# Is There an Incentive for Mississippians Receiving Public Assistance to Work?

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#### Introduction

If you ask most Mississippians, the purpose of public assistance is to aid needy families until they become self-sufficient. This is true even when you only ask Mississippians who receive public assistance. In reality, some families never end their dependence on public assistance and some even pass that dependence from one generation to the next. The goal of this paper is to examine how economic reasoning might play a role in long-term dependence on public assistance. One of the most basic axioms in economics is that people respond to incentives. Assuming this is true, is it possible that the structure of Mississippi's public assistance programs incentivizes individuals to remain dependent? The goal of this paper is to group public assistance programs aimed at helping the poor into a package and discuss how that package changes as the head of household increases the number of hours worked. Examining public assistance as a package as opposed to examining each program individually is what makes this paper unique. It is important to view the programs in totality because many families receive more than one form of public assistance.

Similar research was conducted by Acs et al. (1998) using 1997 data from twelve states. The authors' basic question is whether it pays to work in light of the welfare rules imposed nationwide in 1996. Mississippi is one of the twelve states in the study, and overall the authors find that incomes increase by approximately 51 percent for a representative family of three (a mother and two children) living in Mississippi when the adult moves from not working to working twenty hours per week at minimum wage (\$5.15 per hour at that time). While Acs et al. assume that a family with zero earned income receives the maximum benefits and then examine working twenty hours per week, current laws require most households have at least one family member working a minimum of twenty hours per week to qualify for benefits. Because Acs et al. compare public assistance programs across states, they prefer not to calculate the effective marginal tax rate and instead focus on the increase in gross income. The authors feel that calculating an effective tax rate may not be a fair comparison across states due to how varied the initial amount of aid is in each state when the head of household is not working.

Focusing exclusively on Mississippi, this paper examines whether public assistance programs offer program participants an incentive or disincentive to work additional hours when those hours are available. We calculate the effective marginal tax rate a family experiences when the head of household works an additional ten hours per week. The effective marginal tax rate includes payroll taxes (Medicaid and Social Security), state income taxes, federal income taxes, and six programs designed to aid poor families. The programs included in this report are the Supplemental Nutrition Assistance Program (SNAP), the Women Infants and Children (WIC) program, housing subsidies by the US Department of Housing and Urban Development (HUD), Temporary Assistance for Needy Families (TANF), the Earned Income Tax Credit (EITC), and Medicaid. The information in this paper will serve as a foundation for lawmakers and constituents to begin a larger conversation about whether those who receive public assistance are being properly incentivized to work.

## PROGRAM DESCRIPTIONS

Table 1 shows program eligibility for each family at each income level. We discuss each program in detail before discussing the effective marginal tax rates.

Table 1. Program Eligibility by Family Size

			Pro	gram Elig	ibility					
	Hourly	Hours Worked	Annual	Monthly						
Family	Wage	per week	Income	Income	TANF	SNAP	WIC	HUD	EITC	Medicaid
Single adult	7.25	20	7,540	628		*		*	*	
1 adult, 1 child	7.25	20	7,540	628		*	*	*	*	*
1 adult, 3 children	7.25	20	7,540	628		*	*	*	*	*
2 adults, 1 child	7.25	20	7,540	628		*	*	*	*	*
2 adults, 4 children	7.25	20	7,540	628	*	*	*	*	*	*
Single adult	7.25	30	11,310	943		*		*	*	
1 adult, 1 child	7.25	30	11,310	943		*	*	*	*	*
1 adult, 3 children	7.25	30	11,310	943		*	*	*	*	*
2 adults, 1 child	7.25	30	11,310	943		*	*	*	*	*
2 adults, 4 children	7.25	30	11,310	943		*	*	*	*	*
Single adult	7.25	40	15,080	1257		*		*		
1 adult, 1 child	7.25	40	15,080	1257		*	*	*	*	*
1 adult, 3 children	7.25	40	15,080	1257		*	*	*	*	*
2 adults, 1 child	7.25	40	15,080	1257		*	*	*	*	*
2 adults, 4 children	7.25	40	15,080	1257		*	*	*	*	*
Single adult	8.50	20	8,840	737		*		*	*	
1 adult, 1 child	8.50	20	8,840	737		*	*	*	*	*
1 adult, 3 children	8.50	20	8,840	737		*	*	*	*	*
2 adults, 1 child	8.50	20	8,840	737		*	*	*	*	*
2 adults, 4 children	8.50	20	8,840	737		*	*	*	*	*
Single adult	8.50	30	13,260	1,105		*		*	*	
1 adult, 1 child	8.50	30	13,260	1,105		*	*	*	*	*
1 adult, 3 children	8.50	30	13,260	1,105		*	*	*	*	*
2 adults, 1 child	8.50	30	13,260	1,105		*	*	*	*	*
2 adults, 4 children	8.50	30	13,260	1,105		*	*	*	*	*
Single adult	8.50	40	17,680	1,473				*		
1 adult, 1 child	8.50	40	17,680	1,473		*	*	*	*	*
1 adult, 3 children	8.50	40	17,680	1,473		*	*	*	*	*
2 adults, 1 child	8.50	40	17,680	1,473		*	*	*	*	*
2 adults, 4 children	8.50	40	17,680	1,473		*	*	*	*	*
Single adult	10.00	20	10,400	867		*		*	*	
1 adult, 1 child	10.00	20	10,400	867		*	*	*	*	*
1 adult, 3 children	10.00	20	10,400	867		*	*	*	*	*
2 adults, 1 child	10.00	20	10,400	867		*	*	*	*	*
2 adults, 4 children	10.00	20	10,400	867		*	*	*	*	*

