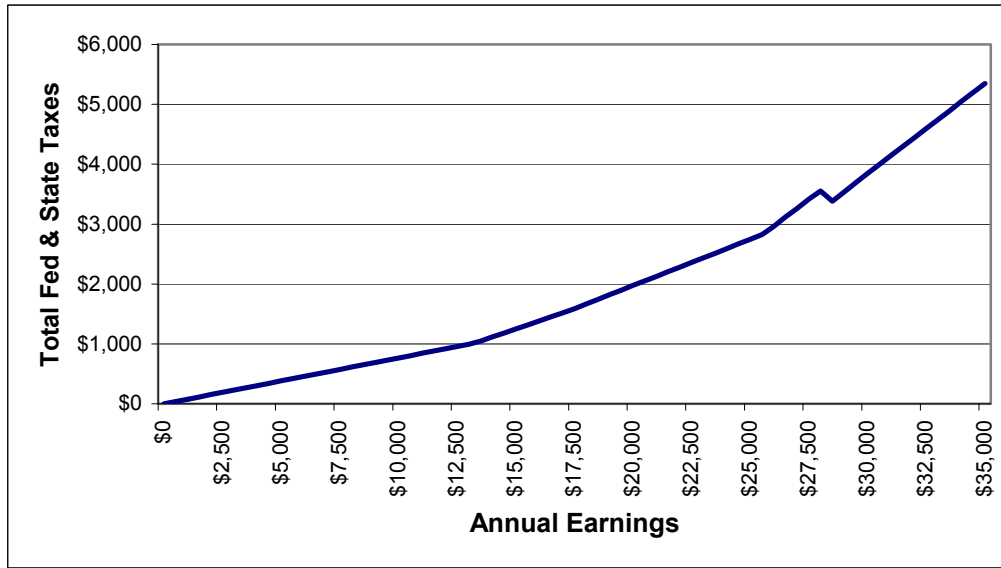
**Figure 5. Wisconsin Income Marginal Rates
(Single Parent with Two Children, 2000)**



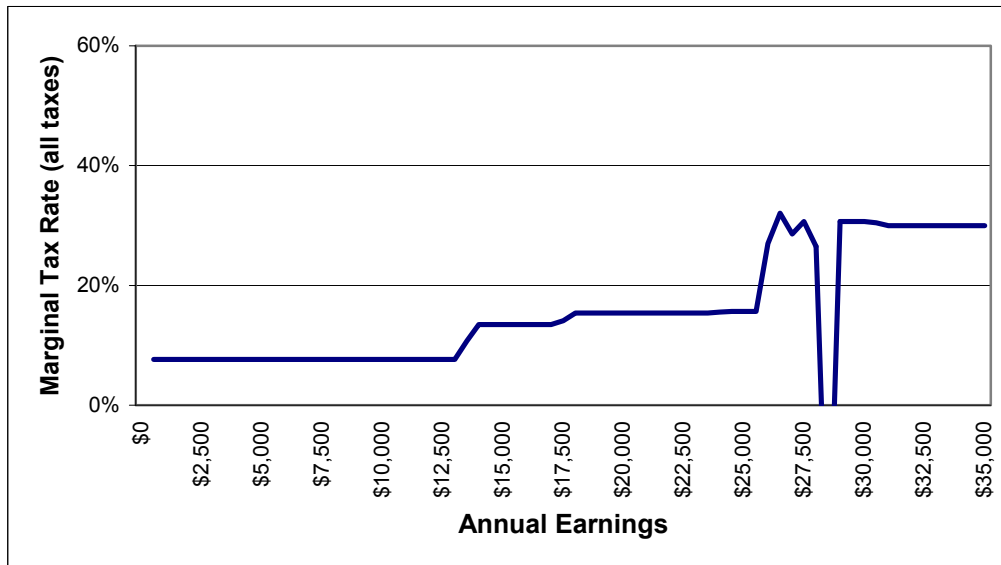
Cumulative Taxes

The cumulative payroll and income tax liabilities in 2000 for a Wisconsin single parent with two children may be seen in Figure 6, and the cumulative MTR is shown in Figure 7:

**Figure 6. Total Payroll & Income Tax Liability - Wisconsin
(Single Parent with Two Children, 2000)**



**Figure 7. Total Payroll & Income Tax Marginal Tax Rates - Wisconsin
(Single Parent with Two Children, 2000)**



***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

Stephen D. Holt
Holt & Associates Solutions²⁵

Part C: Capacity for Self-Support Through Work

This Part C examines the effectiveness of federal and state anti-poverty programs in enabling a low-wage worker to meet his household's basic needs. The focus is on Wisconsin in 2000, looking at the income support programs described in Part A and incorporating the payroll and income tax liabilities presented in Part B.

Calculation Model

This study uses a calculation model constructed in Excel that looks at tax and benefits amounts based on entry of the following variables:

- marital status
- number of children under the age of 18
- number of children in child care (children under two and children aged two and older)
- claiming of or participation in, if eligible, the federal Earned Income Tax Credit (EITC), Wisconsin EITC, Homestead Credit, Food Stamps, Wisconsin Shares, and BadgerCare

A separate worksheet for each of the tax and benefits programs determines the amount of taxes or benefits at each \$500 increment of annual income from \$0 to \$60,000. It also calculates the marginal effective tax rate (*i.e.*, the percentage of additional earnings lost through reduction in income supports) for that increment. Links between the worksheets mirror programmatic interactions. For example, the child care payments calculated by the Wisconsin Shares worksheet determine the child care deductions for the Food Stamp and BadgerCare worksheets and the amount of the Child and Dependent Care Tax Credit on the federal income tax page.

The model incorporates the following assumptions:

²⁵ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

- all income is from earnings
- married persons both work, & one spouse makes two-thirds of the earnings
- rent is at the fair market rents published by the U.S. Department of Housing and Urban Development for the Milwaukee metropolitan area and is constant at all incomes
- the size of rental unit (number of bedrooms) varies by family size
- if child care is utilized: 1) the first child is age two or older, the second child is under 2, and additional children are two or older; 2) eligible families use Wisconsin Shares subsidies for licensed care in Milwaukee County and make required co-payment; 3) non-eligible families pay 50% of the maximum reimbursable rate for licensed family care in Milwaukee County; and 4) care is used fifty weeks a year
- If free or subsidized health insurance is unavailable, the household pays one-third of the Milwaukee County average premium for small employer group plans
- households do not include elderly or pregnant persons

A summary worksheet aggregates the tax and benefits program values, assesses household well-being compared to a resource adequacy standard, and calculates the cumulative marginal effective tax rate (MTR) for each income increment.

Adequacy Standard

The model uses a resource adequacy standard for the selected household configuration, defined as the net disposable income needed for necessities. This provides a metric for looking at the effectiveness of income support programs in the context of low-wage work and payroll and income tax liabilities. Table 1 describes how the adequacy standard is used with a specific definition of net disposable income to assess a household’s economic well-being:

Table 1: Use of Adequacy Standard

Net Disposable Income					Adequacy Standard
Earnings	-	payroll taxes income taxes child care costs (net) health insurance costs (net)	+	federal & state EITC Food Stamps Homestead Credit	>? <? Amount needed for: housing food transportation other medical other necessities

The adequacy standard is not directly comparable to the federal poverty guidelines, principally because it may be used only in reference to net disposable income. In general, however, the adequacy standard used here sets a higher threshold for meeting basic needs. The standard is consistent with other minimum-level household budgets developed in recent years, as detailed in Table 2:

TABLE 2

COMPARATIVE METHODOLOGIES FOR DETERMINING MINIMUM LEVEL HOUSEHOLD BUDGETS

		HOLT / NEW HOPE PROJECT ADEQUACY STANDARD	CENTER FOR PUBLIC POLICY PRIORITIES	ECONOMIC POLICY INSTITUTE	CENTER FOR WOMEN'S WELFARE / WISCONSIN WOMEN'S NETWORK	INSTITUTE FOR WISCONSIN'S FUTURE (FIRST Model)
Housing Cost		HUD Fair Market Rents	HUD Fair Market Rents	HUD Fair Market Rents	HUD Fair Market Rents	HUD Fair Market Rents
Hous- ing Type:	single no child	Efficiency	efficiency		1 bedroom	1 bedroom
	married no child	1 bedroom	1 bedroom		1 bedroom	1 bedroom
	1 or 2 children	2 bedroom	2 bedroom	2 bedroom	2 bedroom	2 bedroom
	3 children	3 bedroom	3 bedroom	3 bedroom	3 bedroom	3 bedroom
Food – General		USDA Low-Cost Food Plan (for June)	USDA Thrifty Food Plan	USDA Low-Cost Food Plan	USDA Low-Cost Food Plan (for June)	USDA Low-Cost Food Plan
Food -- Specific		Cost per child at average for all ages & gender Cost per adult = average of male & female 20-50 yr-olds Family size adjustments per USDA guidelines	infants – 1 yr-old pre-school --- 3-5 school age – 6-8 adults – 20-50 (female if single parent) Family size adjustments per USDA guidelines	children -- 3-5, 6-8, & 9-10 yr-olds adults -- 20-50 yr-olds		child-tailored to age adults <51 yrs.old
Child Care Utilization		Utilization is a variable in model (<2 and 2+yrs old); when utilized, full-time care for 50 wks (licensed if subsidized; provisionally certified if unsubsidized)	Full-time care for all children 1 child = pre-school 2 children = 1 pre-school, 1 school-age 3 children = 1 infant, 1 pre-school, 1 school-age	1 child = 4-yr-old 2 children = 4-yr-old & 1 school-age 3 children = 4-yr-old & 2 school-age	Full-time care for infant & pre-school Before & after-school care for school-age Infants in family care; pre-school/school-age in centers	Full-time care for infant & pre-school Before & after-school care for school-age All care in licensed centers

	HOLT / NEW HOPE PROJECT ADEQUACY STANDARD	CENTER FOR PUBLIC POLICY PRIORITIES	ECONOMIC POLICY INSTITUTE	CENTER FOR WOMEN'S WELFARE / WISCONSIN WOMEN'S NETWORK	INSTITUTE FOR WISCONSIN'S FUTURE (FIRST Model)
Child Care Costs	Cost accounted for prior to calculation of net disposable income WI Shares co-payment when eligible; if not, Milw. County 75 th percentile rate	Weighted average of weekly cost of home & center care by age (<3, 3-5, 6+)	Average cost at centers by state (usually weighted urban & rural)	75 th percentile of county costs, by age of child and type of care	75 th percentile of county costs, by age of child and type of care
Transportation	Car ownership Cost = Nat'l Pers. Transp. Study average miles driven pre person (for MSA of 1.0-2.9M) times IRS cost-per-mile rate times 0.69 for single & 0.97 for married	Car ownership Cost = 110% of Nat'l Pers. Transp. Study average miles driven per person (for size of area) times IRS cost-per-mile rate times 0.69 for single & 0.97 for married	Car ownership Cost = Nat'l Pers. Transp. Study average miles driven pre person (for size of area) times IRS cost-per-mile rate times 0.69 for single & 0.97 for married	Car ownership (2 cars if married) Cost = cost of own-ing & operating 8-yr-old car, based on Amer. Auto Manuf Assn, Consumer Expend. Survey, & Nat'l Pers. Transp Study, + variable costs based on 5 work commutes & one shopping trip a week	Car ownership (2 cars if married) Cost = cost of own-ing & operating 8-yr-old car, based on Amer. Auto Manuf Assn, Consumer Expend. Survey, & Nat'l Pers. Transp Study + variable costs based on 5 work commutes & one shopping trip a week
Health Insurance	Cost accounted for prior to calculation of net disposable income If ineligible for Medicaid or BadgerCare, employee pays 1/3 of January average premium of Milw. County small employers (25 employees) (WI Commissioner of Insurance)	Lowest-priced option in area for TX state employee's insurance program	single: 61% of employee cost for employer plan + 31% of cost of non-group plan; married: 59% & 33% Medical Expenditure Panel Survey for average employee cost (family plans) ehealthinsurance.com & quotesmith.com for non-group plan (adults 33, children 4, 8, 10, \$500 deductible, \$20 co-pay)	Employee pays 1/3 of average cost of employer plan (WI Commissioner of Insurance)	Employee pays 1/3 of average cost of employer plan (WI Commissioner of Insurance)

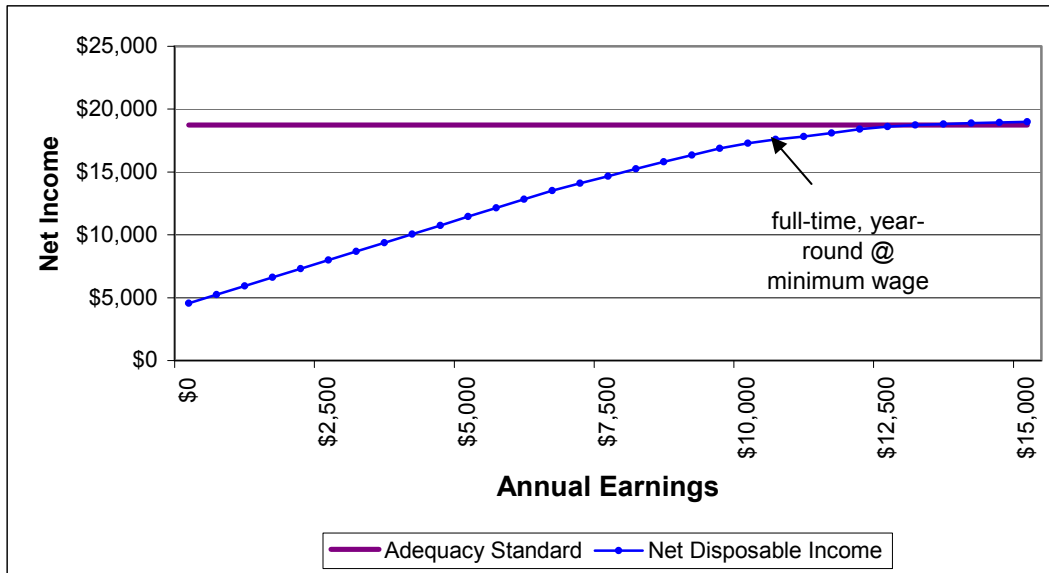
	HOLT / NEW HOPE PROJECT ADEQUACY STANDARD	CENTER FOR PUBLIC POLICY PRIORITIES	ECONOMIC POLICY INSTITUTE	CENTER FOR WOMEN'S WELFARE / WISCONSIN WOMEN'S NETWORK	INSTITUTE FOR WISCONSIN'S FUTURE (FIRST Model)
Other Medical	Health care costs from 1999-2000 Consumer Expenditure Survey for Midwest region, excluding insurance, inflated from 2000 by CPI-U for medical care	Medical services item from Consumer Expenditure Survey for Southern region, excluding costs for insurance and drugs	<i>Hidden from View: The Growing Burden of Health Care Costs</i> , Consumer Union (dollar-adjusted)	National Medical Expend. Study, updated by Medical Consumer Price Index	National Medical Expend. Study, updated by Medical Consumer Price Index
Other Necessities	14% of all other costs above (NB: child care & health insurance costs = \$0)	Consumer Expenditure Survey on local telephone, housekeeping supplies, personal care, clothing, & reading for the income level equal to sum of other costs	31% of housing and food costs	10% of all other costs above	10% of all other costs above
Taxes (<i>payroll & income taxes not considered here</i>)	None (sales and property taxes considered included in above costs)	None (sales and property taxes considered included in above costs)	None (sales and property taxes considered included in above costs)	Sales tax of 5% on miscellaneous (other necessities) costs	None (sales and property taxes considered included in above costs)

Center on Public Policy Priorities, 2001; Boushey *et al.* (2001); Pearce and Brooks (2000); Institute for Wisconsin's Future.

Income Support Programs as Wage Enhancers

The income support programs available to households in Wisconsin in 2000 – traditional public assistance benefits, newer benefits designed to assist workers, and tax credits – enhanced the viability of household support from low-wage work. This may be seen by using the Table 1 method of comparing net disposable income to the adequacy standard, as shown in Figure 1 for a single parent with two children:²⁶

Figure 1. Net Disposable Income – Full Program Participation at Low Earnings (Single Parent with Two Children, 2000)

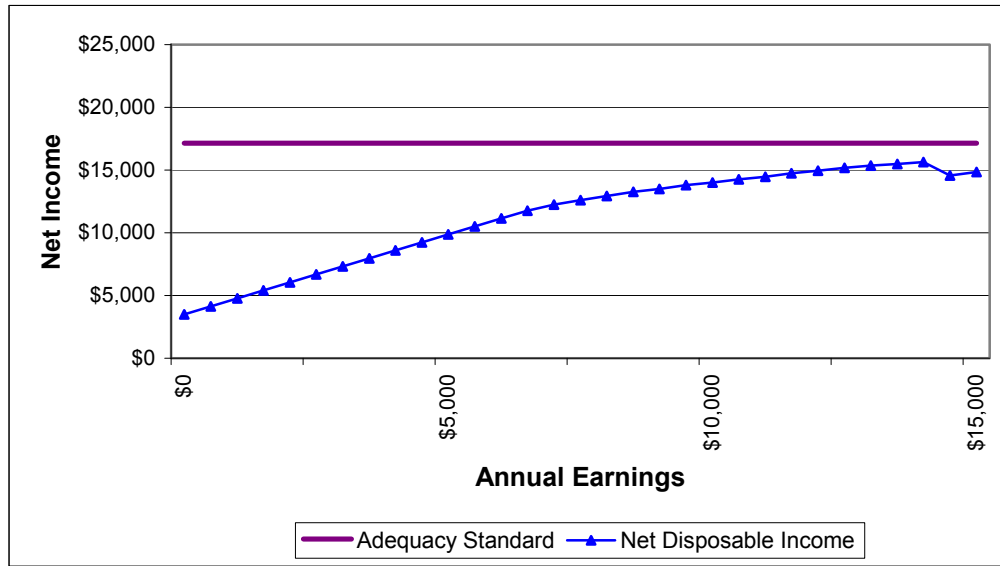


The household sees large returns on increased earnings in the very low-income “making work pay” range, quickly bringing it to the level needed to finance basic necessities. By participating in available programs, a single parent with two children working full-time, year-round would have resources equal to 94% of the minimal adequacy standard at the 2000 minimum wage of \$5.15 an hour. She would satisfy the standard at \$6.25 an hour (an annual income of \$13,000).