Family	Hourly Wage	Hours Worked per week	Annual Income	Monthly Income	TANF	SNAP	WIC	HUD	EITC	Medicaid
Single adult	10.00	30	15,600	1,300				*		
1 adult, 1 child	10.00	30	15,600	1,300		*	*	*	*	*
1 adult, 3 children	10.00	30	15,600	1,300		*	*	*	*	*
2 adults, 1 child	10.00	30	15,600	1,300		*	*	*	*	*
2 adults, 4 children	10.00	30	15,600	1,300		*	*	*	*	*
Single adult	10.00	40	20,800	1,733						
1 adult, 1 child	10.00	40	20,800	1,733			*	*	*	*
1 adult, 3 children	10.00	40	20,800	1,733		*	*	*	*	*
2 adults, 1 child	10.00	40	20,800	1,733		*	*	*	*	*
2 adults, 4 children	10.00	40	20,800	1,733		*	*	*	*	*
Single adult	12.00	20	12,480	1,040		*		*	*	
1 adult, 1 child	12.00	20	12,480	1,040		*	*	*	*	*
1 adult, 3 children	12.00	20	12,480	1,040		*	*	*	*	*
2 adults, 1 child	12.00	20	12,480	1,040		*	*	*	*	*
2 adults, 4 children	12.00	20	12,480	1,040		*	*	*	*	*
Single adult	12.00	30	18,720	1,560				*		
1 adult, 1 child	12.00	30	18,720	1,560		*	*	*	*	*
1 adult, 3 children	12.00	30	18,720	1,560		*	*	*	*	*
2 adults, 1 child	12.00	30	18,720	1,560		*	*	*	*	*
2 adults, 4 children	12.00	30	18,720	1,560		*	*	*	*	*
Single adult	12.00	40	24,960	2,080						
1 adult, 1 child	12.00	40	24,960	2,080			*		*	
1 adult, 3 children	12.00	40	24,960	2,080		*	*	*	*	*
2 adults, 1 child	12.00	40	24,960	2,080		*	*	*	*	*
2 adults, 4 children	12.00	40	24,960	2,080		*	*	*	*	*
Single adult	15.00	20	15,600	1,300				*		
1 adult, 1 child	15.00	20	15,600	1,300		*	*	*	*	*
1 adult, 3 children	15.00	20	15,600	1,300		*	*	*	*	*
2 adults, 1 child	15.00	20	15,600	1,300		*	*	*	*	*
2 adults, 4 children	15.00	20	15,600	1,300		*	*	*	*	*
Single adult	15.00	30	23,400	1,950						
1 adult, 1 child	15.00	30	23,400	1,950			*		*	
1 adult, 3 children	15.00	30	23,400	1,950		*	*	*	*	*
2 adults, 1 child	15.00	30	23,400	1,950		*	*	*	*	*
2 adults, 4 children	15.00	30	23,400	1,950		*	*	*	*	*
Single adult	15.00	40	31,200	2,600						
1 adult, 1 child	15.00	40	31,200	2,600					*	
1 adult, 3 children	15.00	40	31,200	2,600			*		*	*
2 adults, 1 child	15.00	40	31,200	2,600			*		*	
2 adults, 4 children	15.00	40	31,200	2,600		*	*	*	*	*

This table provides an indicator for whether a family meets the requirements to participate in specific public assistance programs based on their family composition and income.

#### Supplemental Nutrition Assistance Program (SNAP)

To aid poor families, the Supplemental Nutrition Assistance Program (SNAP) provides food vouchers valued at the difference between a nutritious basket of food and 30 percent of a family's net income (USDA, 2014). The government determines the cost of a nutritious basket of food using its Thrifty Food Plan. This plan creates a basket of food that allows families of various sizes to have nutritious meals and snacks each day at a low cost (see Table 2). Consider a family of four with a net income of \$900 per month. SNAP uses the Thrifty Food Plan and the number of family members to determine how much that family should spend on food per month. For a family of four (one male and one female ages 19-50 and children ages 7 and 10) the Thrifty Food Plan sets the cost of a nutritious basket of food at \$648.70 per month. The USDA Thrifty Food Plan values are reproduced in Table 2 (USDA, 2015b). SNAP expects the family to pay \$270 towards their food cost every month (30 percent of \$900). This means the family should receive a \$378.70 (\$648.70-\$270.00) SNAP voucher. As the family's income increases so does the family's required 30 percent contribution to their food costs. SNAP uses net income to determine the amount of funding instead of gross income. The difference between net income and gross income is allowances for rent and childcare that are deducted from a family's gross income.

Table 2. Thrifty Plan Cost

USDA Thrifty Plan Cost, May 2015					
Age/Gender Group	Thrifty Plan Monthly Cost				
1 year both genders	\$94.50				
2-3 years both genders	\$103.50				
4-5 years both genders	\$108.90				
6-8 years both genders	\$139.40				
9-11 years both genders	\$156.60				
12-13 years male	\$168.70				
12-13 years female	\$168.80				
14-18 years male	\$173.60				
14-18 years female	\$165.60				
19-50 years male	\$187.10				
19-50 years female	\$165.70				
50-70 years male	\$170.60				
50-70 years female	\$164.00				
71+ years male	\$171.90				
71+ years female	\$159.30				

This table shows how much a person should spend a month on food if they follow the thrifty food plan provided by USDA.

The SNAP estimates used in this paper assume the families have no out-of-pocket rent or child care costs.

In general, there is no waiting list for SNAP benefits and everyone who meets the qualifications receives benefits (CBPP, 2016). For this study, we use the SNAP estimator on the USDA website and assume families receive the median SNAP benefit given by the estimator (USDA, nd.). Table 3 lists the income limits for SNAP and the maximum amount any family can receive based on family size. Generally, those receiving the SNAP benefits who are not children, elderly, or disabled are required to work at least twenty hours per week. There are very few exceptions (USDA, 2015a; USDA, 2016a).

Table 3. SNAP

			Gross Monthly Income Eligibility	
Household	Gross Monthly Income	Net Monthly Income Eligibility	Standards where Elderly Disabled	
Size	Eligibility Standards	Standards	are a Separate Household	Max Benefit (2015)
1	\$1,265	\$973	\$1,605	\$194
2	\$1,705	\$1,311	\$2,163	\$357
3	\$2,144	\$1,650	\$2,722	\$511
4	\$2,584	\$1,988	\$3,280	\$649
5	\$3,024	\$2,326	\$3,838	\$771
6	\$3,464	\$2,665	\$4,396	\$925
7	\$3,904	\$3,003	\$4,955	\$1,022
8	\$4,344	\$3,341	\$5,513	\$1,169

This table shows the maximum income a family can earn and still possible qualify for SNAP benefits.

## Women, Infants, and Children program (WIC)

The Women, Infants, and Children program (WIC) is a supplemental food program for pregnant women, new mothers, and children under age five. Mississippi's WIC program provides an actual basket of nutritious food to participants (some states provide vouchers that can be used at grocery stores). Once a woman has given birth, she can receive WIC benefits for up to twelve months (MSDH, 2001). In addition to the basket of food, WIC offers classes and educational materials to help pregnant women and new mothers understand the importance of nutrition. The cost of the basket of food that each person receives varies for many reasons. For example, babies sometimes need specific formulas to meet their dietary/health needs and the nutritional needs of all children change as they grow. Although the value of the basket varies, we simplify this analysis by assuming all baskets are valued at the average cost per basket for the state of Mississippi in 2015 (\$53.25 per month). Table 4 shows the income eligibility requirements for WIC (USDA, 2016b). Unlike SNAP, the

Table 4. WIC

WIC Inc	WIC Income Limits				
Household Size	Income per Month				
1	\$1,832				
2	\$2,470				
3	\$3,108				
4	\$3,747				
5	\$4,385				
6	\$5,023				
7	\$5,663				
8	\$6,304				

This table shows the maximum income a family can earn and possibly qualify for WIC benefits.

value of the families' WIC basket does not change as the family earns more money. If a family's income does not exceed the maximum allowed, the eligible family members receive the full benefit.

#### Housing and Urban Development (HUD)

The US Department of Housing and Urban Development (HUD) offers a variety of programs that help low income families afford adequate housing. Although HUD has many programs (including home purchasing assistance), only the housing subsidy is examined in this paper. HUD makes rules about the condition of public housing as well as housing that is leased using HUD vouchers. HUD voucher/public housing eligibility is based on the idea that households should not pay more than 30 percent of their income for sanitary housing. HUD has a payment standard in each area that is the maximum monthly rent HUD families can pay. This maximum is the sum of the amount paid by HUD and the amount paid by the family. Table 5 lists the 2015 payment standards for the Jackson, Mississippi, metro area. HUD pays a subsidy equal to the difference between the payment standard and 30 percent of the household's net income. Some HUD recipients pay 30 percent of their net income for

Table 5. Payment Standards

2015 Jackson, MS Housing Authority				
Bedroom Size	Payment Standard			
0	\$505			
1	\$679			
2	\$810			
3	\$1,009			
4	\$1,108			
5	\$1,274			

This table shows the most a family can pay to rent an apartment if they receive HUD benefits. The amount includes both the family's contribution and the HUD voucher.

public housing, while other HUD recipients pay 30 percent of their net income directly to a landlord using a HUD voucher for the remainder. To simplify the analysis, we assume that those who receive HUD vouchers rent a home valued at the maximum payment standard. We also assume that each public housing unit is valued at the maximum payment standard. These assumptions may inflate the value of the housing voucher. For example, the payment standard for a family of three is \$1,009 per month in the Jackson metro area (see Table 5). Some families may find a rental home for less than \$1,009 per month. Because the family will pay 30 percent of its net income regardless of how low the rent is, assuming every family finds a home to rent at exactly the highest rent possible may inflate HUD benefits for our representative families. Although inflating the benefit is not ideal, it does not adversely affect the analysis in this paper. This study focuses on the change in benefits as the head of household earns more income and that change does not depend on the initial estimate of the value of the HUD subsidy.

Due to the nature of housing, HUD often has a long list of families waiting for benefits. This study assumes that families who qualify are granted housing or housing vouchers with no discounting for the fact that they may have had to wait several months to receive those benefits. We use the HUD formula for housing vouchers (HUD, 2001a; HUD, 2001b) to determine the housing subsidy that each family receives. Mississippi HUD also maintains a certain ratio of extremely low income, very low income, and low income benefit recipients. Table 6 shows the income limits for each group (HUD, nd.). Like SNAP, as a family's income increases so does the amount the family is required to contribute to its housing costs.

## Temporary Assistance for Needy Families (TANF)

In 1996, the Temporary Assistance for Needy Families program (TANF) replaced Aid to Families with Dependent Children (AFDC).

Table 6. HUD

H	HUD 2015 Income Limits					
Household	Extremely	Very Low	Low			
Size	Low Income	Income	Income			
1	10,150	16,900	27,050			
2	11,600	19,300	30,900			
3	13,050	21,750	34,800			
4	14,500	24,150	38,650			
5	15,650	26,100	41,750			
6	16,800	28,000	44,800			
7	17,950	29,950	47,900			
8	19,150	31,900	51,000			

This table shows the maximum income a family can earn and possibly qualify for HUD benefits. HUD has three categories of income requirements and works to maintain a certain ratio between those groups.

TANF is a cash program available to families on a temporary basis and is the only cash program available to low income families. Cash is important for items such as diapers, toiletries, clothing, and other necessities that cannot be purchased with food or housing vouchers. To qualify for TANF, a family must have a dependent child and a family member that works at least twenty hours per week or participates in a TANF-approved job-like activity. The maximum a household in Mississippi can earn and still receive TANF benefits is listed in Table 7, along with the maximum benefits a family can receive and the poverty line for 2015. According to the US Census, the poverty line for a family of three was approximately \$1,674 gross per month in 2015 (CB 2016). To receive TANF, a Mississippi family of three with significant out of pocket child care expenses can earn no more than \$680 gross per month including child support, Social Security, unemployment benefits, etc. (MS HHS 2016). A family of three without child care expenses earning \$448 gross per month qualifies for \$10 per month in TANF benefits.