The wage needed to meet the adequacy standard (sometimes referred to as the “break-even wage”) can vary considerably by household configuration. Figure 2 looks at a single parent with one child:

²⁶ This study uses a single parent with two children as the standard household configuration in examples, both because this household is frequently referenced in anti-poverty policy debates and because its circumstances illustrate the issues well.

Figure 2. Net Disposable Income – Full Program Participation at Low Earnings (Single Parent with One Child, 2000)



For the single parent with one child, the break-even wage is a much higher figure outside the range of this graphic: \$10.45 an hour, or nearly \$22,000 a year. This reflects the role of family size – especially the number of children – in the structure of income support programs.

Table 3 compares the programs with the largest differences in benefit and tax credit amounts for the two household types, measured at annual earnings of \$15,000 (the upper limit of Figures 1 and 2):

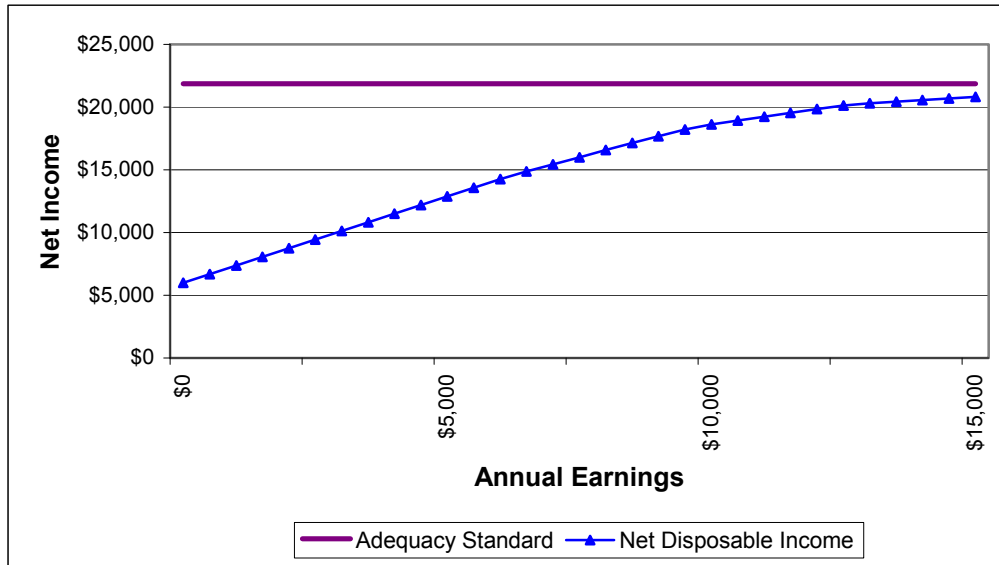
Table 3. Benefits and Tax Credit Amounts at \$15,000 Annual Earnings (Single Parents with One or Two Children, 2000)

	One Child	Two Children
Food Stamps	\$0	\$2,090
Federal EITC	\$1,984	\$3,402
Wisconsin EITC	\$79	\$476

One aspect of the role of family size in benefits calculation is the income eligibility ceiling. The single parent with one child loses Food Stamp eligibility at annual earnings of \$14,500 (using the \$500 earnings increments), going from \$1,238 a year to \$0. This abrupt complete loss of benefits – the cliff effect – is seen in Figure 2 as a dip in the net disposable income line. The single parent with two children would not encounter the cliff effect until an income of \$18,500.

Figure 3 looks at another household configuration, a married couple with two children in which only one parent works and the other cares for the children full-time (varying the model's standard assumptions referenced above):

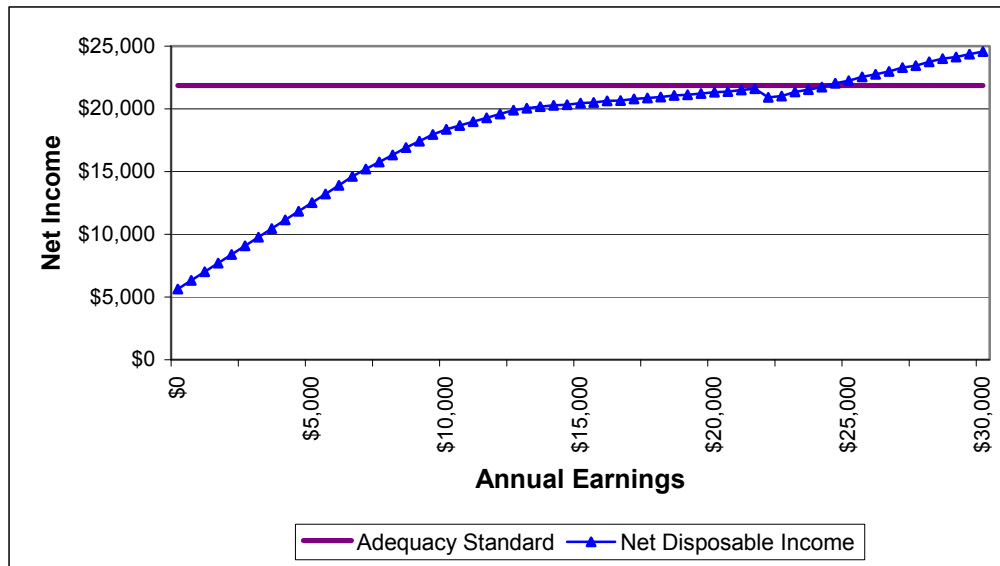
Figure 3. Net Disposable Income – Full Program Participation at Low Earnings (Married Parents, One Working, with Two Children, 2000)



The break-even wage for the one worker in this household is \$9.00 an hour (an annual income of \$18,700). It is higher than for the single-parent household because its lower costs (no child care co-payment liabilities) and higher benefits (about \$850 more in Food Stamps and the same federal and state EITCs and Homestead Credit) are outweighed by the higher expenses associated with a four-person household. This family's adequacy standard is \$21,860 compared to \$18,730 for the single-parent, three-person household. The net result is a higher break-even wage.

Figure 4 is also based on a married couple with two children but assumes that both are working full-time and year-round; in this case, the earnings range shown is twice that in Figures 1, 2, and 3, reflecting the wages received by two low-wage workers:

**Figure 4. Net Disposable Income – Full Program Participation at Low Earnings
(Married Parents, Both Working, with Two Children, 2000)**



The break-even wage (if both parents are working full-time, year-round) is \$5.80 an hour (total earnings of \$24,000), slightly lower than the \$6.25 an hour for the single-headed household with two children. Table 4 compares the resource composition between the two households:

**Table 4. Household Resources at Break-Even Wage
(Single and Married (Two Earners) Parents with Two Children, 2000)**

	Single	Married
Earnings	\$13,000	\$24,128
LESS:		
Payroll Taxes	\$995	\$1,846
Federal Income Tax	\$0	\$0
Wisconsin Income Tax	\$0	\$155
Child Care Co-Payments	\$800	\$2,000
PLUS:		
Food Stamps	\$2,612	\$0
Federal EITC	\$3,823	\$1,479
Wisconsin EITC	\$535	\$207
Homestead Credit	\$560	\$0
Net Disposable Income (roughly equal to 100% of adequacy standard)	\$18,735	\$21,813

Significance of Program Participation

All of the foregoing examples assume that the household is taking advantage of all available income support programs. The significance of program participation may be seen in Figure 5, comparing a “no programs” household claiming no benefits or tax credits (but with payroll and income tax liabilities) with a fully-participating household:

Figure 5. Net Disposable Income – All Program or No Program²⁷ Participation (Single Parent with Two Children, 2000)

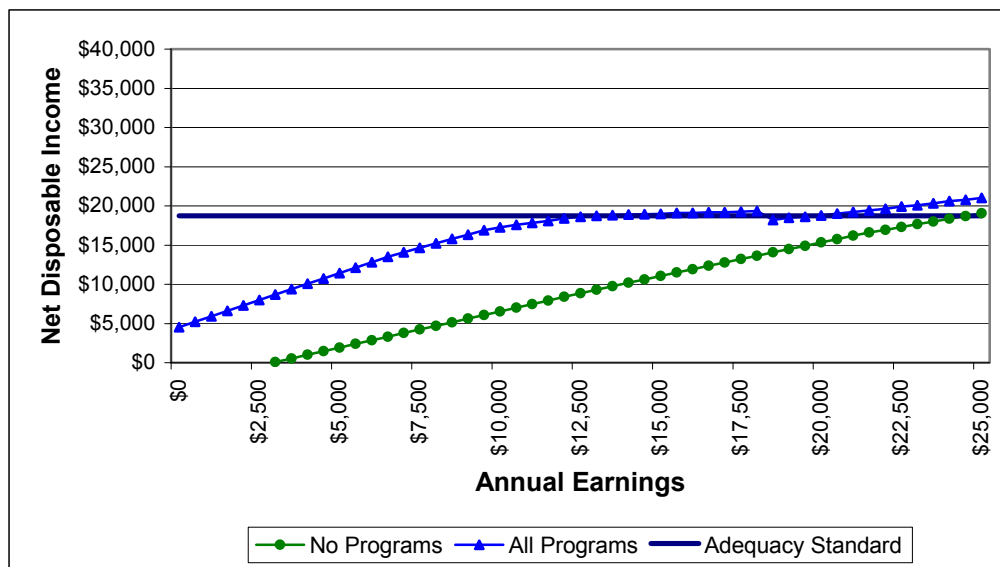


Figure 5 demonstrates that minimally-adequate household support requires relatively high earnings – in this case, \$11.75 an hour for full-time, year-round work (plus free child care) – if there is no assistance from available benefits and tax credit programs.

Part F of this study examines actual program participation in Wisconsin in 2000.

Figure 5 also illustrates a negative by-product of full program participation: the income stagnation that results from high marginal effective tax rates as benefits and tax credits are reduced and positive tax liabilities increase. This phenomenon is addressed in Part D.

²⁷ A complication with this analysis is how much a family would pay for child care and health insurance if not claiming any benefits. This chart assumes that the household would not use any paid child care (relying on family and friends networks or other informal care) and would incur the same conservatively-estimated health insurance costs paid by a family in the model whose exceeds the BadgerCare income eligibility limit. But even those limited insurance premiums would result in negative net disposable income at earnings below \$3,000. At low incomes, the household would probably go without any insurance. Because that choice would likely result in cost-shifting (out-of-pocket medical bills) rather than cost savings, the chart presents the standard results from the model.

***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

Stephen D. Holt
Holt & Associates Solutions²⁸

**Part D: Marginal Effective Tax Rates for
Low-Income Working Households**

This Part D examines the marginal effective tax rates (MTRs) that low-income working households can experience when they earn more. The MTRs are the combined effect of reductions in income support benefits and tax credits and increases in payroll and income tax liabilities. For example, if an additional dollar of earnings results in a loss of forty-five cents in benefits and tax credits and fifteen cents of additional tax liability, there is a MTR of 60%. The focus here is on Wisconsin in 2000, looking at the income support programs and payroll and income tax liabilities presented in Parts A and B and using the calculation model described in Part C.

Cumulative Marginal Effective Tax Rates

There are varying degrees of MTRs associated with each of the income support programs included in this study. The MTR may be a static rate that reduces a benefit at a constant amount, an oscillating rate reflecting a ratcheting effect, or an extremely high rate (usually in excess of 100%) at the point when eligibility is lost abruptly (a cliff effect). There are also MTRs relating to the imposition of payroll and income tax liabilities. These are generally a static rate (payroll taxes) or a rate that nominally increases in steps (the federal income tax, without consideration of non-refundable tax credits).

A household's cumulative MTR varies depending on the interaction of family configuration, program participation, and earnings. The combination of the various rate types can result in a widely fluctuating cumulative MTR. This may be seen in Figure 1, showing the MTR at each \$500 increment in earnings for a

²⁸ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

single parent with two children²⁹ who is taking advantage of all available income support programs included in this study:

**Figure 1. Marginal Tax Rates – Full Program Participation³⁰
(Single Parent with Two Children, 2000)**

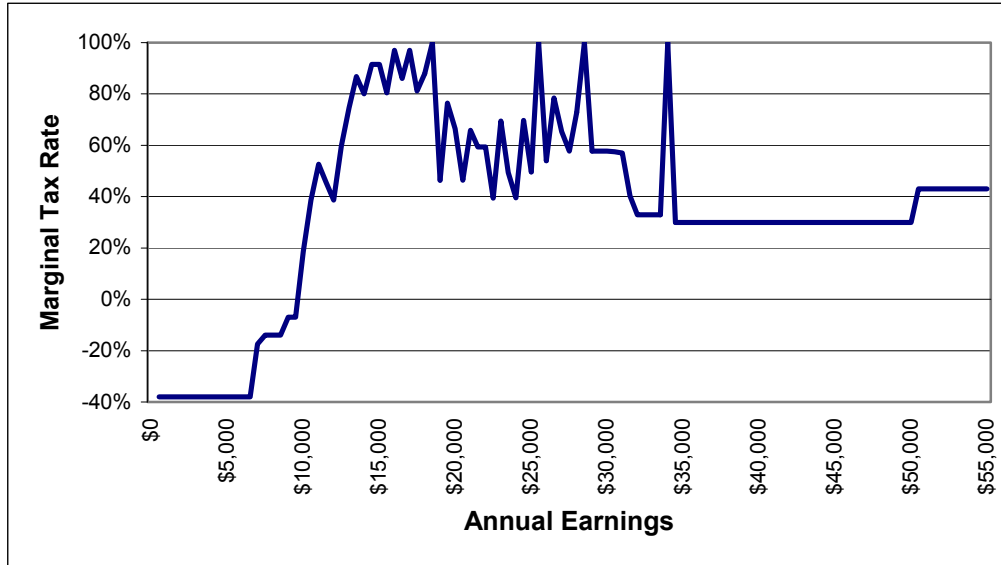
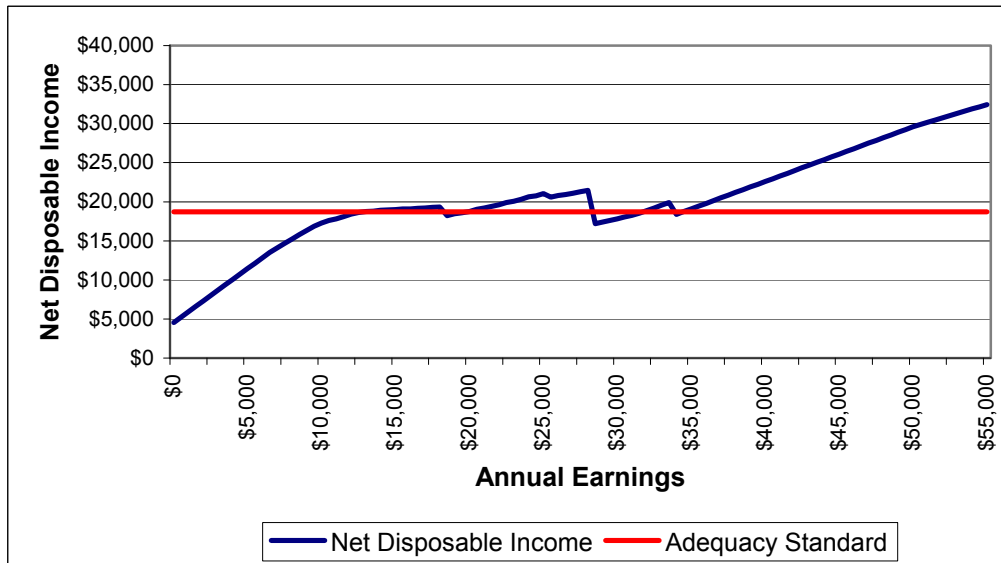


Figure 2 shows the net disposable income at each earnings increment:

**Figure 2. Net Disposable Income – Full Program Participation
(Single Parent with Two Children, 2000)**



²⁹ This study uses a single parent with two children as the standard household configuration in examples, both because this household is frequently referenced in anti-poverty policy debates and because its circumstances illustrate the issues well.

³⁰ This chart is an extension of Part C's Figure 1, displaying annual earnings up to \$55,000.

At the lowest earnings, the marginal tax rates in Figure 1 are negative, and the slope of the net disposable income line in Figure 2 is sharply upward. This high return on increased earnings in the “making work pay” range brings the household’s resources to the level needed to finance basic necessities at relatively low wage rates.

But this household experiences significantly elevated MTRs – often well above 50% -- at annual incomes from \$12,000 to \$31,000. This study classifies elevated MTRs into four ranges:

1. extremely high – over 80% (*i.e.*, retention of 20% or less of additional earnings)
2. very high – between 67% and 79%
3. high – between 55% and 66%³¹
4. significant – between 43% and 54%³²

In addition, there are four cliff points at which an additional dollar of earnings results in a drop in income, meaning a MTR well over 100%. In order of occurrence as earnings rise, the cliff points in Figure 1 are the loss of Food Stamp benefits, imposition of a premium for BadgerCare health insurance coverage, loss of Wisconsin Shares subsidized child care benefits, and loss of BadgerCare coverage.

Figure 2 illustrates the impact of the high MTRs and cliff effects. Net income is relatively flat through the \$12,000 to \$31,000 range, and there is a drop in the net income line at each of the cliff points (the largest being the loss of child care subsidies). The household’s resources stagnate near the adequacy standard before finally increasing consistently beginning at approximately 250% of the federal poverty level.

As seen in Part C, a single parent with two children participating in available programs could support her family at a minimally adequate level with a full-time, year-round wage of \$6.25 per hour (an annual income of \$13,000). But Figure 2 illustrates that she could receive a raise of up to \$10.50 more per hour – to \$16.75, earning over \$35,000 a year – without reliably increasing her family’s economic well-being.³³

The charts on the following pages look at two other household configurations: Figures 3 (marginal tax rates) and 4 (net disposable income) are for a single

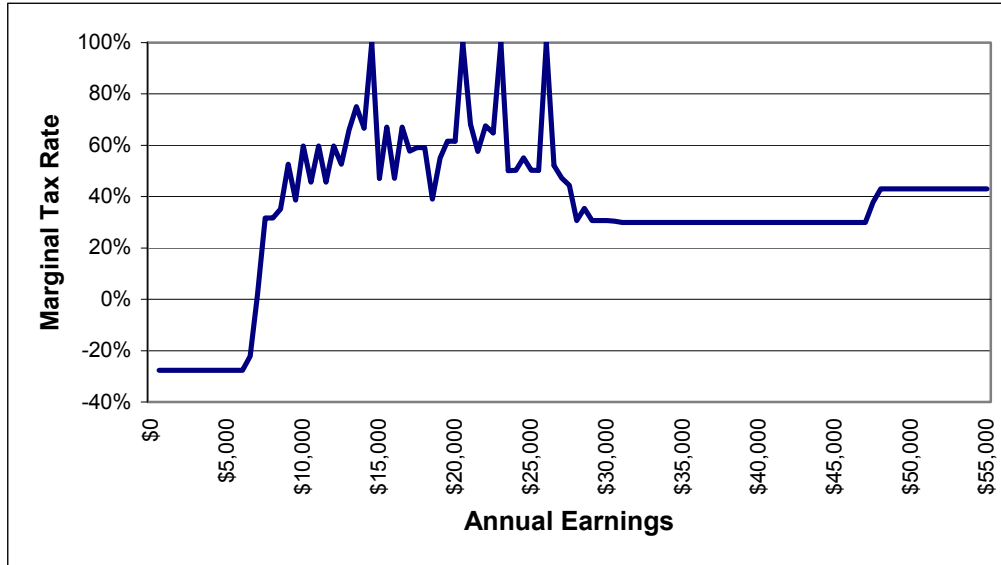
³¹ This range begins above the comparable MTR of 54% for higher-income households, composed of Social Security and Medicare taxes (7.65%, without reference to the inapplicability of the former on earnings above \$76,200 in 2000), federal income tax (39.6%, excluding the phase-out ranges of certain deductions and exemptions), and Wisconsin income tax (6.75%).

³² This range begins above the MTR experienced by middle-income households: those subject to the 28% federal income tax bracket, as well as payroll and Wisconsin income taxes.

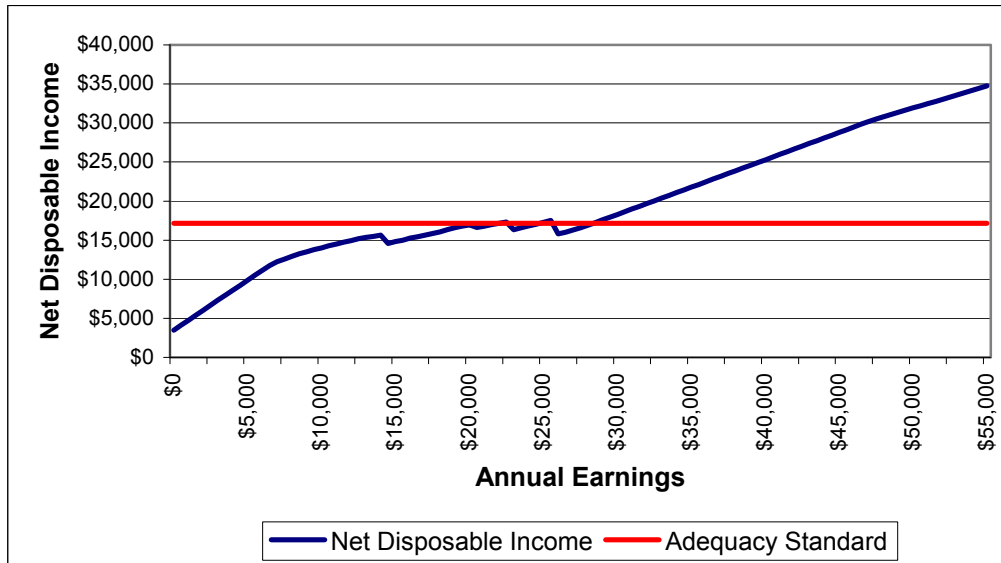
³³ The gain in net disposable income from the increased earnings would be less than \$15 a month.

parent with one child, and Figures 5 and 6 show a married couple who both work and have two children.

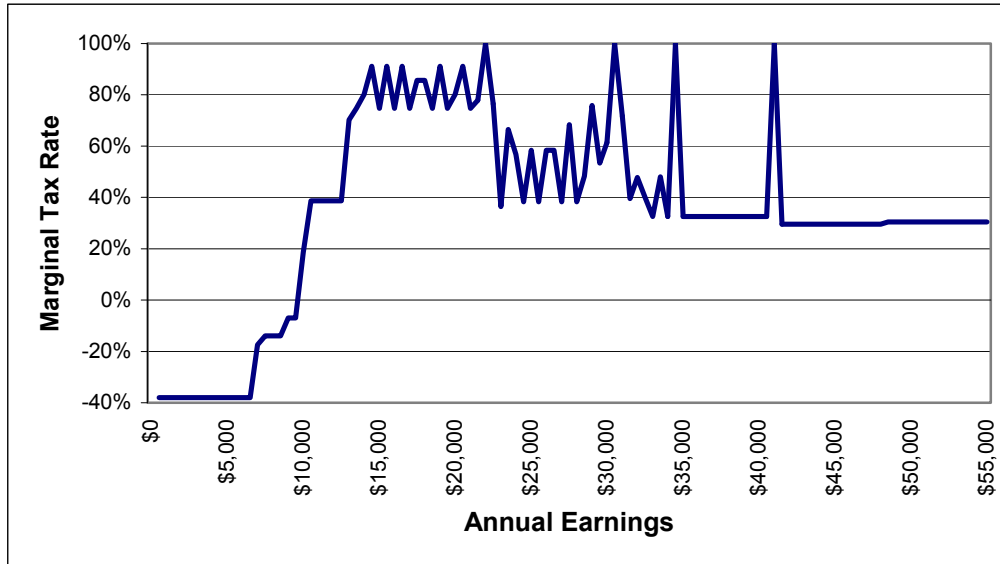
**Figure 3. Marginal Tax Rates – Full Program Participation
(Single Parent with One Child, 2000)**



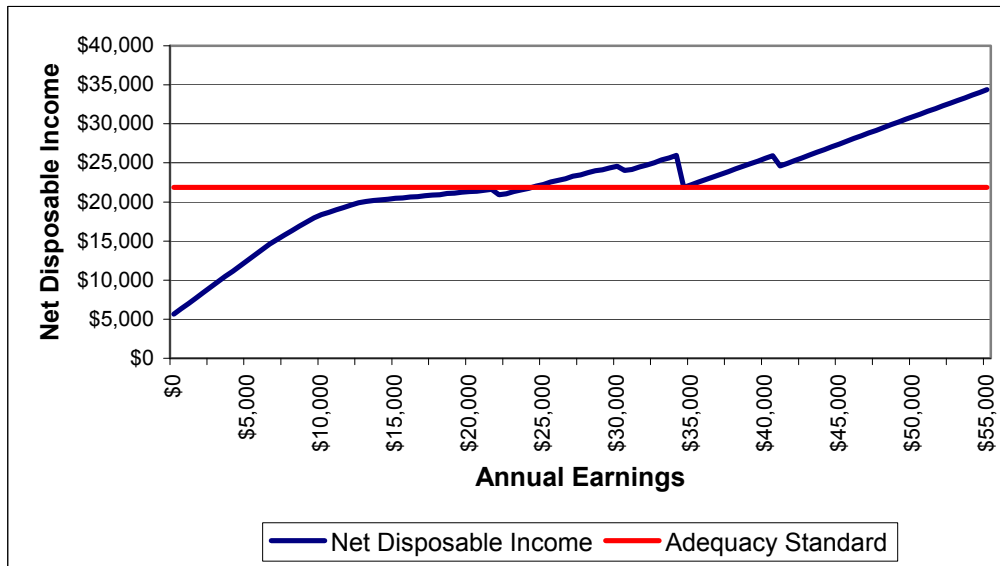
**Figure 4. Net Disposable Income – Full Program Participation
(Single Parent with One Child, 2000)**



**Figure 5. Marginal Tax Rates – Full Program Participation
(Married Parents, Both Working, with Two Children, 2000)**



**Figure 6. Net Disposable Income – Full Program Participation
(Married Parents, Both Working, with Two Children, 2000)**



The patterns in Figures 3 through 6 are similar to the single-headed household with two children. The primary difference is that the high MTRs begin and end at lower annual earnings for smaller households and at higher earnings for larger ones. In each case, there is a rapid initial approach toward the adequacy standard, a range of stagnation that includes losses in net income at cliff points, and eventual income growth commensurate with higher earnings.

Sources of Elevated Marginal Tax Rates

Elevated MTRs have several sources. In the example in Figure 1 (single parent with two children who is participating in available income support programs), there is an extremely high (over 80%) cumulative MTR in the \$12,000 to \$18,000 income range. Table 1 details the components of the MTR on an earnings increase from \$12,000 to \$18,000:

Table 1. Marginal Tax Rate Components, \$12,000 - \$18,000 Earnings (Single Parent with Two Children, 2000 - Full Program Participation)

Food Stamps	26.22%
Federal EITC	18.64%
Wisconsin Shares	17.50%
Federal payroll taxes	7.65%
Homestead Credit	7.03%
Wisconsin income tax	4.82%
Wisconsin EITC	2.61%
CUMULATIVE MTR	84.47%
<p>NOTES: - no net federal income tax liability -Medicaid instead of BadgerCare</p>	

Three of the programs included in this study generate the most significant MTRs for this household. Together, the reductions in Food Stamps, federal EITC, and child care subsidies take over sixty-two cents of each additional dollar earned.

Above the first cliff point in Figure 1 (just above \$18,000), the Food Stamp phase-out is no longer present. The family then experiences less elevated but still high (55% to 66%) MTRs. These continue until the EITC completely phases out at around \$31,000 in annual earnings. However, there would also be two cliff points within this range: imposition of the BadgerCare premium and loss of Wisconsin Shares eligibility.

Table 2 lists the components of the cumulative MTR on an earnings increase from \$25,500 (*i.e.*, with BadgerCare premium in effect) and \$28,000 (just below the Wisconsin Shares cliff point):

Table 2. Marginal Tax Rate Components, \$25,500 - \$28,000 Earnings (Single Parent with Two Children, 2000 - Full Program Participation)

Federal EITC	21.06%
Federal income tax	13.28%
Wisconsin Shares	10.00%
Wisconsin income tax	8.02%
Federal payroll taxes	7.65%
Wisconsin EITC	2.95%
BadgerCare premium	2.70%
CUMULATIVE MTR	65.66%

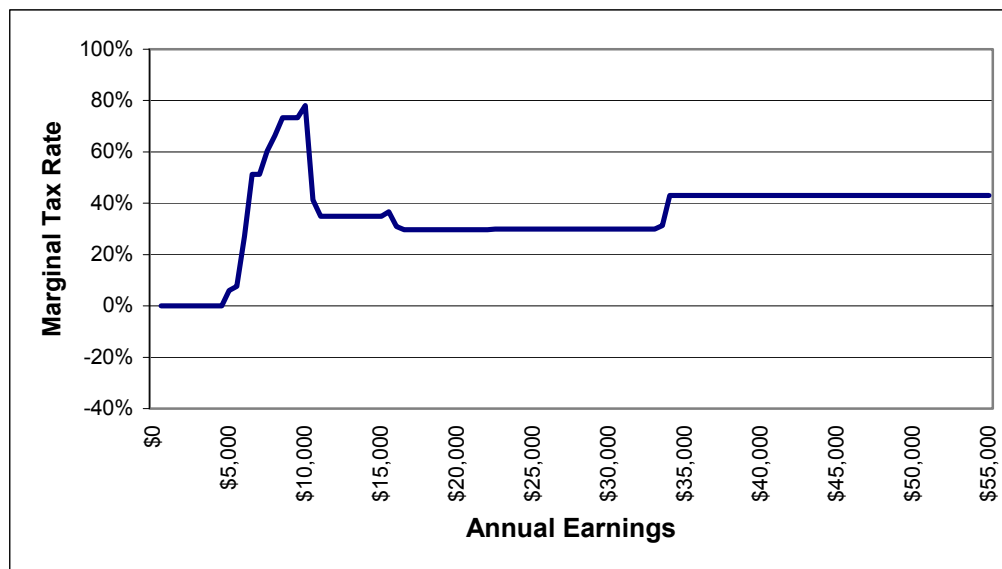
In the \$25,500 to \$28,000 range, income taxes are a more significant component of the cumulative MTR, representing nearly a third of the total as compared to less than 6% in the \$12,000 to \$18,000 range. Nonetheless, the combined impact of the EITC and subsidized child care is equally large.

Role of Child-Oriented Benefits in Elevated Marginal Tax Rates

With the notable exception of Food Stamps, the programs most associated with elevated MTRs are available only to households with children. Moreover, the amount of benefits payable generally increase based on the number of children in the household, either directly (e.g., the Wisconsin EITC for three or more children) or indirectly as a factor in family size (e.g., eligibility limits tied to the federal poverty level increase with each additional child). This partly reflects the difference in household needs. The adequacy standard³⁴ in 2000 for a single worker without children was \$12,180; for a single worker with three children, it was \$22,300.

Comparing the MTRs for the no-child and three-child households illustrates the role of child-oriented benefits. Figure 7 shows that, on the whole, MTRs are relatively low for a single worker without children:

Figure 7. Marginal Tax Rates – Full Program Participation (Single Worker without Children, 2000)



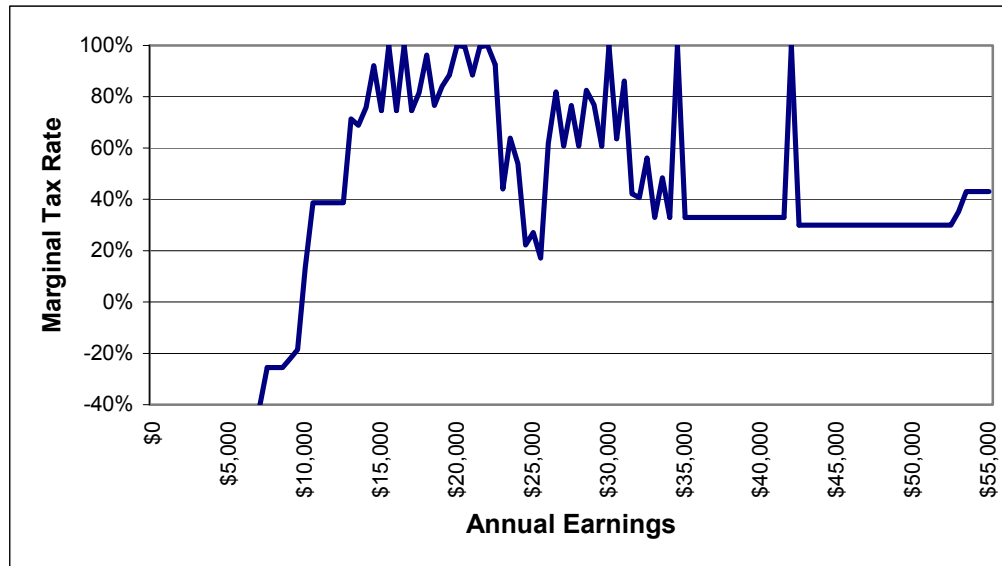
There is one earnings range with very high MTRs: the cumulative MTR on an increase from \$7,000 to \$10,000 is 71%. Just over half of that very high rate is from a steady but steep loss of Food Stamp benefits. The drop in the MTR

³⁴ See Part C for a complete description of the adequacy standard and the definition of net disposable income against which it is compared.

above \$10,000 reflects the worker's ineligibility for Food Stamps and the EITC (as well as for all of the child-oriented programs).