Table 7 TANE

able 7. TAINF							
TANF							
			Poverty Line (2015) -	% of poverty line to			
Family Size	Maximum benefits	Maximum monthly income	Monthly income	qualify			
1	\$110	\$403	\$981	41.1%			
2	\$146	\$542	\$1,328	40.8%			
3	\$170	\$680	\$1,674	40.6%			
4	\$194	\$819	\$2,021	40.5%			
5	\$218	\$958	\$2,368	40.5%			
6	\$242	\$1,097	\$2,714	40.4%			
7	\$266	\$1,235	\$3,061	40.3%			
8	\$290	\$1,374	\$3,408	40.3%			
9	\$314	\$1,513	\$3,754	40.3%			
10	\$338	\$1,652	\$4,101	40.3%			

This table shows the maximum income a family can earn and possibly qualify for TANF benefits. It also shows the poverty line and how far below the poverty line a family must be to be considered for TANF.

#### Taxes

Federal taxes are calculated assuming each family takes the standard deduction and basic exemptions. Medicaid and Social Security taxes are also included in the tax calculation. Medicaid taxes are 1.45 percent and Social Security taxes are 6.2 percent for each employee. When a family has two adults, we assume those adults are married and use the married filing jointly tax bracket.

#### Earned Income Tax Credit (EITC)

The Earned Income Tax Credit (EITC) is a federal tax credit designed to encourage work. The credit is refundable which means that some families pay a negative federal income tax. The EITC starts with a "phase-in" period. During the phase-in period, the worker gets a larger credit as he or she earns more. The phase-in for an adult with one dependent child is from \$1 to \$9,900 in earnings. After the phase-in stage, the dollar value of the EITC remains constant for some amount of additional earnings. For an adult with one child, the EITC remains constant from \$9,901 to \$18,150 in earnings. The final period of the EITC is the "phase-out" period. During this period, the EITC decreases as the worker earns more. The phase-out period is between \$18,151 and \$39,100 for an adult with one child. See Table 8 for EITC phases for other workers (IRS, 2016; CBPP, 2016b).

Table 8 FITC

EITC							
	Single or Head of Household						
Number of Children		0	1	2	3		
Phase-In	Start	\$1	\$1	\$1	\$1		
Pridse-In	End	\$6,600	\$9,900	\$13,900	\$13,900		
Constant	Start	\$6,601	\$9,901	\$13,901	\$13,901		
Constant	End	\$8,250	\$18,150	\$18,150	\$18,150		
Phase-Out	Start	\$8,251	\$18,151	\$18,151	\$18,151		
Priase-Out	End	\$14,820	\$39,130	\$44,451	\$47,747		
Max Credit		\$503	\$3,359	\$5,548	\$6,242		
		Married Filing Joir	ntly				
Number of Children		0	1	2	3		
Phase-In	Start	\$1	\$1	\$1	\$1		
F11d5E-111	End	\$6,600	\$9,900	\$13,900	\$13,900		
Constant	Start	\$6,601	\$9,901	\$13,901	\$13,901		
COnstant	End	\$13,750	\$23,650	\$23,650	\$23,650		
Dhasa Out	Start	\$13,751	\$23,651	\$23,651	\$23,651		
Phase-Out	End	\$22,329	\$44,651	\$47,746	\$53,867		
Max Credit		\$503	\$3,359	\$5,548	\$6,242		

This table shows the three phases of the earned income tax credit (EITC). Each phase is based on earnings and filing status.

#### Medicaid

Medicaid is designed to provide health insurance for those who cannot afford it. Similar to WIC, members of a family who meet Medicaid's income requirements receive the full benefit (unlike the sliding scales of HUD and SNAP). Medicaid eligibility also differs by age (see Table 9). Once a child is no longer eligible for Medicaid, he or she may be

eligible for the Children's Health Insurance Program (CHIP). CHIP is available to children who live in families with an income less than 209 percent of the poverty line and does not vary with the child's age. CHIP is composed of tiers based on income, and in some tiers a co-payment is required (MS DFA, 2016). In this analysis, we use the cost of the state employees' insurance plan as an estimate of the value of Medicaid. The rates for state employees can be found in Table 10. Because CHIP requires co-payments at some income levels, we value it at \$100 less per month than Medicaid. This is simply keeping in line with the idea that insurance with higher co-payments and deductibles is usually less expensive than insurance with lower co-payments and deductibles. Notably, the children in our representative families are insured by Medicaid or CHIP, but the adults are left uninsured.

Table 9. Medicaid

			Medicaid		
Age	Family Size	Medicaid Income Limit	% of Poverty Line	CHIP Income Limit	% of Poverty Line
0-1	1	\$1,921	194%	\$2,070	209%
0-1	2	\$2,590	194%	\$2,791	209%
0-1	3	\$3,260	194%	\$3,512	209%
0-1	4	\$3,929	194%	\$4,233	209%
0-1	5	\$4,598	194%	\$4,954	209%
0-1	6	\$5,268	194%	\$5,675	209%
0-1	7	\$5,939	194%	\$6,398	209%
0-1	8	\$6,611	194%	\$7,122	209%
1-6	1	\$1,416	143%	\$2,070	209%
1-6	2	\$1,910	143%	\$2,791	209%
1-6	3	\$2,403	143%	\$3,512	209%
1-6	4	\$2,896	143%	\$4,233	209%
1-6	5	\$3,390	143%	\$4,954	209%
1-6	6	\$3,883	143%	\$5,675	209%
1-6	7	\$4,377	143%	\$6,398	209%
1-6	8	\$4,873	143%	\$7,122	209%
6-19	1	\$1,317	133%	\$2,070	209%
6-19	2	\$1,776	133%	\$2,791	209%
6-19	3	\$2,235	133%	\$3,512	209%
6-19	4	\$2,694	133%	\$4,233	209%
6-19	5	\$3,153	133%	\$4,954	209%
6-19	6	\$3,611	133%	\$5,675	209%
6-19	7	\$4,071	133%	\$6,398	209%
6-19	8	\$4,532	133%	\$7,122	209%
Adults	1	\$227	23%	n/a	n/a
Adults	2	\$306	23%	n/a	n/a
Adults	3	\$384	23%	n/a	n/a
Adults	4	\$462	23%	n/a	n/a
Adults	5	\$541	23%	n/a	n/a
Adults	6	\$619	23%	n/a	n/a
Adults	7	\$697	23%	n/a	n/a
Adults	8	\$775	23%	n/a	n/a

This table shows the maximum income a family can earn and possibly qualify for Medicaid and CHIP. It also shows how far above the poverty line a family can earn and still qualify.

Table 10. State Employee's Health Care Plan

State Employees' Health Horizon Employees' Select Plan			
	Insurance Premium		
Adult	394		
Adult plus Spouse	837		
Adult plus child	549		
Adult plus children	706		
Adult plus Spouse and child or children	1,041		

This table shows the premiums for the state employees' health plan in 2015.

# Methodology

To examine whether public assistance packages available to Mississippi residents encourage or discourage work, we create five representative families (see Table 11 for details). The first family is a single adult. The other families are one adult and one child (age 1), two adults and one child (age 1), one adult and three children (ages 1, 3, and 5), and two adults and four children (ages 1, 3, 5, and 7). We calculate the maximum benefits available to each household when one household member is working twenty hours per week and earning \$7.25, \$8.50, \$10, \$12, or \$15 per hour. We then calculate the same benefits for those representative families working thirty and forty hours per week. The idea is to determine whether a rational person would have an incentive to work an additional ten hours per week under Mississippi's current public assistance guidelines. We also assume that each household has no assets, none of the family members are elderly or disabled, and no one has out-of-pocket child care expenses.

Table 11. Composition of Families

	Family Composition					
Family size	Members	Ages				
1	Single adult	30				
2	1 adult, 1 child	30, 1				
4	1 adult, 3 children	30, 1, 3, 5				
3	2 adults, 1 child	32, 30, 1				
6	2 adults, 4 children	32, 30, 1, 3, 5, 7				

This table shows the family criteria that was used to determine program eligibility for each program.

## Results

Before discussing the results, there are a few things to keep in mind. First, the EITC is a great poverty reduction tool, but it is complex and those in poverty may not have time or resources to devote to fully understanding it. If they do not fully understand it, they cannot respond to it in a rational manner. For that reason, we discuss the EITC's effect on the effective marginal tax rate frequently. Secondly, most programs require twenty hours per week of work. This study seeks to examine the incentive to work more than the required minimum.

#### Earning \$7.25 per hour

When the head of household works twenty hours per week earning \$7.25 per hour every week of the year, she will earn \$7,540. Working an additional ten hours per week generates an additional \$3,700 for a total annual income of \$11,310. At this income, all five families live below the poverty line (see Table 7 for details regarding poverty line). What's the family's effective marginal tax rate if the head of household works an additional ten hours per week? Considering all five programs, taxes, and the EITC, the effective marginal tax rate ranges from negative 1 percent to 81 percent (see Table 12 for details). The highest effective marginal tax rate is paid by the single adult. The family of four experiences a negative tax rate, which is simply additional income. The family of three and family of six experience effective marginal tax rates between 26 percent and 29 percent, while the family of two experiences an effective marginal tax rate of 72 percent.

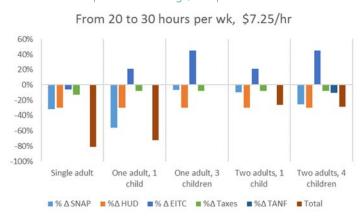
Table 12. Effective Marginal Tax Rate of Those Earning \$7.25 per hour

Earning \$7.25 per hour						
Family	Δ Earned Income	∆ Benefits	Effective Marginal Tax Rate			
From 20 to 30 hours per week						
Single adult	\$3,770.00	\$(3,046.71)	80.81%			
One adult, 1 child	\$3,770.00	\$(2,719.41)	72.13%			
One adult, 3 children	\$3,770.00	\$38.59	-1.02%			
Two adults, 1 child	\$3,770.00	\$(991.41)	26.30%			
Two adults, 4 children	\$3,770.00	\$(1,077.41)	28.58%			
	From 30 to 40	hours per week				
Single adult	\$3,770.00	\$(2,194.31)	58.20%			
One adult, 1 child	\$3,770.00	\$(2,384.81)	63.26%			
One adult, 3 children	\$3,770.00	\$(1,173.41)	31.12%			
Two adults, 1 child	\$3,770.00	\$(2,319.41)	61.52%			
Two adults, 4 children	\$3,770.00	\$(393.41)	10.44%			

This table shows the change in income for a family with one earner working for \$7.25 per hour. The table also shows the change in benefits and the effective marginal tax rate.