The experience for a single worker who is supporting three young children is very different, as seen in Figure 8:

**Figure 8. Marginal Tax Rates – Full Program Participation
(Single Parent with Three Children, 2000)**



The extremely high MTRs between \$14,000 and \$21,500 at times exceed 100%, and the household is subject to elevated rates over a wide range of incomes.³⁵

Marginal Tax Rates in the Context of Income Sufficiency

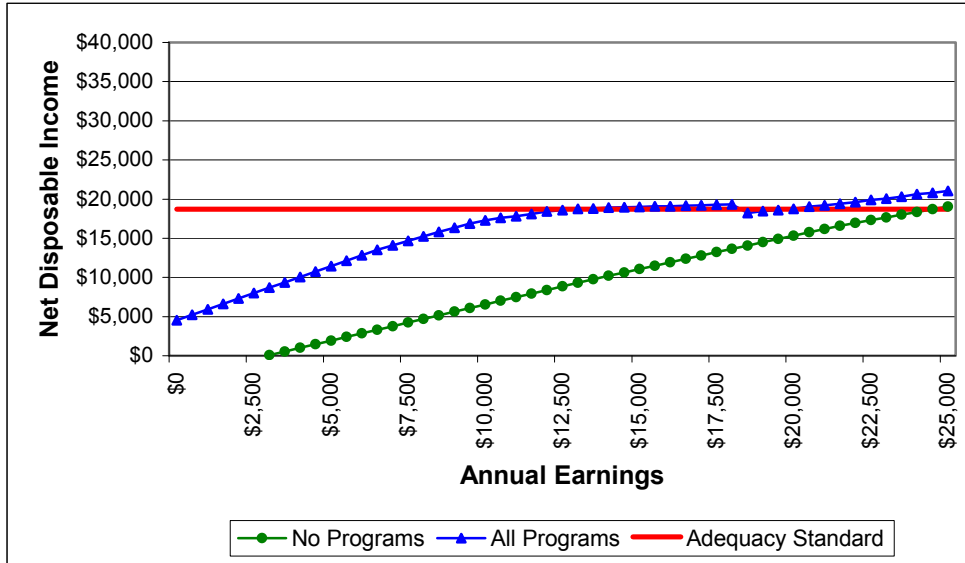
The greater income support assistance available to households with children has the effect of elevating MTRs, but it also helps those families meet their needs. This is especially true for lower-earning workers. In other words, an analysis of MTRs alone is inadequate to evaluate household well-being. A worker who does not avail herself of any assistance programs may experience a low MTR, but she may also be unable to provide adequately for her family.

The trade-off between elevated MTRs and income sufficiency may be seen in the following two charts. Figure 9 compares net disposable income at lower earnings (less than \$25,000 annually) for a single parent with two children who is

³⁵ One benefit targeted to large families – the additional child tax credit available in 2000 to families with three or more children – does contribute to significantly *lower* MTRs (seen as a dip in the MTR line) in the \$23,000 to \$26,000 range.

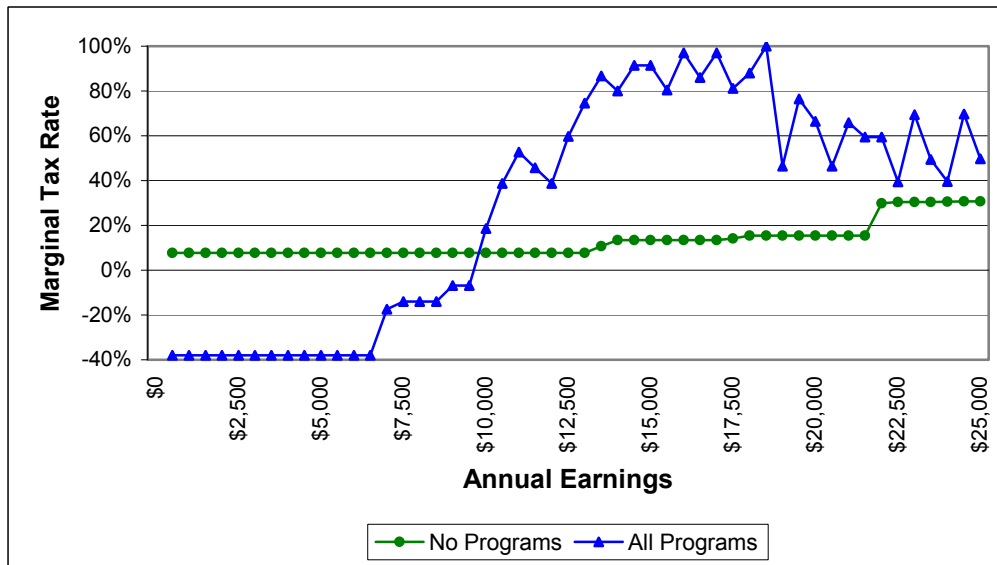
participating in all available programs with a similar parent with no income support program participation³⁶:

Figure 9. Net Disposable Income – All Program or No Program Participation (Single Parent with Two Children, 2000)



Program participation is clearly advantageous. But the flattening slope of the all programs line in Figure 9 reflects the dramatic effect of program participation on MTRs. Figure 10 shows the differences in MTRs:

Figure 10. Marginal Tax Rates – All Program or No Program Participation (Single Parent with Two Children, 2000)



³⁶ The parent who does not participate in any income support programs remains subject to payroll and income tax liabilities. Expenditure assumptions are detailed in footnote 3 in Part C.

At the lowest earnings, the MTRs are much more advantageous for the participating household, and that worker is able to support herself at a full-time hourly wage of \$6.25 an hour. On the other hand, the non-participating worker's break-even wage rate – if she can rely on family and friends to provide child care for free – is \$10.20 (an annual income of just over \$21,000 a year).

The disadvantage for the worker who participates in available income support programs is that the easier path to income sufficiency is accompanied by income stagnation if her earnings continue to rise. She experiences much higher MTRs above at incomes above \$10,000. This is seen in Figure 9's nearly flat net disposable income line that remains close to the household's adequacy standard. Income support certainly "makes work pay", but the worker may find that working and earning more does not continue to pay.

The tradeoff between an adequate level of income support and the income stagnation that can result from the phase-out of that support reflects the so-called "iron law" or "iron triangle" of welfare."³⁷ The policy options discussed in Part H recognize this necessity of balancing competing goals.

***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

*Stephen D. Holt
Holt & Associates Solutions³⁸*

**Part E: Methodology for Creating Matched
Income Support and Tax Data Set**

This Part E describes the source data for this study and the initial matching provided by the State of Wisconsin and the methodology the author employed for creating the unified household-level file from which the findings presented in Parts F and G were derived.

³⁷ Welfare policy must balance the conflicting goals of alleviating poverty, providing incentives to work, and limiting costs by controlling the number of recipients (Blau, Ferber, and Winkler, 2002).

³⁸ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

Source Data and State Matching

The Institute for Research on Poverty at the University of Wisconsin-Madison (IRP), on behalf of the Wisconsin Department of Workforce Development and the Wisconsin Department of Health and Family Services, provided the following files with the listed data elements:

Medical Assistance (MA) (1,221,848 records)

- masked case number
- month
- number of individuals in case
- number of eligible individuals in case
- masked personal identification number for each individual in case
- eligibility of each individual in case

BadgerCare (426,312 records)

- masked case number
- month
- number of individuals in case
- number of eligible individuals in case
- masked personal identification number for each individual in case
- eligibility of each individual in case
- net earned income
- premium paid

Wisconsin Shares (subsidized child care) (336,725 records)

- masked case number
- month
- number of parents in case
- number of children in case
- masked personal identification number for each parent in case
- masked personal identification number for each child in case
- income
- co-payment
- participation by each child
- amount paid for each child

Food Stamp (946,504 records)

- masked case number
- month
- number of individuals in case
- number of eligible individuals in case
- masked personal identification number for each individual in case
- eligibility of each individual in case
- net income
- dependent care disregard amount
- shelter and utility expenses amount
- benefit amount

Wisconsin Works (W-2) (20,538 records)

- masked case number
- masked personal identification number for each adult in case
- masked personal identification number for each child in case
- grant prior to adjustments (by month)
- grant after adjustments (by month)

Unemployment insurance (employees) (11,799,901 records)

- masked Social Security Number
- reported wages (by employer, by location, by quarter)
- link to employer data file

Unemployment insurance (employer data) (465,845 records)

- masked employer number
- location number (if multiple locations)
- quarter number
- SIC code
- multi-unit code
- health insurance flag
- set-up date
- subject date
- average monthly employment
- gross payroll
- number of locations
- employees with wages
- new employees
- dropped employees

IRP also created an aggregation file for each personal identification number appearing in the program files, plus any personal identification number in a separate child support data set. This file (MDempDOR) has the following data elements (951,249 records):

- masked personal identification number
- participation code for Medical Assistance
- participation code for BadgerCare
- participation code for Wisconsin Shares
- participation code for Food Stamps
- participation code for Wisconsin Works
- whether child support was paid during year
- whether child support was received during year
- wages reported to unemployment insurance

For those with program file data:

- date of birth
- gender
- race
- highest educational level attained

For those with child support data (337,235 records have child support data only):

- child support amount paid
- child support amount received

In the version of MDempDOR provided to the Department of Revenue, the Social Security Number was also included. Revenue used this to match the file to its records, matching both Social Security Numbers in a tax file if a joint return.

The Department of Revenue provided the following data elements:

- masked Social Security Number (for two individuals if joint return filed)
- type of income tax return
- type of Homestead Credit return
- filing status
- elderly status (for two individuals if joint return filed)
- dependent status
- number of dependents
- number of qualifying children (when state EITC claimed)
- federal tax information, as reported on state returns:
 - o adjusted gross income (when available)
 - o Earned Income Tax Credit (when state EITC claimed)
- Wisconsin tax information:
 - o adjusted gross income
 - o household income (for Homestead Credit purposes)
 - o standard deduction
 - o taxable income
 - o gross tax
 - o itemized deduction credit
 - o other non-refundable credits

- property tax credit
- married couple credit
- Earned Income Tax Credit
- Homestead Credit
- Working Family Credit

The Department of Revenue then provided four matched files:

1. RevOnly – tax records with no match in MDempDOR; tax data elements only (2,314,865 records)
2. RevCARES – tax records with match in MDempDOR; tax data elements and MDempDOR data elements (405,390 records)
3. RevDup – tax records with the same Social Security Number as another tax record; tax data elements; when match in MDempDOR, those data elements (12,164 records)
4. CARESOnly – MDempDOR records for which no match found in tax records (494,452 records)

Also provided were four files with the corresponding unemployment insurance employee records.

Data Objective

The primary objective was to use the source data to determine the marginal effective tax rate (MTR) to which each Wisconsin household was subject. The factors determining the MTR are:

- income
- marital status
- family size
- program participation
 - Earned Income Tax Credit (credit amount)
 - Homestead Credit (credit amount)
 - BadgerCare (premium, eligibility cliff)
 - Wisconsin Shares (co-payment, eligibility cliff)
 - Food Stamps (benefit amount, eligibility cliff)

Therefore, the final reference file for purposes of analyzing MTRs should be organized by household and have eight data elements for each record.

Data Structure Challenges

Each source data file had its own definition of household. For the tax files, it was a single person or married couple and their dependents (who may or may not have all resided at the same place). The tax files also had records for filers who were themselves dependents of other filers, and it was not possible to match those filers to their parent household.

The CARESonly file (and MDempDOR, from which it draws) contained individuals only, many of whom were children. Therefore, there may have been several records that were part of a single household.

Records in CARESonly did not have data on income, marital status, or number of dependents. For Wisconsin Shares participants, there were income data in that program file that were analogous to earned income. For Food Stamps and BadgerCare participants, there were net income fields in the program files from which a calculation of earned income could be made. There was no income information in the Medical Assistance program file.

The program files had case-level data. Who was in a case varied by the program. The program data had a separate record for each month, and individuals moved in and out of cases throughout the year.

The matched files (RevCARES and CARESonly) contained personal identification numbers (PINs) from the program files but not case numbers. But the program files were organized by case number. They also had a separate record for each month of program participation, and a separate field for each PIN. A single PIN in a case did not always appear in the same PIN field, depending on what individuals were in the case in a particular month. The PIN fields were not arranged in a predictable order, meaning that it was not possible to identify the adult members of the case by PIN field.

General Assumptions

Because tax files were the primary data source, the primary unit of analysis was the household as represented in the tax files.

Program participation by persons who were not tax filers (generally children) was considered in assessing a filing household's participation when the former appeared in a program case with the latter. This was because the non-filer's program eligibility was most likely affected by the filers' income, and the filer probably bore any premium or co-payment obligations for the non-filer.

The W-2 file was omitted from the analysis, because the program does not have a direct MTR implication. Although there is a potential marginal rate effect due to termination of cash assistance, a loss of eligibility due to earnings would likely be associated with a net gain in household income.

Child support data were not part of this analysis. Because child support payments are generally a percentage of income, there is a marginal rate implication. However, there were no data indicating the percentage applicable in a particular case.

Data Manipulation

Determining records to include from RevDup file

The RevDup file – containing records of those Social Security Numbers which appear on more than one tax return – was problematic, because using the complete file would result in double-counting some program participation.

The only RevDup records used were those showing receipt of either the EITC or the Homestead Credit or participation in the BadgerCare, Wisconsin Shares, or Food Stamps programs (1,471 of the 12,164 records in the file). Within that set, there remained 184 duplicate masked personal identification numbers (representing Social Security Numbers). The author paired these and deleted one of the records, using the following rules:

1. Saving the record with the most program participation data.
2. When one record had the EITC data and the other the Homestead Credit data, copying the Homestead Credit amount to the EITC-containing record and deleting the Homestead record.
3. Otherwise, saving the record with the higher income.

The 1,287 remaining records were added to the RevCARES file and saved as RevCARES2.

Other tax file anomalies

The tax files had a record for each tax return filed, including those filed by persons who qualified as dependents on another return. A common example was a child who earned enough income to trigger a filing requirement but who was not providing over half of his own support. A field in the tax files indicated whether the filer was able to be claimed as a dependent. Approximately 11% of the tax records were of this type.

These filers were included as separate entities for several reasons. Most importantly, there was no way of identifying the other return on which the filer was able to be claimed as a dependent. Excluding these records could have failed to capture instances of program participation. The author found a program file match for these filers in 3,539 BadgerCare cases, 659 Wisconsin Shares cases, and 4,342 Food Stamps cases. (In general, these filers were not eligible for the EITC or the Homestead Credit.) Also, many of those who could be claimed as a dependent would have nonetheless qualified as an independent household as generally conceptualized, and their program participation may in fact have been as an independent case. For those that were in fact minor children or otherwise not an actual household, their inclusion did not in most cases affect the analysis, because the records would not show up when screening the data for program participation.

Another issue was that almost 5% of those filing tax returns used the Non-resident & Part-Year Resident form (1NPR). This may have meant that some non-Wisconsin households were included in the analysis. The author's judgment is that any resulting overcount was not significant, however. If the household was truly non-resident, the record would not have shown any program participation. In a few thousand cases, a non-resident filer did have a match in a program file. This was likely due to part-year residence in the state during the calendar year sufficient to qualify for a benefits program. It was appropriate to include those cases, because they could have been affected by any high MTRs for their period of residency.

Matching program participants to households

Matching program participants who did not file tax returns to tax filing households required several steps. This was because the cross-file program participation information in MDempDOR (and thus in the matched tax files) was by PIN without any reference to case number(s). But the case numbers – which are largely consistent across programs -- provided the means for aggregating PINs into households.

Linking PINs to cases

The first challenge was identifying all the case number / PIN matches. There were eighteen PIN fields each in the MA, BadgerCare, and Food Stamps program files and thirteen in the Wisconsin Shares file. There were up to twelve records in each file for each case (one for each month). A single PIN could have appeared in different fields in different months.

Each match was found by first creating a series of interim files into which the author copied the case number and the PIN for each record for a single PIN field. In other words, file BC1 contained the case number and corresponding PIN from PIN field 1 for each record in the BadgerCare file, BC2 the case number and PIN from PIN field 2, and so on.

The author then merged and sorted the several case number / PIN match files for each program and eliminated duplicate matches. A similar procedure then combined the four resulting files into a single file containing all the unique case number / PIN matches (AllCasePIN).

Determining overall program participation by case

Because the cross-file program participation data were organized by PIN in the MDempDOR file, they could be looked up and attached to the paired case numbers and PINs in AllCasePIN. The PIN, case number, and program participation fields were copied to a new file (CARESpartic).

From this new file could be determined in which of the three targeted programs a case had participated. But the program participation fields had to be converted from text flags to numeric values to permit aggregation. Table 1 shows the conversion, with a value of 1 for participation that could have affected household MTRs and a value of 0 otherwise (including for missing data):

Table 1. Conversion of Program Participation Text Flags to Numeric Values

	<i>Flag</i>	<i>Description</i>	<i>New Value</i>
MA / BadgerCare	A	eligible as an adult	1
	C	eligible as an child	1
	B	eligible as both adult and child in same period	1
	D	eligible as both adult and child in different periods	1
	N	not eligible at any time during year	0
Wisconsin Shares	P	participated as a parent	1
	S	eligible as child receiving care	1
	U	eligible but did not receive care	1
	N	not eligible at any time during year	0
Food Stamps	A	eligible as an adult	1
	C	eligible as an child	1
	D	eligible as both adult and child in different periods	1
	N	not eligible at any time during year	0

The numeric values for each case for each program were summed and saved in a new file (CARESbycase). A value greater than zero indicated that there had been participation during the year in that program by at least one person in the case.

Redefining program participation by ID

All of a case's program participation had to be attributed to each PIN in the case to ensure that the participation coded for each tax filer reflected all of the household's program utilization. Also, a single PIN could have been part of more than one case, and it would then have been affected by the program participation in two or more cases. The participation coded for each tax filer needed to reflect this as well.

The AllCasePIN file described above contained every PIN / case number match. For each PIN in that file, the author looked up the case number in CARESbycase and attached the aggregated program participation information for that case to the PIN. The new file (particbyid) was then aggregated by PIN, summing the numeric participation values for each program. A value greater than zero indicated participation during that year in that program by at least one member of that PIN's household.

Updating program participation codes in tax files

The author looked up each primary and secondary PIN in the RevCARES2 file in the particbyid file and added the aggregated program participation values for each PIN as new fields in RevCARES2. Because these values represented the overall participation in the household, they were the ones used to assess MTRs.

Determining non-tax filing households that remained unmatched

All of the individuals that appeared in one of the program files also appeared in either the matched tax file with program data or in the CARESonly file. But the latter file was organized by PIN instead of by case, and a single PIN could have been part of more than one case. Therefore, simply looking up each PIN in the case number / PIN match file and seeing which of those case numbers were in the updated matched tax file did not work, because the case number / PIN match file may have had multiple entries for a PIN.