Next we consider the effective marginal tax rate of each program (see Figure 1). Notice that WIC and Medicaid are missing from Figure 1. For those two programs, the families who qualify while working twenty hours per week also qualify while working thirty hours per week. Therefore, the change in the program funding when increasing from twenty to thirty hours per week is zero. Also, notice that total in Figure 1 is the same effective tax rate shown in Table 12. For illustrative purposes, Figure 1 shows the effective tax rate as a decrease in the family's income. HUD's formula yields a relatively uniform 30 percent decline in benefits across family size. SNAP benefits decrease about 25 percent on average, but the benefits do not decrease as uniformly as HUD benefits. Only the family

Figure 1. Effective Marginal Tax Rate by Program When Moving from 20 to 30 Hours per Week Earning \$7.25 per Hour



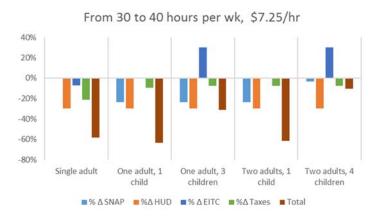
of six qualifies for TANF. That benefit disappears completely when the head of household begins working thirty hours per week. Taxes contribute approximately 8 percent to four of the families' effective marginal tax rate (payroll taxes only). The exception is the single adult who pays 13 percent of her additional income in additional taxes. The final piece of the benefits puzzle is the EITC, which aims to encourage work as well as aid those with dependents. Notice

that those with children are in the phase-in period of the EITC as evidenced by an increasing credit. Also, the increase is larger the more children the family has. Keep in mind that only three children qualify for an additional EITC.

hour. The families begin with an annual income of \$11,310. The additional \$3,770 earned by working an additional ten hours per week increases the family's income to \$15,080. This moves the single adult above the poverty line, but not the other four families (Table 7). Table 12 provides the effective marginal tax rates. The lowest rate is 10 percent and is experienced by the family of six. The highest rate is 63 percent and is experienced by the family of two. Figure 2 displays the effective marginal tax rate by program. Notice in Figure 2 that SNAP and HUD are relatively uniform in their decline. SNAP is missing from the family of one because her SNAP eligibility is the same while working thirty hours per week and while working forty hours per week. Again, the tax rate is relatively uniform for all families except the single adult. In this case, the EITC is missing for two families because those families are in the constant period of the EITC. This means that as the families earn more, their EITC remains unchanged. For the families with at least three

Next, consider a move from working thirty hours per week to working forty hours per week while earning \$7.25 an

Figure 2. Effective Marginal Tax Rate by Program When Moving from 30 to 40 Hours per Week Earning \$7.25 per Hour



children, the EITC is in the phase-in period. The single adult is in the phase-out period of the EITC.

#### Earning \$8.50 per hour

Next we consider the same families with the head of the household earning \$8.50 per hour. Working twenty hours per week at \$8.50 per hour yields an annual income of \$8,840. Working an additional ten hours per week yields an additional \$4,420 for a total annual income of \$13,260. This places all families except the single adult below the poverty line (Table 7). Table 13 lists the effective marginal tax rates. The lowest effective marginal tax rate of 22 percent is experienced by the family of four, while the single adult experiences a 72 percent rate. Figure 3 depicts the effective marginal tax rate by program. The total in Figure 3 is the same as the effective tax rate in Table 13. Notice that TANF is missing in Figure 3 along with Medicaid and WIC. None of the families are eligible for TANF when the head of

household works twenty hours per week so there is no change in TANF benefits when moving to thirty hours per week. The children in each family are eligible for Medicaid and WIC when the head of household is working twenty hours per week and when she is working 30 hours per week so there is no change in those programs. Figure 3 shows that taxes increase uniformly among families with children. The EITC is in the phase-in period for families with more than two children, but is in the constant period for families with only one child. For the single adult, the EITC is in the phase-out period.

Figure 3. Effective Marginal Tax Rate by Program When Moving from 20 to 30 Hours per Week Earning \$8.50 per Hour

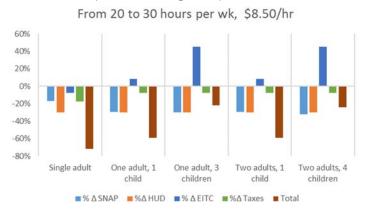


Table 13. Effective Marginal Tax Rate of Those Earning \$8.50 per hour

Earning \$8.50 per hour					
Family	Δ Earned Income	∆ Benefits	Effective Marginal Tax Rate		
	From 20 to 30 h	ours per week			
Single adult	\$4,420.00	71.89%			
One adult, 1 child	\$4,420.00	\$(2,612.93)	59.12%		
One adult, 3 children	\$4,420.00	\$(969.13)	21.93%		
Two adults, 1 child	\$4,420.00	\$(2,602.13)	58.87%		
Two adults, 4 children	\$4,420.00	\$(1,065.13)	24.10%		
From 30 to 40 hours per week					
Single adult	\$4,420.00	\$(2,652.53)	60.01%		
One adult, 1 child	\$4,420.00	\$(2,896.73)	65.54%		
One adult, 3 children	\$4,420.00	\$(2,505.53)	56.69%		
Two adults, 1 child	\$4,420.00	\$(2,720.13)	61.54%		
Two adults, 4 children	\$4,420.00	\$(2,464.13)	55.75%		

This table shows the change in income for a family with one earner working for \$8.50 per hour. The table also shows the change in benefits and the effective marginal tax rate.

If the head of household works thirty hours per week earning \$8.50, her annual income is \$13,260. This person earns an additional \$4,420 if she worked an additional ten hours per week. This total of \$17,680 puts both the single adult and family of two above the poverty line; however, neither of these families has reached the middle class (PEW, 2016).

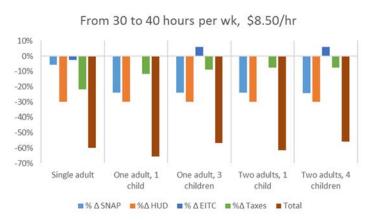
News outlets have coined the term working class to refer to those who earn too much to be considered in poverty but not enough to be considered middle class. We will adopt that language for the remainder of the study. Table 14 shows the minimum amount need to be middle class for each family size (PEW, 2016). Examining Table 13, we find that the effective marginal tax rate ranges from 56 percent for the family of six to 66 percent for the family of two. Figure 4 shows the effective marginal tax rate for each program. SNAP and HUD continue to decrease relatively uniformly for all families. Notice that the EITC is only in the phase-in period for the families with more than two children and that the family of two and the single adult pay a larger percentage of their additional income in additional taxes than the larger families.