Therefore, determining the unmatched non-tax households could not begin with the CARESonly file but had to start with identifying all of the cases represented in the updated matched tax file (RevCARES2). This became complex because of the one-to-many relationships between the PINs in the matched tax file and the case numbers.

The author created a series of special lookup tables to capture all of the PIN / case number matches. The first step was resorting the case number / PIN match file (AllCasePIN) by PIN, then identifying duplicates. The method chosen was to calculate the difference in the sorted list between a record's PIN and the PIN in the preceding record. A difference of zero meant more than one case number for that PIN, and the record was flagged as a single duplicate. The process was

repeated by comparing the record with the second preceding record; if the difference was again zero, the record was flagged as a second duplicate. This process continued for up to six case numbers (testing determined six was the largest number of case matches for any PIN). The author then created the lookup tables with unique PINs by sorting the records first by appearance of no duplicate flags, saving it, then sorting by appearance of a single duplicate flag, saving it, and so on.

The author then matched the primary and secondary (if present) PIN in each record in the updated matched tax file (RevCARES2) to the succession of lookup tables. The results of those twelve matches were merged and aggregated by case number to create a list of all cases in the RevCARES2 file (RC2cases). After giving each of these cases a marker, the RC2cases file was used to look up each case number in the list of all program cases (CARESbycase). The 47,951 cases left without a marker – representing the program cases not linked to a household in the matched tax file – were then saved as CARESnomatch for further analysis.

Determining demographic attributes

The records in the three resulting sources files – RevOnly, RevCARES2, and CARESnomatch – needed to have standardized values for the three non-participation variables affecting MTRs: income, marital status, and family size.

Income

The data sets had three types of income information: wages as reported for unemployment insurance, income as defined for calculation of taxes, and income collected for the benefits program administration. Each of these was problematic³⁹:

unemployment insurance wage reports

- excludes wages earned outside of Wisconsin, wages from an employer not required to report wages, and wages from an employer who fails to report
- excludes unearned income that may be relevant for the tax and benefit calculations involved in assessment of MTRs
- may not capture earnings by persons other than the household head(s) that are relevant for tax and benefit calculations
- many records are missing data

³⁹ Hotz and Scholz (2002) provide a more complete assessment of the strengths and weaknesses of these and survey data sets.

tax records

- data element is Wisconsin adjusted gross income (AGI), which includes many items other than earnings that may be less relevant to MTR analysis
- AGI excludes earnings deferrals (such as a 401(k) plan) and contributions to individual retirement accounts
- AGI can have a negative value, because it includes tax losses such as deductions for depreciation, as well as carryforwards from prior years

program administrative records

- available data reflect manipulations of earnings and other income required by program rules (e.g., standard deduction and earnings disregard in the Food Stamps program), and the degree of manipulation is difficult to discern and accommodate
- several records are missing data

Table 2 shows the results of testing the difference between primary use of wage data and primary use of tax and program administration data by calculating income under each method and comparing the results:

Table 2. Comparison of Wage Data to Tax and Program Administration Data

File Name	Wage Data Lower	Difference <\$100	Wage Data Higher
RevOnly	1,452,382	312,212	550,271
RevCARES2	197,169	95,273	114,235
CARESnomatch	24,832	10,319*	12,800

* income data missing in most of these cases

The author chose to use the tax data (when available) as the primary determinant of household income. The rationale was that the tax data offered the most complete data set, both in terms of number of records with data and in the inclusiveness of the measure. But wage data were used if they provided a higher income value for the household, because this helped eliminate the distortion from losses recognized solely for tax purposes. Therefore, income was deemed to be the greater of tax income (in descending order of preference):

1. Wisconsin AGI (unless negative value, or unless Form 1NPR filed⁴⁰)
2. Federal AGI (unless negative)
3. Income for calculation of Homestead Credit (unless negative)

⁴⁰ Because Wisconsin AGI on Form 1NPR (Nonresident and Part-Time Resident) reflects only Wisconsin income, federal AGI was used for those cases.

or wage income:

Wages in unemployment insurance records for the primary and (when applicable) secondary Social Security Numbers.

For those records without any tax data (CARESnomatch), income was calculated from the program data or, if program data were unavailable, from the wage records, in the following order of preference:

1. Average monthly income in Wisconsin Shares records, multiplied by 12
2. Average monthly net income in Food Stamps records, plus \$134 (the standard deduction), divided by 0.8 (accounting for the 20% earned income deduction), multiplied by 12
3. Average monthly net income in BadgerCare records, plus \$90 (the earned income disregard) and \$175 (the standard child care expense disregard), multiplied by 12
4. Wages in unemployment insurance records for the primary and (when applicable) secondary Social Security Numbers.

To ascertain the program data values (for income but also for family type), the author first aggregated the data in each program file by case number. For Wisconsin Shares, the monthly values for number of parents, number of children, and earnings were averaged. For Food Stamps, the aggregation averaged the monthly values for individuals in the case (total and eligible), net income, and child care deduction claimed. For BadgerCare, the aggregation averaged the monthly values for number of individuals in the case (total and eligible) and net earnings. In all three files, missing values were excluded.

Marital Status

For records drawn from a Wisconsin income tax return, marital status was represented by one of four filing statuses: single, single with dependents (head-of-household), married filing jointly, or married filing separately. In the analysis of the reference file, married filing separately was considered to be single.

For the cases showing up in program files but not matched to a tax record (CARESnomatch), marital status was imputed when possible from the program data. If a case was present in the Wisconsin Shares file, it was coded as single with dependents (equivalent to head-of-household in the tax files) if the average number of parents in the case was one and as married if the average was more than one.

If a case did not participate in Wisconsin Shares but was present in the Food Stamps file (35,195 cases), it was coded as single (without dependents) if the average number of individuals in the case equaled one (over half of the cases). The few cases with an average number in the case of two or fewer and a child care deduction were coded as single. If there were more in the case and a child

care deduction, the record was coded as a parent of indeterminate marital status (and excluded these from the final reference file due to the lack of complete family type information).

For any remaining undetermined cases present in the BadgerCare file and showing two or fewer individuals in the case, the single parent code was assigned. Because a BadgerCare case requires a child, these households must consist of a single parent with one child.

The author gave any remaining undetermined cases with program data a family type value of 10 and gave any remaining cases without program data (representing remaining records in the file only because of child support payment or receipt) a value of 11. Both sets of cases were excluded from the final reference file.

Also problematic were those records showing only a Homestead Credit return. In those cases, the only filing status available was single or married. For those with program data (*i.e.*, in the RevCARES2 file), the author found case number matches using the same method as for determining unmatched non-tax filing households, then looked up the cases in the Wisconsin Shares, Food Stamps, and BadgerCare program files. The same process as above was used to impute marital status based on the program data.

For the remaining Homestead-only records, a code indicating unknown family type was assigned. Although marital status was known in these cases, the absence of information regarding dependents precluded inclusion in the final reference file. The same code was assigned to the Homestead-only records in the RevOnly file.⁴¹

Family Size

Each of the programs included in this study has its own definition of household. Whenever available, the author used the number of dependent exemptions claimed for income tax purposes as determinant of family size. This is referred to as the number of children (*e.g.*, single parent with two children) although the “children” could be other dependents. It is also true that not all dependents may have been resident in the household, but there was no way to identify and exclude those persons from the analysis.

If a case was not in the income tax records but participated in Wisconsin Shares, the average number of children in the case (rounded up) was used as the basis for family size. This probably underestimated family size in many cases, because not all children in a household were necessarily receiving child care.

⁴¹ 59,464 single and 6,918 married cases.

The author also used the Wisconsin Shares and BadgerCare program files to determine the number of children when a program participant filed a tax return showing zero dependents (which would occur, for example, when the personal exemption was transferred to the non-custodial parent after a divorce).

For the remaining cases present in the Food Stamps file, the combination of average number of persons in the case and claim of a child care deduction was again used. If two or fewer were in a case with a child care deduction, the number of dependents was set as one. In the larger cases with child care expenses, the number in the case minus two was used.

If the number of dependents remained undetermined but there was a value in the parent field for the case in the Wisconsin Shares file, the value of that field was deducted from the number of individuals in the Food Stamps case and assigned as the number of dependents.

As with marital status, the author used the program files to impute a number of dependents for those records in RevCARES2 with tax data for the Homestead Credit only. When unavailable, and also when there was Homestead-only data in RevOnly, the number of dependents was made a missing value (meaning exclusion of these records from the final reference file).

Creating reference files

For each of the three matched and updated files (RevOnly, RevCARES3⁴², and CARESnomatch), the author created a new file to capture the eight key variables. Each case was also given a five-character code representing its program participation. For example, a code of “E_C_F” was for a household claiming the EITC and participating in Wisconsin Shares and Food Stamps. A household with code “_B_H_” participated in BadgerCare and claimed the Homestead Credit. This facilitated the search for different combinations of program participation.

The three files were merged into a single file (HG merged) containing 2,769,493 cases. This was considered the final reference file for analyzing overall participation in income support programs (see Part F).

Cases that did not contain the full set of data elements needed to determine MTRs were removed, as were records with an income value greater than \$45,000. The resulting file (Target Final) contained 1,801,298 records. This was considered the final reference file for analyzing program participation among

⁴² RevCARES3 was the RevCARES2 file after the imputations of marital status and number of dependents for the cases with only Homestead Credit data in the tax file.

specific sub-populations (see Part F) and for determining the number of households subject to elevated MTRs (see Part G).

The Target Final reference file had 476,671 cases with participation in at least one of the income support programs.

Excluded Cases

Because of the exclusion from the Target Final reference file of those cases without complete information, some households that participated in income support programs not be represented in the final analysis. This could affect both the analysis of program participation among specific sub-populations and the analysis of the number of households subject to high MTRs.

As shown in Table 3, many of the excluded cases participated in only one program. This limits their relevance to the MTR analysis, because high MTRs result from the cumulative effects of multiple program participation (households participating in only one program would not experience a high rate). The percentage of cases within each MTR-related program that were excluded is also indicated in Table 3:

Table 3. Cases Excluded for Lack of Requisite Information

<i>Program</i>	<i>Total Cases</i>	<i>Excluded Cases</i>	<i>Single Program Participation Cases</i>	<i>Possible Relevant Cases Excluded</i>
EITC	188,699	168	132	0.0%
Homestead	202,886	73,311	67,557	2.8%
Wisconsin Shares	54,305	2,958	1,093	3.4%
Food Stamps	146,600	26,732	17,863	6.1%
BadgerCare	82,976	6,173	2,735	4.1%

***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

*Stephen D. Holt
Holt & Associates Solutions⁴³*

⁴³ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the

Part F: Participation in Income Support Programs

This Part F presents findings regarding actual participation in income support programs in Wisconsin in 2000. The findings are based on the matched tax, public benefits, and wages data set described in Part E.

Data Universe

This analysis looks at participation in the following income support programs: Wisconsin Earned Income Tax Credit (EITC), Wisconsin Homestead Credit, Food Stamps, subsidized child care (Wisconsin Shares), and subsidized health insurance.⁴⁴ There is evidence of participation in one or more of these programs for 476,471 of the 2,769,493 household records in the overall data set. Table 1 indicates the distribution of those households among the source data files:

Table 1. Source of Data for Program Participants

SOURCE FILES	# OF HOUSEHOLDS	% OF UNIFIED DATA SET
Tax AND benefits files	228,239	48%
Tax file only	200,418	42%
Benefits file only	47,934	10%

Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

⁴⁴ Recipients of subsidized health insurance include participation – by persons who are not elderly or disabled (SSI) – in the state’s traditional Medicaid program (Medical Assistance, or MA) and participation in the State Children’s Health Insurance Program (BadgerCare).

Participation by Program

Table 1 indicates the number of households found to be participating⁴⁵ in each of the income support programs:

Table 1. Households Participating in Income Support Programs (Wisconsin, 2000)

Income Support Program		Number of Households
Homestead Credit		202,886
Wisconsin EITC		188,699
Medical		174,213
	MA only	91,337
	BadgerCare	12,263
	MA & BadgerCare ⁴⁶	70,613
Food Stamps		146,600
Wisconsin Shares		54,305

Multiple Program Participation & Participation Rates

Table 2 breaks down the households by the number of income support programs in which they are participating:

Table 2. Program Participation by Number of Programs (Wisconsin, 2000)

Number of Programs in which Participating	Number of Households	Percentage of Participating Households
Five (all)	5,719	1%
Four	27,965	6%
Three	46,970	10%
Two	89,321	19%
One	306,696	64%

⁴⁵ "Participating" in a tax credit program (EITC or Homestead) means that the household claimed the credit for tax year 2000. For a benefits program (Food Stamps, Wisconsin Shares, MA, or BadgerCare), it means that at least one person in the household received benefits in at least one month of 2000. Because of differences among the household definition used here and program definitions of cases, the number of participating households for each of the benefits programs is somewhat higher than the case counts reported by program administrators.

⁴⁶ Because of different eligibility rules for adults and children and variability based on a child's age, a household may be simultaneously eligible for BadgerCare (e.g., parent and an older child) and MA (younger child). A single household could also be enrolled in each program at different times during a calendar year.

The inherent implication in Table 2 is that all households could have participated in five income support programs. However, although a household could be both eligible for and in need of all of the programs under study here, it is more likely that circumstances would reduce the maximum possible program participation to fewer than five. For example, a household without minor children would generally not be eligible for Wisconsin Shares, subsidized health insurance, or the Wisconsin EITC. A family with children may not utilize paid child care or may be covered by employer-based insurance.

Even with the expanded data available for this study, it is not possible to ascertain the actual participation rate – *i.e.*, the percentage of eligible households receiving benefits – for any of these income support programs. Some persons may not be represented in the state matched data files because they neither filed taxes nor applied for any of the benefits programs. There are program eligibility criteria that are not in the data set at all or are not represented consistently (*e.g.*, age of children, relationship of persons in the household, asset ownership, and citizenship status). Income definitions vary by program, and some inclusions and exclusions are not present in these data. Finally, there is no information on household demand for publicly-provided child care or health insurance benefits.

Nonetheless, it is possible to compare participation by looking at sub-populations for whom broad program eligibility is more likely. One such sub-population was single-parent families with two children and earnings below \$18,000 a year in 2000. They were presumably eligible for the EITC⁴⁷, Homestead Credit⁴⁸, Food Stamps⁴⁹, Wisconsin Shares⁵⁰, and either MA or BadgerCare or both⁵¹.

⁴⁷ Eligibility would require that at least one of the children is a “qualifying child”, meaning he or she satisfies the EITC’s relationship and residency requirements. Others who would not be eligible include those with significant investment income, married persons filing separately, and immigrants without valid Social Security Numbers.

⁴⁸ Because the Homestead Credit provides relief from excessive property taxes, residency in tax-exempt housing may make someone ineligible. Also ineligible are those who were full-year recipients of Wisconsin Works TANF cash assistance and those with non-taxable sources of income (principally Social Security payments, which affects mostly the elderly) that push them over the income eligibility limit.

⁴⁹ Some immigrants are ineligible for Food Stamps, as are many households with even very modest assets.

⁵⁰ A person must be working to be eligible for Wisconsin Shares, and the child care must be provided by a licensed, certified, or provisionally certified caregiver.

⁵¹ Regardless of income, BadgerCare eligibility is restricted to those who do not have access to other health insurance.

Table 3 shows the actual program participation, both by program and by combination of programs, among the 30,268 single-headed households with two children within this income range⁵²:

**Table 3. Program Participation
(Single Parent with Two Children, Earnings <\$18,000, 2000)**

Program	Number of Households	Percentage Participating
Wisconsin EITC	24,263	80%
MA / BadgerCare	19,620	65%
Food Stamps	15,602	52%
Wisconsin Shares	11,181	37%
Homestead Credit	6,533	22%
Number of Programs in which Participating	Number of Households	Percentage of Households
Five	1,792	6%
Four	7,227	24%
Three	7,692	25%
Two	5,079	17%
One	6,097	20%
None	2,381	8%

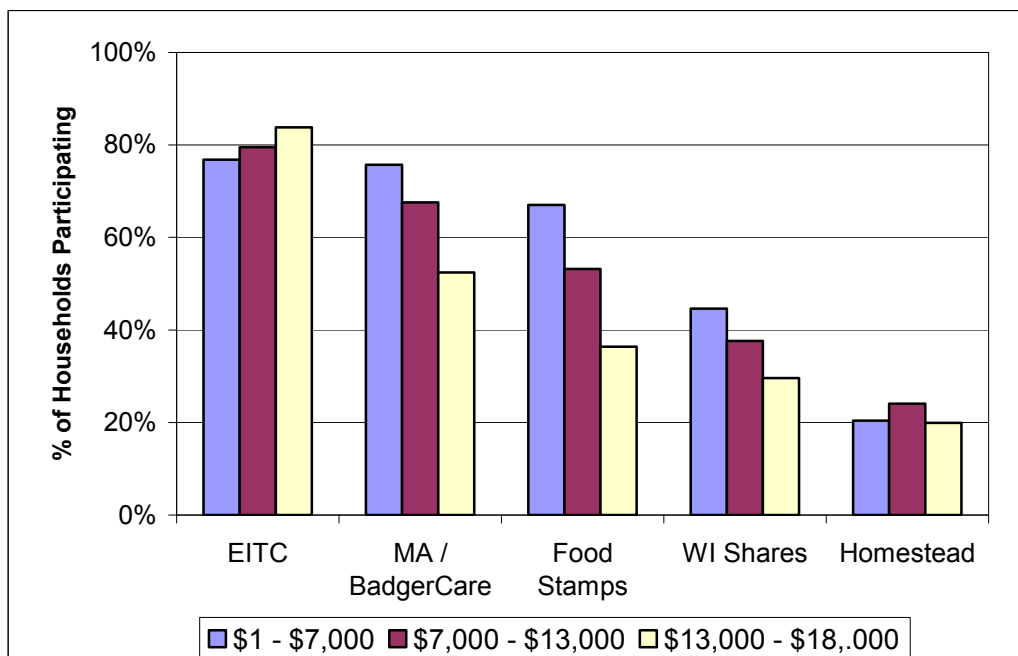
The EITC had the highest participation among this group of households while the other tax credit – Homestead – had the lowest. Subsidized child care was the least utilized of the three benefits program; this is not surprising, because demand among families for paid child care is certainly lower than demand for health care or food. More startling is that 45% of these single-earner families took advantage of no more than two of the income support programs for which, as a group, they should be generally eligible.

Within the single-headed, two-child households with earnings under \$18,000, there were sizeable differences in the likelihood of program participation depending on income. Figure 2 breaks out the percent of households participating in each program by three income ranges⁵³:

⁵² Excluded from this analysis are those cases for which marital status, family size, and income could not be determined (see Part E).

⁵³ These groupings are tied to the varying ability of the worker to meet his household's basic needs. At annual earnings below \$7,000, household resources with full program participation would have financed less than 75% of the adequacy standard (see Part C). Between \$13,000 and \$18,000, household resources with full program participation would have exceeded 100% of the adequacy standard.

**Figure 2. Participation by Program and Income
(Single Parent with Two Children, 2000)**



As earnings rise, participation in the three benefits programs consistently falls. The drop-off is sharpest with Food Stamps, going from 67% of the lowest-income households down to 36% in the highest-income group. This is consistent with the literature on Food Stamp participation.⁵⁴

On the other hand, EITC claims in Figure 2 go up slightly with income. This variation is interesting, because those in the middle-earning group actually received the highest credit amount. Homestead Credit claims are more frequent among the middle group, but the differences are not large (20.4%, 24.1%, and 19.9%, respectively).

Widely varying program participation rates are also seen at higher earnings (e.g., wages of \$13 to \$15 an hour). Single workers with two children and incomes between \$25,500 and \$31,000 a year in 2000 were generally eligible for the EITC and subsidized child care and health insurance.

⁵⁴ See, e.g., Bartlett and Burstein (2004), Farrell *et al.* (2003), Daponte, Sanders and Taylor (1999).

Table 4 looks at participation among the 7,157 households in this sub-population:

**Table 4. Program Participation
(Single Parent with Two Children, Earning \$25,500 - \$31,000, 2000)**

Program	Number of Households	Percentage Participating
Wisconsin EITC	5,069	71%
MA / BadgerCare	1,028	14%
Wisconsin Shares	570	8%

One would not expect the benefits program participation rates to be as high as for the EITC, if only because more households at higher wage levels can obtain employer-based health insurance and a fraction of households at any income level use paid child care. Even accounting for those factors, however, the large disparity between the participation percentages is notable.

Given how few of these higher-earning households are utilizing the benefits programs, very low rates of multiple program participation are not surprising, as seen in Table 5:

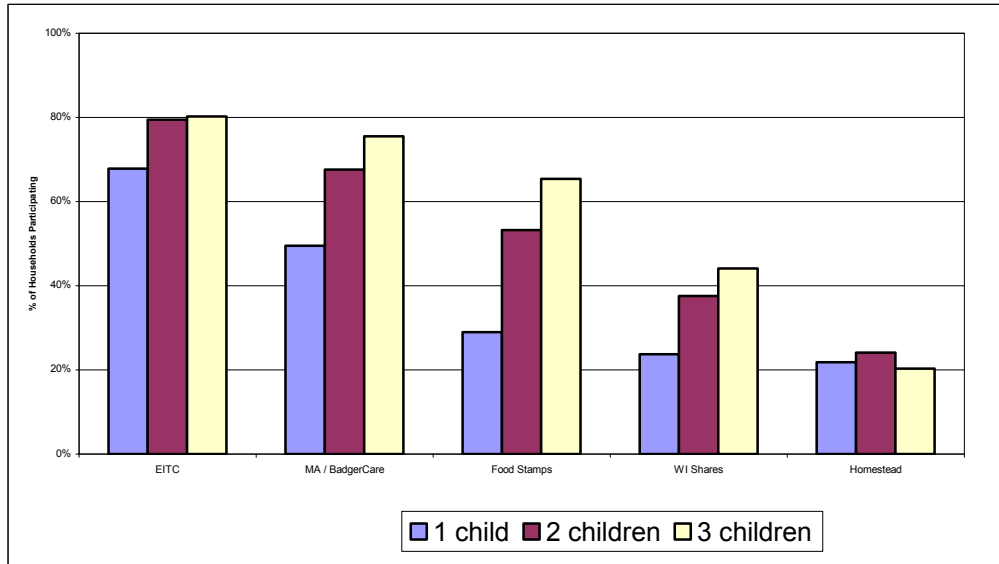
**Table 5. Multiple Program Participation
(Single Parent with Two Children, Earning \$25,500 - \$31,000, 2000)**

Number of Programs in which Participating	Number of Households	Percentage of Households
Three	528	7%
Two	565	8%
One	4,253	60%
None	1,811	25%

Looking at sub-populations of generally eligible households can also provide insight into other factors that may affect program participation. Figure 3 looks at the percentages of one-child, two-child, and three-child single-parent households in similar economic circumstances⁵⁵ that are taking advantage of available programs:

⁵⁵ Figure 3 is based on 23,990 households with one child and income between \$8,000 and \$14,000, 11,218 households with two children and income between \$7,000 and \$13,000, and 4,290 households with three children and income between \$7,500 and \$13,500. Families with these characteristics participating in all of the income support programs would have resources equal to 75% to 100% of the relevant adequacy standard.

**Figure 3. Participation and Number of Children
(Single Parent, 2000)**



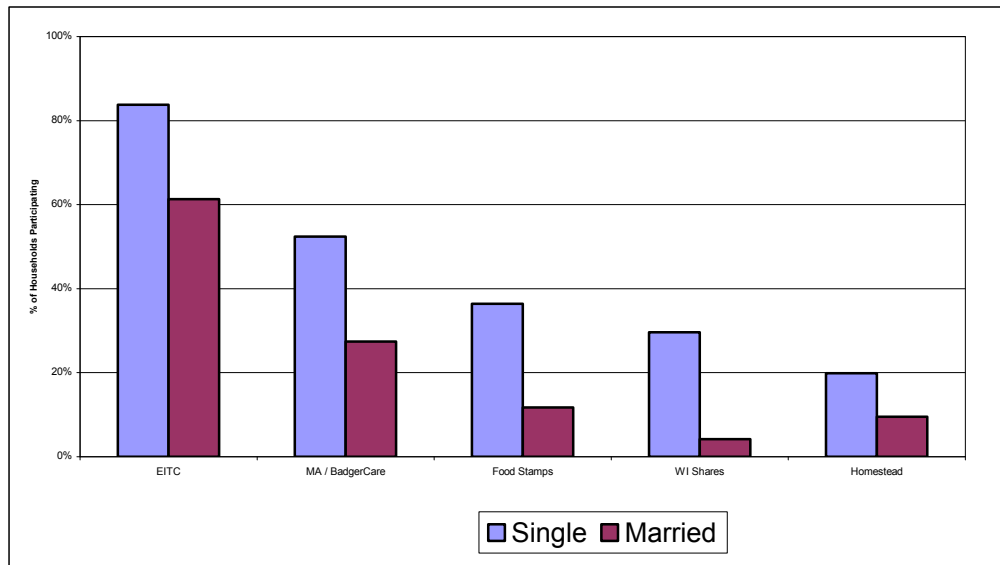
The pattern for the three benefits programs is for greater participation in larger families. This is consistent with the idea that higher benefit amounts lead to higher participation, because the value of the benefits that may be obtained increases based on the number of children in the home. Interestingly, this effect is not observed for the Wisconsin EITC between two-child and three-child families, even though the credit's value is approximately three times greater for the larger households.⁵⁶

Figure 4 examines the effect of marital status on participation by looking at the percentages of single-headed and married couple two-child households in similar economic circumstances⁵⁷ that are taking advantage of available programs:

⁵⁶ The maximum Wisconsin EITC in 2000 for a family with two qualifying children was \$544, and the maximum for a family with three or more children was \$1,672.

⁵⁷ Figure 4 is based on 10,210 single-headed two-child households with income between \$13,000 and \$18,000 and 5,674 married, two-child households with income between \$16,500 and \$21,500. In each case, this is the upper income range for eligibility for all five income support programs. If participating in all programs, the single parent family would have resources just exceeding its adequacy standard, and the married parent family would be at 95% to 99% of its adequacy standard.

**Figure 4. Participation and Marital Status
(Two Children, 2000)**

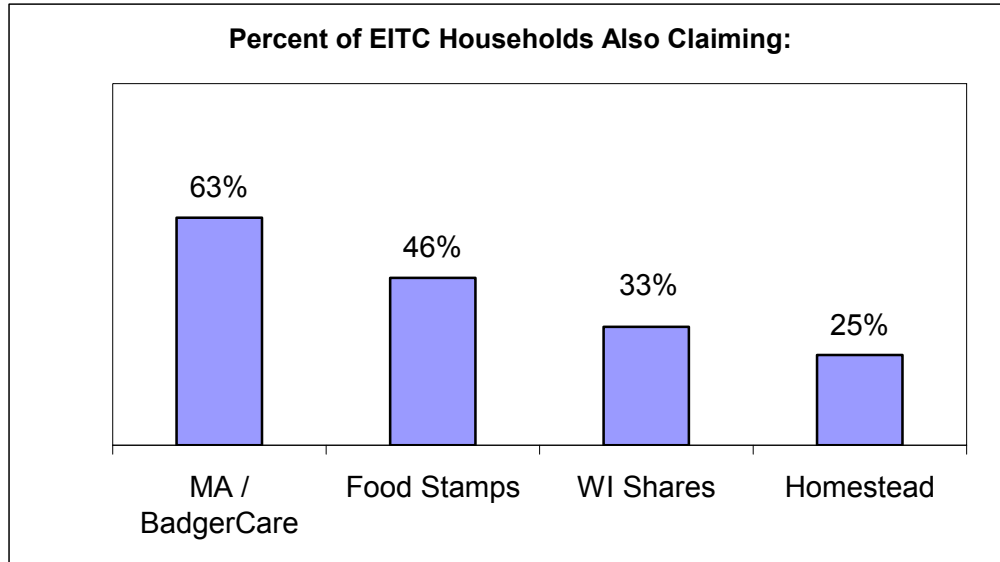


The difference in participation by marital status is stark and consistent across programs. The largest disparity is for Wisconsin Shares, with the percentage of single parent participation seven times the rate for married parents. Of course, households with two caregivers would be expected to use less paid child care. The reasons for differences in the other programs – with single parents participating at one-and-a-half to three times the married parent rate – are less obvious. The finding is nonetheless consistent with the program participation literature.⁵⁸

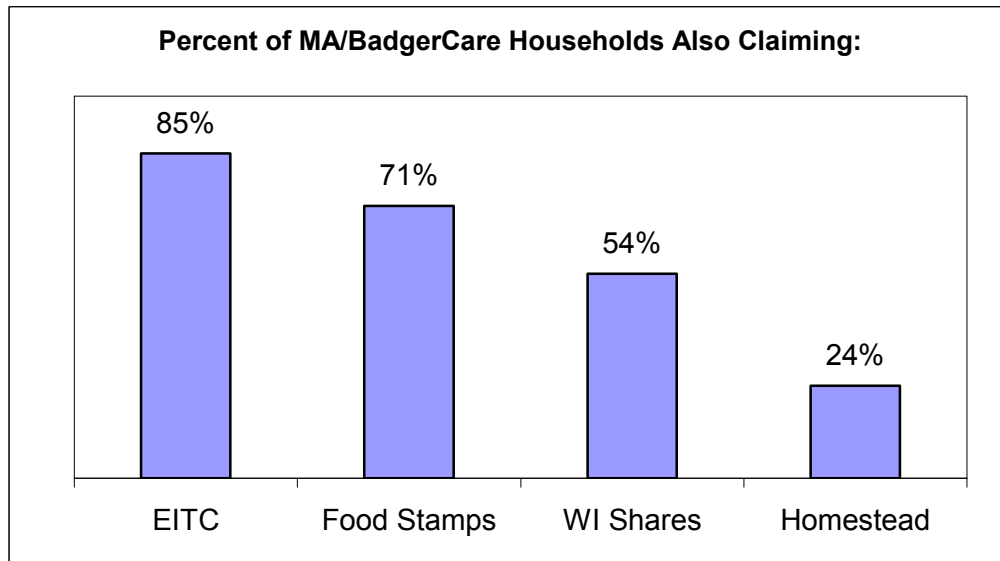
A final set of observations that may be made based on the data set for this study is the incidence of participation in *other* income support programs among each program's participants. The next five charts look at single-parent households with two children and an income of \$7,000 to \$18,000 a year. These 21,428 households were in general eligible for each program, and within this income range families could have claimed the maximum benefits available. Each figure shows the percentages of households in a program who participated in each of the four other programs.

⁵⁸ See, e.g., Ham and Shore-Sheppard (2005), Bartlett and Burstein (2004), Wilde *et al.* (2000), Quinn (2000).

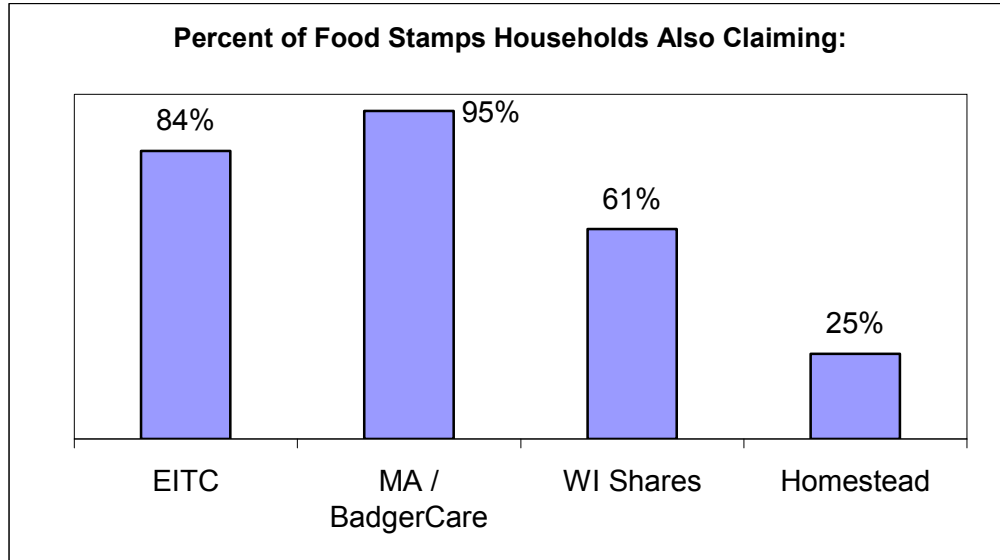
**Figure 5. Other Program Participation by Wisconsin EITC Claimants
(Single Parent with Two Children, Earnings \$7,000 - \$18,000, 2000)**



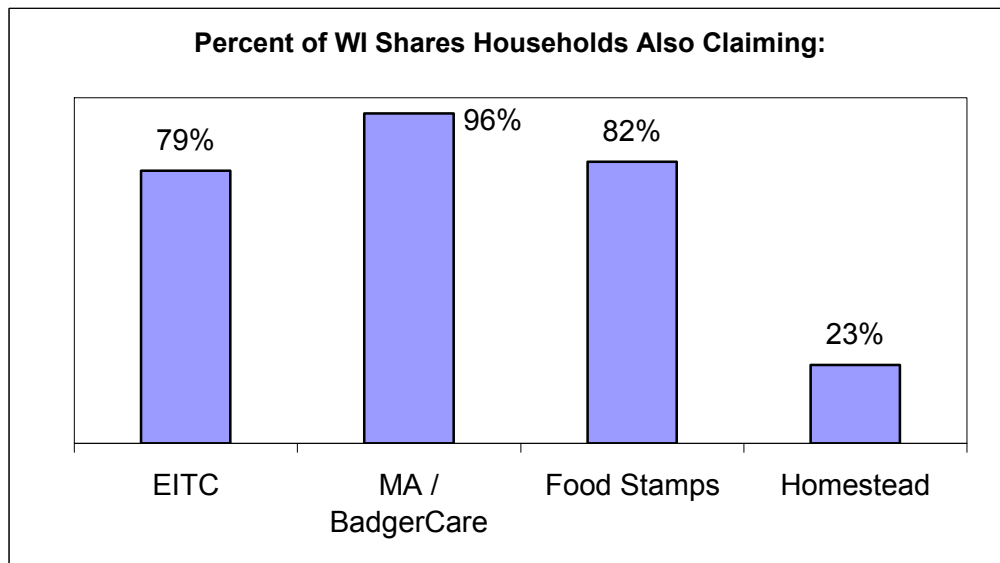
**Figure 6. Other Program Participation by MA / BadgerCare Participants
(Single Parent with Two Children, Earnings \$7,000 - \$18,000, 2000)**



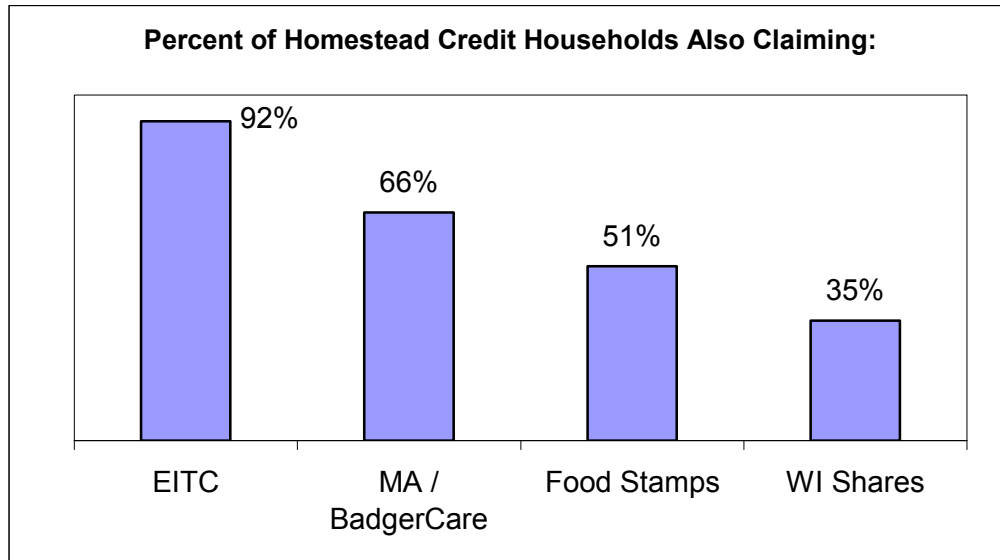
**Figure 7. Other Program Participation by Food Stamp Recipients
(Single Parent with Two Children, Earnings \$7,000 - \$18,000, 2000)**



**Figure 8. Other Program Participation by Wisconsin Shares Participants
(Single Parent with Two Children, Earnings \$7,000 - \$18,000, 2000)**



**Figure 9. Other Program Participation by Homestead Credit Claimants
(Single Parent with Two Children, Earnings \$7,000 - \$18,000, 2000)**



EITC participation is fairly consistent across the three benefits programs, ranging from 79% to 84%. As would be expected, it is higher (92%) among those filing a tax return to claim the Homestead Credit. Interestingly, though, the converse is not true: filing for the EITC does not have an appreciable effect on the rate of claiming the Homestead Credit.