Table 14. Income Necessary to be Considered Middle Class by Family Size

Class by Farminy Size				
Family	Middle Class	Upper Class		
Size	minimum	minimum		
1	\$24,173	\$72,521		
2	\$34,186	\$102,560		
3	\$41,869	\$125,609		
4	\$48,347	\$145,041		
5	\$54,053	\$162,161		

This table shows the income necessary to be considered middle class by the PEW Research Center.

Figure 4. Effective Marginal Tax Rate by Program When Moving from 30 to 40 Hours per Week Earning \$8.50 per Hour



## Earning \$10 per hour

Earning \$10 an hour sounds like a great deal in comparison to earning minimum wage. However, working for \$10 an hour for twenty hours per week yields an annual salary of \$10,400, which is below the poverty line for all families. That salary increases by \$5,200 if the head of the household works an additional ten hours per week, increasing the earned income to \$15,600. This income lifts the single adult into the working class, however the other families remain in poverty (see Table 7 for poverty line information). Table 15 lists the effective marginal tax rates for the families when the head of the household works an additional ten hours per week for \$10

per hour. The families' effective marginal tax rates range from 15 percent for the family of six to 66 percent for the family of one. Figure 5 shows the effective marginal tax rate by program. The total in Figure 5 is the same as the effective tax rate in Table 15. Notice that the EITC is in the phase-in period for families with more than two children. For the families with only one child, the EITC is in the constant period and for the single adult the EITC is in the phase-out period. Taxes increase the effective marginal tax rate by similar amounts for families with children.

Table 15. Effective Marginal Tax Rate of Those Earning \$10.00 per hour

Earning \$10.00 per hour						
Family	Δ Earned Income	$\Delta$ Benefits	Effective Marginal Tax Rate			
From 20 to 30 hours per week						
Single adult	\$5,200.00	\$(3,426.80)	65.90%			
One adult, 1 child	\$5,200.00	\$(3,334.80)	64.13%			
One adult, 3 children	\$5,200.00	\$(1,714.80)	32.98%			
Two adults, 1 child	\$5,200.00	\$(3,253.80)	62.57%			
Two adults, 4 children	\$5,200.00	\$(778.80)	14.98%			
	From 30 to 40 h	ours per week				
Single adult \$5,200.00		\$(4,683.80)	90.07%			
One adult, 1 child	\$5,200.00	\$(4,026.80)	77.44%			
One adult, 3 children	\$5,200.00	\$(3,924.80)	75.48%			
Two adults, 1 child	\$5,200.00	\$(3,286.80)	63.21%			
Two adults, 4 children	\$5,200.00	\$(3,205.80)	61.65%			

This table shows the change in income for a family with one earner working for \$10.00 per hour. The table also shows the change in benefits and the effective marginal tax rate.

Figure 5. Effective Marginal Tax Rate by Program When Moving from 20 to 30 Hours per Week Earning \$10.00 per Hour

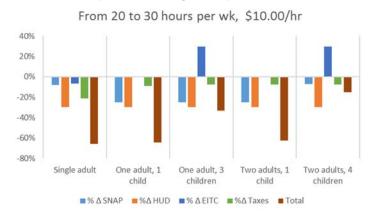
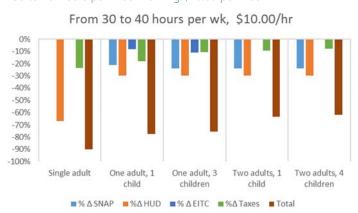


Figure 6. Effective Marginal Tax Rate by Program When Moving from 30 to 40 Hours per Week Earning \$10.00 per Hour



Keeping with the \$10 per hour wage, the head of the household earns a \$20,800 a year if she works forty hours per week. This wage puts three families above the poverty line and into the working class (although it is just shy of middle class for the single adult). The families who remain in poverty are the family of four and the family of six. Table 15 shows the effective marginal tax rates when the heads of these families increase their work hours from thirty to forty hours per week. The lowest effective marginal tax rate of 62 percent is experienced by the family of six, while the highest effective marginal tax rate of 90 percent is experienced by the single adult. Figure 6 shows the effective marginal tax rate by program. Notice that HUD is responsible for most of the single adult's effective marginal tax rate. That's because this person is no longer eligible for HUD when she begins working forty hours per week at \$10 per hour. The EITC in this case is in the constant period for the families with more than two children and in the phase-out period for

the families with only one child. The single adult is not eligible for the EITC while working thirty or forty hours per week at this wage.

#### Earning \$12 per hour

Next we examine the effective marginal tax rates at \$12 per hour. Earning \$12 per hour for twenty hours per week yields \$12,480. Working an additional ten hours per week yields an additional \$6,240 for a total annual income of \$18,720. This total puts the family of one and the family of two into the working class, while the other three families

remain below the poverty line (see Table 7). Table 16 details the effective marginal tax rates for each family. The effective marginal tax rates range between 38 percent for the family of six and 68 percent for the family of two. Figure 7 shows the effective marginal tax rate by program. The total in Figure 5 is the same as the effective tax rate in Table 15. The EITC is in the phase-in period for the families with more than two children. The EITC is in the constant period for the family of three, and in the phase-out period for the families of one and two. HUD remains uniform for all families and SNAP is mostly uniform. Taxes are similar for families with at least three members. The families of one and two pay a larger percentage of their additional income in additional taxes.