The differential benefit program cross-participation rates provide insights on the relative need for or attractiveness of the benefits programs. Because all three programs are similarly accessed, system engagement is not a significant factor. Free or subsidized health insurance is the most demanded assistance, with nearly all of those receiving Food Stamps (95%) or subsidized child care (96%) also participating in MA and/or BadgerCare. The expected lower demand for subsidized child care is seen in the lower take-up rates among MA/BadgerCare participants (54%) and Food Stamp recipients (61%). However, given the utility of Food Stamp assistance (*i.e.*, all households purchase food), that only 71% of MA/BadgerCare and 82% of Wisconsin Shares participants claim Food Stamps implicates other factors. These could include stigma and compliance issues.

***Making Work Really Pay:
Income Support & Marginal Effective Tax Rates
Among Low-Income Working Households***

Stephen D. Holt

Part G: Incidence of Elevated Marginal Effective Tax Rates among Low-Income Working Households

This Part G presents findings regarding the actual incidence of elevated marginal effective tax rates (i.e., high percentages of additional earnings lost through reductions in income supports) among low-income working households in Wisconsin in 2000.

Determination of Elevated Marginal Tax Rates

A low-income working household's marginal effective tax rate (MTR) is primarily affected by income, marital status, family size, and income support program participation. Using the calculation model described in Part C, the author determined – for each combination of marital status (single or married), family size (number of children), and program participation⁶⁰ – the income ranges (measured at each \$500 increment of earnings) over which elevated MTRs would be experienced. This study uses four elevated MTR categories:

5. extremely high – over 80% (*i.e.*, retention of 20% or less of additional earnings)
6. very high – between 67% and 79%
7. high – between 55% and 66%⁶¹
8. significant – between 43% and 54%⁶²

Elevated MTR income ranges were determined separately for single-headed and married households with zero, one, two, and three children.⁶³

⁵⁹ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

⁶⁰ The income support programs in this study affecting MTRs are the federal and Wisconsin Earned Income Tax Credits (EITC), Food Stamps, Wisconsin Shares (subsidized child care), the Wisconsin Homestead Credit (property tax circuit breaker), and BadgerCare (State Children's Health Insurance Program).

⁶¹ This range begins above the comparable MTR of 54% for higher-income households, composed of Social Security and Medicare taxes (7.65%, without reference to the inapplicability of the former on earnings above \$76,200 in 2000), federal income tax (39.6%, excluding the phase-out ranges of certain deductions and exemptions), and Wisconsin income tax (6.75%).

⁶² This range begins above the MTR experienced by middle-income households: those subject to the 28% federal income tax bracket, as well as payroll and Wisconsin income taxes.

⁶³ These family sizes represented 98.6% of all households with incomes under \$45,000 for whom sufficient information was available to make a MTR determination (see Part E). Making the calculations for all larger family sizes was deemed to be of marginal benefit, especially considering that the accuracy of necessary assumptions regarding household expenditures (*e.g.*, size of dwelling unit, utilization of paid child care) probably decreases as the number of children increases. However, the author did calculate the elevated MTR income ranges for a single

The author also ascertained the income levels at which an additional dollar of earnings could result in a significant reduction in household resources (*i.e.*, a cliff effect, meaning a single MTR point well over 100%). The cliff effects within the scope of this study occur with the loss of Food Stamp benefits, imposition of a premium for BadgerCare, loss of Wisconsin Shares subsidized child care benefits, and loss of BadgerCare coverage. A participating household with earnings within the range \$500 above and below the cliff point identified in the calculation model was considered at immediate risk of experiencing a cliff effect.⁶⁴

Table 1 provides an example of the MTR income range determination results (for a single parent with two children participating in all programs):

**Table 1: Elevated Marginal Tax Rate Income Ranges
Full Program Participation
(Single Parent with Two Children, Wisconsin – 2000)**

MTR Level	Income Ranges (annual)
Extremely High	\$12,000 - \$18,000
Very High	<i>none</i>
High	\$19,000 - \$23,000 \$24,000 - \$31,000
Significant	\$10,000 - \$12,000 \$18,000 - \$19,000 \$23,000 - \$24,000
Food Stamps cliff ⁶⁵	\$17,500 - \$18,500
BadgerCare premium cliff	\$24,500 - \$25,500
Wisconsin Shares cliff	\$27,500 - \$28,500
BadgerCare eligibility cliff	\$33,000 - \$34,000

The author used the matched tax, public benefits, and wages data set described in Part E to calculate the number of households of each configuration and program participation combination with incomes in the indicated ranges.

parent household with four children to confirm similarities in elevated MTR incidence compared to a three-child household.

⁶⁴ This likely yields a conservative estimate of the number of households at risk of experiencing a cliff effect, because income changes may well exceed \$500 a year (equivalent to a \$0.25 increase in a year-round, full-time hourly wage).

⁶⁵ The cliff effect income ranges are not exclusive of the other elevated MTR income ranges, meaning that a household of a given income could be identified as being subject to both a cliff effect and one of the other levels of elevated MTR.

Summary Findings

Among Wisconsin households with three or fewer children⁶⁶ in 2000:

- single parents were the most likely to be affected by elevated MTRs, and married couples without children were the least likely;
- nearly 5,000 households overall were at immediate risk of large resource losses due to cliff effects;
- over 11,000 households were losing over two-thirds of increased earnings due to reduced income supports and added taxes (*i.e.*, very high or extremely high MTRs);
- an additional 20,000 (or roughly 31,000 in all) were subject in 2000 to MTRs higher than those experienced by high-income households (*i.e.*, high MTRs);
- an additional 45,000 (or approximately 76,000 in all) were subject to MTRs higher than those experienced by middle-income households (*i.e.*, significant MTRs); and
- over one-fifth of lower-income single-headed households with children were subject to higher MTRs.

Households Without Children

As noted in Part D, child-oriented income supports play the biggest role in generating elevated MTRs. Households with no children have access to relatively few income supports and receive lower benefits when they are eligible. Therefore, it is not surprising that those households have a very low incidence of elevated MTRs, as seen in Table 2:

⁶⁶ See note 5, *supra*.

**Table 2: Percent of Households with Elevated Marginal Effective Tax Rates
(Households without Children, Wisconsin - 2000)**

	Single, No Children		Married, No Children	
<i># of Households</i>	1,162,576		241,313	
	%	#	%	#
Extremely High MTRs	<i>n/a</i> ⁶⁷	<i>n/a</i>	0.00%	9
Very High MTRs	0.38%	4,442	0.02%	40
High MTRs	0.52%	6,029	0.02%	39
Significant MTRs	0.77%	8,995	0.10%	241
<i>ALL ELEVATED MTRs</i>	1.67%	19,466	0.14%	329
<i>Note: there were no cliff effects for households without children.</i>				

Although the percentage of these households subject to elevated MTRs was small, a large majority of all households do not have children present, so even a small percentage represented several thousand people.

Single Parent Households

After the households without children, the next largest group in the data set was single parents with one child. These households had a much greater exposure to elevated MTRs as a whole (including cliff effects), as shown in Table 3:

**Table 3: Percent of Households with Elevated Marginal Effective Tax Rates
(Single Parent with One Child, Wisconsin - 2000)**

<i># of Households</i>	144,379	
	%	#
Extremely High MTRs	<i>n/a</i>	<i>n/a</i>
Very High MTRs	<i>n/a</i>	<i>n/a</i>
High MTRs	2.86%	3,865
Significant MTRs	17.68%	25,533
<i>ALL ELEVATED MTRs</i>	20.36%	29,398
Cliff effects (all)	1.32%	1,908

⁶⁷ "n/a" indicates that no program combination included in this study generated this level of MTR for this household type.

In larger families, the higher child-oriented benefits make very elevated MTRs more likely. As indicated in Table 4, some single-headed households with two children experienced extremely high MTRs:

Table 4: Percent of Households with Elevated Marginal Effective Tax Rates (Single Parent with Two Children, Wisconsin - 2000)

<i># of Households</i>	61,466	
	%	#
Extremely High MTRs	3.41%	2,093
Very High MTRs	0.75%	459
High MTRs	9.17%	5,637
Significant MTRs	5.44%	3,343
<i>ALL ELEVATED MTRs</i>	18.76%	11,532
Cliff effects (all)	1.70%	1,047

The incidence among the two-child households was more at the higher MTR levels, while overall incidence considering any elevated rate was slightly lower than among the one-child families (18.8% versus 20.4%).

Among single-headed families with three children, there was a higher percentage of households experiencing elevated MTRs in general, as shown in Table 5:

Table 5: Percent of Households with Elevated Marginal Effective Tax Rates (Single Parent with Three Children, Wisconsin - 2000)

<i># of Households</i>	21,299	
	%	#
Extremely High MTRs	2.18%	465
Very High MTRs	11.79%	2,511
High MTRs	6.43%	1,370
Significant MTRs	12.08%	2,572
<i>ALL ELEVATED MTRs</i>	32.48%	6,918
Cliff effects (all)	1.66%	353

Among all of the 227,144 single-headed households with children, 47,848 (21%) were subject to elevated MTRs. In other words, over one-fifth of these families were seeing less benefit from working more or earning more than middle and higher-income households.

Married Parent Households

A similar pattern of variable elevated MTR incidence by number of children can be seen in Table 6 with respect to married parent households, but the overall levels of incidence are much lower⁶⁸:

Table 6: Percent of Households with Elevated Marginal Effective Tax Rates (Married Parents with Children, Wisconsin - 2000)

	1 child		2 children		3 children	
# of Households	54,203		61,979		29,281	
	%	#	%	#	%	#
Extremely High MTRs	0.00%	0	0.06%	38	0.24%	71
Very High MTRs	0.19%	105	0.91%	566	1.05%	308
High MTRs	0.51%	279	1.03%	636	6.94%	2,033
Significant MTRs	6.40%	3,469	0.40%	249	1.67%	489
ALL ELEVATED MTRs	7.11%	3,853	2.40%	1,489	9.91%	2,901
Cliff effects	0.65%	350	1.20%	745	1.24%	364

Figure 1 displays the composition by household type of the 31,006 Wisconsin households that were subject in 2000 to non-cliff effect MTRs in excess of those experienced by persons with high incomes; the labels indicate the number of parents and children (e.g., a single parent with one child is “1p1c”):

⁶⁸ The lower incidence among married parent households reflects, in part, the lower participation in income support programs among married couples (see Part F).

Figure 1: Households with Marginal Effective Tax Rates in excess of 66% (Wisconsin - 2000)

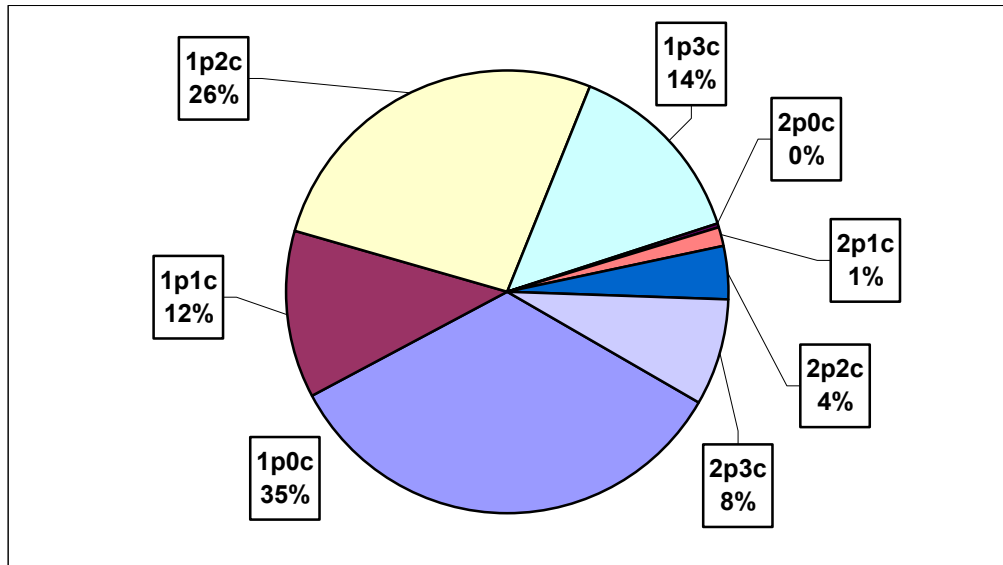
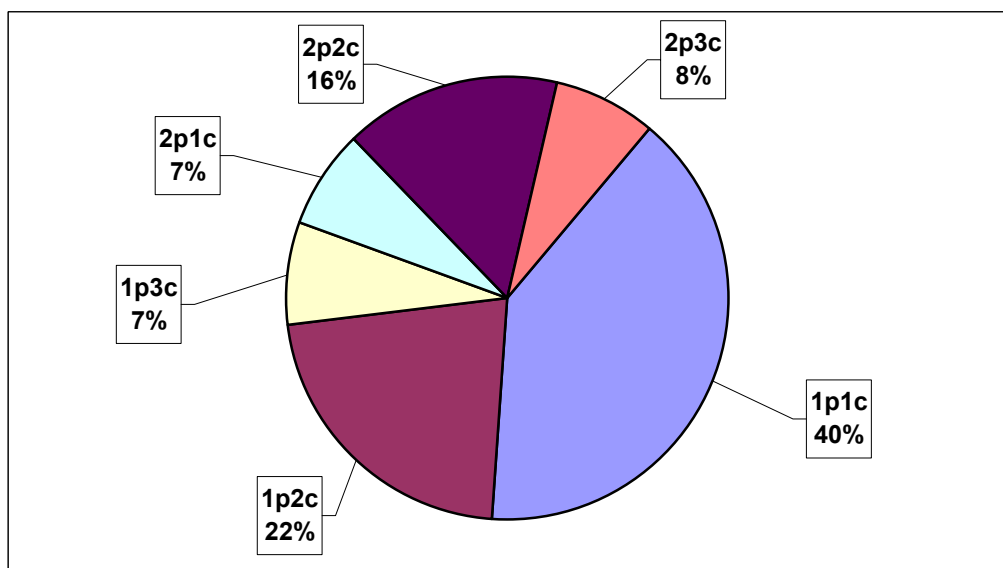


Figure 1 underscores the concentration of elevated MTR incidence among single-headed households: 87% of those with high MTRs were single.

Figure 2 looks at the distribution of the 4,767 identified as being at imminent risk of experiencing a loss of net income due to an income support cliff effect:

Figure 2: Households Subject to Cliff Effects (Wisconsin - 2000)



Again, single-headed households predominate but not to the same extent as in Figure 1 (69% single-headed and 31% married).

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*Stephen D. Holt
Holt & Associates Solutions⁶⁹*

Part H: Policy Implications

This Part H discusses implications of the findings of this study for public policy. It is organized around the following observations:

1. Analysis of income support policy must include reference to a reasonable threshold standard such as a minimally adequate household budget.
2. The utilization rates of most income support programs indicate that the enacted policy of “making work pay” has been incompletely implemented.
3. The income tax system can be an effective means of delivering income assistance.
4. Elevated marginal effective tax rates (*i.e.*, high percentages of additional earnings lost through reductions in income supports) could be ameliorated through changes in program design.
5. Reliably reducing the burden of elevated marginal effective tax rates (MTRs) on lower-income households might require more targeted intervention.

⁶⁹ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author’s research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

Importance of a Reasonable Standard for Program Adequacy

A standard for assessing program adequacy is essential to evaluating whether the portfolio of “making work pay” policies are achieving their objective. The most commonly used measure – the federal poverty guidelines – is of limited use. The standard guidelines do not account for many household resources, and the designated income levels fall short of what is necessary to meet basic household needs (Bouchey *et al.*, 2001).

This study used an adequacy standard that recognized the resources available from income support programs and made more realistic assumptions about necessary expenditure levels. A standard of this type should become the yardstick for analyzing income support policy. A recent approach that appears promising is that used in the National Center for Children in Poverty’s Family Resource Simulator.⁷⁰

Incomplete Implementation of Making Work Pay Policies

On paper, there exists in Wisconsin a mix of income support programs that enable workers with children to support themselves and their families at a minimally adequate level in jobs that pay relatively low wages. Disregarding the MTR implications, these programs also help workers in a wide range of lower-paying jobs stay in the labor force and meet basic economic needs.

Yet these programs are effective only to the extent that the intended beneficiaries know about them and take advantage of them when requiring assistance. This study found low utilization of some programs and low levels of multiple program participation. While this reduces the observed incidence of elevated MTRs, it also suggests incomplete implementation of the work support policies enacted over the past several years.

It is impossible to ascertain from these data the relative importance to low utilization of factors such as lack of awareness, barriers to participation, and absence of need. But the results presented here indicate a need for program administrators to examine outreach strategies, eligibility restrictions, enrollment and recertification processes, and other programmatic features to ensure that maximum efforts are being made to effectuate the income assistance goals of federal and state policy.

⁷⁰ The Family Resource Simulator may be accessed online at <http://nccp.org/modeler/modeler.cgi>.

Role of Tax System in Delivery of Income Assistance

One effect of the increased role of the EITC in combating poverty – a centerpiece of the “making work pay” approach – has been the involvement of the government’s revenue collection operation in the delivery of income assistance. The merits and limitations of that approach have been examined elsewhere.⁷¹

The difference in apparent claim rates between the EITC and Wisconsin’s Homestead Credit is instructive.

Analyses of the federal EITC have estimated relatively high participation among those eligible. Two authoritative participation rate studies estimated that from 80% to 88% of eligible persons were claiming the credit (SB/SE Research, 2002, Scholz, 1994). This study supports those findings, with an estimated claim rate of 88.4% for the Wisconsin EITC in 2000.⁷² The participation rate for the federal EITC was probably even higher.⁷³

Yet the experience with the Homestead Credit is quite different, because the comparable claim rate estimate from this data set is just 22.4%.⁷⁴ Although the actual participation rate was probably higher⁷⁵, there was clearly a substantial difference in take-up between the two programs.

⁷¹ See, e.g., Sammartino, Toder, and Maag (2002); Alstott (1995); and Yin, *et al.* (1994).

⁷² This estimate was obtained by comparing the number of Wisconsin EITC claimants with the following population: households with a qualifying child (using EITC qualifying child data when available and otherwise number of dependents), not eligible to be claimed as a dependent on another return, not filing Nonresident and Part-Year Resident form, income less than \$27,414 if one child, and income less than \$31,153 if more than one child.

⁷³ The data set for this study does not capture households that filed for the federal EITC but did not claim the Wisconsin credit. In 2001, there were 245,925 federal claims in Wisconsin and 189,556 state claims. Some of the federal claims would have been by persons without qualifying children who were thus ineligible for a state credit. Nationally in 2001, 18% of federal EITC claims were by persons with no qualifying children (Internal Revenue Service, 2004). Applying this rate to Wisconsin, there were an estimated 12,147 federal filers with qualifying children who failed to claim the state EITC. Using this method, the estimated federal credit participation rate was 96%.

⁷⁴ This estimate was obtained by comparing the number of Homestead Credit claimants with the following population: not eligible to be claimed as a dependent on another return, not filing Nonresident and Part-Year Resident form, and income less than \$24,501.

⁷⁵ Persons appearing to be eligible based on this data set may not have been because of residence in tax-exempt housing, receipt of significant non-taxable income that are considered in calculating the Homestead Credit (such as Supplemental Security Income), or because of the effect of the relationship in the credit formula between property taxes paid (imputed for renters) and household income.

Several unique programmatic characteristics may explain why the Homestead Credit is so less utilized:

- outreach efforts to increase awareness of the Homestead Credit have been much more limited than for the EITC
- claiming the Homestead Credit requires filing a separate form with several additional data elements
- a renter claiming the Homestead Credit must also file a rent certificate signed by each landlord

Taken together, this study indicates that the tax system can be an effective means of delivering income assistance to a high percentage of those eligible *if* there is adequate information about availability of benefits and there are not unusual barriers to filing claims.

Potential Amelioration Through Programmatic Changes

It may be possible to reduce the impact of elevated MTRs by making changes in the individual assistance programs. But the tradeoffs inherent in any change, both those stemming from the relationships among phase-out rates, benefit levels, and program costs, as well as those related to program-specific issues, mandate a careful approach.

What must not be done is any retreat from the “making work pay” commitment. By increasing benefits that then must be phased-out, those policies have indeed contributed to the MTR problem. But cutting benefits would be shortsighted. We need instead to reinforce the social contract that ensures that those who work are able to support themselves and their families. Accordingly, any policy analysis should include reference to an adequacy standard such as the one used in this study. Benefit reductions would generally fail this test.

Table 1 summarizes a few policy options and their key advantages and disadvantages:

Table 1. Selected Policy Options to Address Elevated Marginal Rates

<i>Change</i>	Advantages	Disadvantages
Eliminate Food Stamp gross income test	Eliminate Food Stamp cliff effect Reduce nutrition-related risks associated with sudden loss of benefits	Extends range of incomes affected by regular program MTR Costly
Combine dependent exemption, EITC, & CTC (e.g., Simplified Family Credit ⁷⁶)	Reduces MTRs Simplify program administration Could be financed internally in the tax code by restructuring recent & pending tax cuts	Difficult to enact major shifts in federal tax policy Very costly
Phase in Wisconsin Shares co-payment smoothly instead of in steps	Eliminates large co-payment (& MTR) spikes	Doesn't reduce overall program MTR Requires more frequent co-payment adjustments (increasing burden on providers)
Decrease rate of increase in Wisconsin Shares co-payments	Lowers overall MTRs	Increases magnitude of income eligibility cliff effect Accelerates spending in program with recent rapid growth
Charge all BadgerCare participants a phased-in premium	Eliminates BadgerCare premium cliff effect Steepest phase-in would be in range with lowest current MTRs	Changes policy protecting those under 150% of poverty from premium charges Increases non-cliff MTRs Potentially deters program participation

⁷⁶ The Simplified Family Credit would create a unified credit having a phase-in similar to the current federal EITC, an extended range with a lower phase-out rate, and a universal benefit floor eliminating the need for a complete phase out to \$0 (Sawicky and Cherry, 2001; Cherry and Sawicky, 2000). The Earned Income Child Credit is another proposal for harmonizing current federal tax benefits for families with children and addressing the MTR issue (Carasso, Rohaly and Steuerle, 2001). Other approaches may be found in Ellwood and Liebman (2001) and Sawhill and Thomas (2001).

Eliminate income eligibility ceiling for BadgerCare	Eliminates BadgerCare eligibility cliff effect Relies on program-related need assessment (lack of employer health insurance) to drive eligibility	Accelerates spending in program that has grown rapidly Extends range of incomes affected by program's MTR
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The last policy option in Table 1 – eliminating an income eligibility ceiling – could also be used generally to reduce or even eliminate program-related MTRs. Universal, non-means-tested income assistance programs emphasize the poverty alleviation and work incentives aspects of the “iron triangle of welfare” over cost limitation. Therefore, they require substantially higher expenditures. These could be financed through increasing the revenue obtained from a progressive income tax that would count assistance received as taxable income. In effect, this would be a risk sharing approach that would spread the MTR incidence across a broader population.

In looking at policy options, it should be noted that there have been changes since 2000 affecting the MTRs experienced by the households under consideration here. The 2001 federal tax legislation created a new 10% tax bracket and a refundability feature for the CTC. These changes reduced the overall MTR by ten percentage points or more for many households (Burman and Saleem, 2004; Burman, Maag and Rohaly, 2002).

Need for Targeted Interventions

The findings in this study of uneven incidence of elevated MTRs and the association with multiple program participation argue for targeted interventions that recognize the interaction of existing programs.

An existing example of this type of approach is the Minnesota Working Family Credit, that state's version of the EITC. Enacted in 1998, the Working Family Credit makes partial accommodation for the high MTRs generated by other programs through a two-tier structure. The first tier is much like the federal EITC, phasing in over the “make work pay” range and then maintaining the maximum benefit over the next income range. But instead of then decreasing as incomes continue to rise, the second tier phases in an additional benefit. Once the maximum second tier benefit is reached, the credit then gradually phases out. The second tier phase-in constitutes a *negative* MTR that partially offsets the high cumulative MTRs in that income range (Wilson, 2000). The Minnesota methodology could be used with other programs to help reduce the incidence of the highest MTRs.

Another aspect of targeting is to avoid using “cannon” policy tools when a “rifle” approach is more appropriate. For instance, one way to reduce the highest

MTRs would be to extend the phase-out range of the federal EITC enough to lower that program's maximum MTR from 21% to 12.5%.⁷⁷ Based on the 2000 data, in Wisconsin this would have increased benefits for about 125,000 current claimants and created eligibility for an additional 75,000 households. But only a fraction of those households had the program participation mixes and incomes causing the highest MTRs. Such a change, albeit relatively simple, would be very expensive and inefficient.

The ultimate targeted intervention would be an earnings guarantee credit administered through the income tax system. The idea is to ensure that workers are able to recoup a minimum percentage (20%, 30%, 40%) of year-to-year earnings growth. Such a credit would have been calculated as follows for 2000:

1. Subtract 1999 earnings from 2000 earnings.
2. Determine total earnings, taxes, and benefits in 1999.
3. Determine total earnings, taxes, and benefits in 2000.
4. Subtract 1999 total from 2000 total.
5. Multiply #1 (earnings growth, if any) by credit guarantee percentage.
6. Subtract #4 from #5 to get credit amount.

Table 2 shows the application of the earnings guarantee credit to a single parent with two children who received a January 1, 2000 raise that made her ineligible for Food Stamps.

**Table 2. Earnings Guarantee Credit
(Single Parent with Two Children, Wisconsin - 2000)**

	<i>1999</i>	<i>2000</i>
Earnings	\$17,500	\$19,000
Taxes	(\$1,590)	(\$1,821)
Refundable Tax Credits	\$3,521	\$3,055
Food Stamps	\$1,347	\$0
Child care co-payment	(\$1,500)	(\$1,750)
NET INCOME	\$19,278	\$18,484
Year-to-Year Earnings Change		\$1,500
Guarantee Amount (20%)		\$300
Year-to-Year Net Income Change		(\$794)
<i>Earnings Guarantee Credit</i>		<i>\$1,094</i>

⁷⁷ This would have increased the EITC income eligibility ceiling to \$31,500 for families with one child and to \$43,800 for families with two or more children.

This individualized amelioration is somewhat fanciful, and it has several potential limitations (e.g., need for considerable data coordination, separation in time between some MTR impacts and credit payment, failure to address longer-term financial impact of cliff effect losses). Nonetheless, this type of approach does merit further exploration.

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Holt & Associates Solutions⁷⁸*

Part I: Questions for Additional Research

This Part I outlines issues associated with this study that would benefit from additional research.

Effect of Post-2000 Federal Tax Law Changes

The years since 2000 have seen enactment of major federal tax legislation. These have affected the marginal effective tax rates (*i.e.*, the percentage of additional earnings lost through reduction in income supports) affecting low-income working households (Burman and Saleem, 2004; Burman, Maag and Rohaly, 2002). Changes such as the creation of a 10% tax bracket and addition of a refundability feature to the Child Tax Credit (CTC) have lowered the marginal effective tax rate (MTR) for many. On the other hand, the refundable CTC has resulted in a higher MTR for some taxpayers because of interaction with other features of the tax code. Changes in the Child and Dependent Care Tax Credit have included a higher phase-out over a longer range of incomes. Modifications geared toward marriage penalty relief – such as the higher standard deduction and a different phase-out range for the Earned Income Tax Credit (EITC) – have also affected MTRs.

⁷⁸ This paper is part of a report that incorporates both research funded with a grant from the American Tax Policy Institute and the author's research under contract with the New Hope Project (with funding provided by The Annie E. Casey Foundation, the Rockefeller Foundation, and the Joyce Foundation). Presentations of partial findings from this research were made at the Association for Public Policy Analysis and Management November 2003 conference in Washington, DC and the National Association for Welfare Research and Statistics August 2004 conference in Oklahoma City, OK.

The federal tax law changes provide an opportunity to do a rough study of the costs and benefits of MTR relief. For example, the analysis for this paper found the highest MTRs for single parents with two children were in the \$12,000 to \$18,000 income range. Matching the net effect of the new tax laws on the MTRs for this group with the net cost of those changes to federal revenue could be very useful for policymakers looking at alternative approaches to amelioration.

Year-to-Year Variability

This study looked at only one year. It is not known whether the exposure of particular households to elevated MTRs in 2000 was an isolated occurrence or a longer-term phenomenon. Answering this question is of tremendous importance in assessing the importance of addressing MTRs and in tailoring policy solutions to those most in need of relief.

The New Hope Project has executed an agreement with the State of Wisconsin to obtain the same set of matched administrative data files for calendar years 2001 and 2002. The files will be similarly structured to enable replication of the analytical methodology employed here. More importantly, the masked identifiers in those files will be consistent with the 2000 data, thus permitting longitudinal analysis.⁷⁹

Variable Incidence Within Each Year

The analysis in this study is a type of snapshot that measures exposure to elevated MTRs due to program participation *at any time* in 2000, matched, in most cases, to a year-end assessment of income and household configuration. This reflects the annualized character of the tax system. The actual incidence of MTRs is much more complicated, however. The non-tax assistance programs are generally based on monthly data. Among the programs, there is variability in the extent to which month-to-month changes, particularly in income, affect eligibility and benefit levels.⁸⁰ Much program participation is also periodic and sporadic, often for reasons not evident in the data sets. This is especially true for subsidized child care.

The state non-tax benefits program files used in this analysis have monthly data. Receipt of the 2001 and 2002 files will create a rich data set that will provide an opportunity for a more refined analysis of household MTR exposure.

Recognition of Elevated Marginal Tax Rate Impacts Among Those Affected

⁷⁹ Hotz and Scholz (2003) cite the importance of longitudinal studies.

⁸⁰ Wilson and Cline (1994) note this problem in integrating state income assistance and tax systems.

A household that has experienced a MTR cliff effect will presumably know it and recognize the link to an increase in income. This information could come from a caseworker informing the recipient that she is no longer eligible for a program or from a tax preparer noting that income is now too high to continue receiving a credit.

It is much less likely that a worker would know in advance about an impending cliff effect. One means of inferring recognition of cliff effects would be to look at clustering in household income distribution at those income ranges just below cliff points. It can be theorized that those experiencing a large loss of benefits would respond by lowering household income below the cliff point to restore eligibility and would attempt to maintain benefits receipt in that manner. These individual household responses would show up in distributional clustering.

With respect to the elevated MTRs that produce income stagnation, it is virtually certain that a worker would be unable to anticipate the cumulative programmatic impact. This is probably true even after the actual experience of receipt of lower income supports (including even the elimination of benefits in a steadily phased-out program) or imposition of higher taxes. Those experiences would occur in different contexts over a range of time, and perception could be clouded by other household changes that also affected eligibility and benefit levels.

EITC researchers have noted this problem of cognition when considering the credit's effectiveness in achieving its intended goals, even when noting relatively high awareness of the program and its general characteristics.⁸¹ Income support programs with lower rates of participation may be associated with greater knowledge deficits.

An assessment of recognition of elevated MTRs would be qualitative. The New Hope Project has conducted pilot focus groups designed to elicit discussion of MTR impacts among those most likely to be affected. The results from that pilot effort, together with earlier studies (Smeeding, Phillips and O'Connor, 2001; Romich and Weisner, 2001), could provide a framework for targeting more intensive ethnographic inquiry.

Behavioral Consequences of Elevated Marginal Tax Rate Experiences

One reason to be concerned about elevated MTRs is philosophical: it is unjust for struggling families to see so little return for increased earnings or work effort. But more persuasive for most, including policymakers, would be identification of negative behavioral responses among affected households.

⁸¹ Holtzblatt, McCubbin and Gillette (1994) discuss this issue from a theoretical perspective. Smeeding, Phillips and O'Connor (2001) and Romich and Weisner (2001) reflect surveys of and interviews with members of the target population.

These behavioral responses could take many forms. A worker attempting to avoid a cliff effect could leave a better-paying job or decline offers for advancement. A person experiencing income stagnation over time might give up on taking on overtime or pursuing career advancement (including forgoing skills development). One might also expect to see a general disengagement or loss of hope stemming from a belief that “a regular person just can’t get ahead.”

Two recent studies of the EITC raise important issues regarding both cognition and behavior related to *negative* MTRs (*i.e.*, the credit’s phase-in range). Hotz, Mullin and Scholz (2003) looked at a sample of administrative data for AFDC recipients in California. They found that “while our data show patterns consistent with the EITC increasing employment, tax data make it clear that the EITC is not causing the observed patterns.” They note that this raises doubts about the presumed causal connections found in earlier studies using cross-sectional survey data. Meyer (2002) similarly questions earlier simulation studies, because they assume labor supply adjustment both in terms of participation and hours worked. His data analysis found little responsiveness to the EITC incentive in hours or weeks worked.

It is clear that much more needs to be known about behavioral consequences associated with MTRs (both positive and negative). Ethnographic research would presumably provide useful insights. Another approach would be surveys and more intensive interviews of human resource managers, union representatives, and small business owners to identify behavioral patterns and anecdotal data that could be linked to experiences related to MTRs. Econometric analysis incorporating cumulative MTRs could also provide indications of the policy importance of addressing the elevated MTR issue.

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*Stephen D. Holt
Holt & Associates Solutions*

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