Figure 7. Effective Marginal Tax Rate by Program When Moving from 20 to 30 Hours per Week Earning \$12.00 per Hour

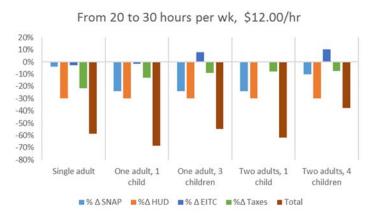


Table 16. Effective Marginal Tax Rate of Those Earning \$12.00 per hour

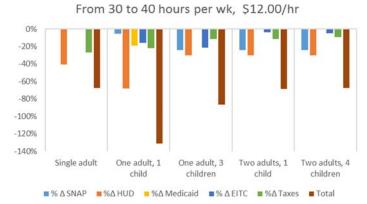
	Earning \$12	2.00 per hour	
Family	Δ Earned Income	∆ Benefits	Effective Marginal Tax Rate
•	From 20 to 30	hours per week	
Single adult	\$6,240.00	58.49%	
One adult, 1 child	\$6,240.00	\$(4,264.16)	68.34%
One adult, 3 children	\$6,240.00	\$(3,423.96)	54.87%
Two adults, 1 child	\$6,240.00	\$(3,855.96)	61.79%
Two adults, 4 children	\$6,240.00	\$(2,357.36)	37.78%
	From 30 to 40	hours per week	
Single adult	\$6,240.00	\$(4,218.36)	67.60%
One adult, 1 child	\$6,240.00	\$(8,169.56)	130.92%
One adult, 3 children	\$6,240.00	\$(5,393.16)	86.43%
Two adults, 1 child	\$6,240.00	\$(4,306.16)	69.01%
Two adults, 4 children	\$6,240.00	\$(4,228.16)	67.76%

This table shows the change in income for a family with one earner working for \$12.00 per hour. The table also shows the change in benefits and the effective marginal tax rate.

Working forty hours per week at \$12 per hour yields earnings of \$24,960. All families except the family of six are above the poverty line at this income level. The single adult is considered middle class and the other families are considered working class. Effective marginal tax rates range from 68 percent for the single adult to 131 percent for the family of two. Figure 8 shows the effective marginal tax rate by program. The largest effective marginal tax rate is experienced by the family of two. The family has an effective marginal tax rate of 131 percent. A large portion of that effective marginal tax rate stems from the fact that the family is no longer eligible for HUD benefits. Another factor is the fact

that the child loses Medicaid benefits. The child still qualifies for CHIP, but since CHIP requires co-payments, we assign it a lower value than Medicaid in this paper. If CHIP and Medicaid were assigned the same value, the family of two would have an effective marginal tax rate of 112 percent instead of 131 percent. All other families are eligible for Medicaid at every income level prior to this point. The EITC is in the phase-out period for all eligible families. The families with only one child experience a larger decline in their EITC than the families with more than two children.

Figure 8. Effective Marginal Tax Rate by Program When Moving from 30 to 40 Hours per Week Earning \$12.00 per Hour



## Earning \$15 per Hour

A person working twenty hours per week at \$15 per hour earns \$15,600 per year. If she works an additional ten hours per week, she will earn an additional \$7,800 per year for a total annual income of \$23,400. This is enough income to move the families of one, two, and three out of poverty into the working class and almost moves the family of four into the working class. Table 17 shows the effective marginal tax rate for each family. The effective marginal tax rate is between 62 percent and 126 percent. The family of two has the largest effective marginal tax rate. Figure 9 shows that this is mostly due to the fact that the family is no longer eligible for housing subsidies, but also due to a movement from Medicaid to CHIP. The single adult exhausts her eligibility for housing subsidies as well as all other programs when working for thirty hours per week at this wage. At this income level the EITC is in the constant period for the family of three and the family of six, but in the phase-out period for the family of two and family of four.

Table 17. Effective Marginal Tax Rate of Those Earning \$15.00 per hour

Earning \$15.00 per hour						
Family	Δ Earned Income	∆ Benefits	Effective Marginal Tax Rate			
	From 20 to 30 hours per week					
Single adult	\$7,800.00	\$(5,402.70)	69.27%			
One adult, 1 child	\$7,800.00	\$(9,828.70)	126.01%			
One adult, 3 children	\$7,800.00	\$(6,178.70)	79.21%			
Two adults, 1 child	\$7,800.00	\$(4,970.70)	63.73%			
Two adults, 4 children	\$7,800.00	\$(4,832.70)	61.96%			
From 30 to 40 hours per week						
Single adult	\$7,800.00	\$(2,156.70)	27.65%			
One adult, 1 child	\$7,800.00	\$(3,999.90)	51.28%			
One adult, 3 children	\$7,800.00	\$(11,482.70)	147.21%			
Two adults, 1 child	\$7,800.00	\$(7,932.70)	101.70%			
Two adults, 4 children	\$7,800.00	\$(6,678.70)	85.62%			

This table shows the change in income for a family with one earner working for \$15.00 per hour. The table also shows the change in benefits and the effective marginal tax rate.

The final scenario is moving from working thirty hours per week to forty hours per week while earning \$15 per hour. The head of household earns \$31,200 working forty hours per week. This annual income moves all families except the family of six above the poverty line; however, only the single adult has entered the middle class. Table 17 shows the effective marginal tax rates for each family, while Figure 10 shows the same information by program. The

Figure 9. Effective Marginal Tax Rate by Program When Moving from 20 to 30 Hours per Week Earning \$15.00 per Hour

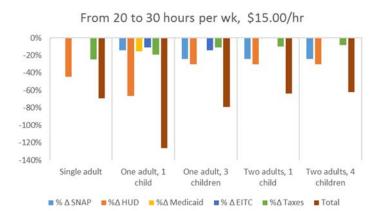
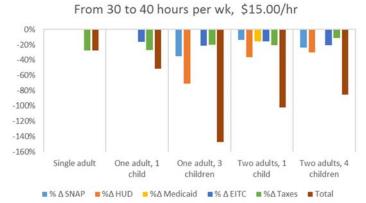


Figure 10. Effective Marginal Tax Rate by Program When Moving from 30 to 40 Hours per Week Earning \$15.00 per Hour



effective marginal tax rate is between 28 and 147 percent. The single adult is not eligible for any benefits when working thirty hours per week and therefore does not lose any benefits when moving to forty hours per week. The family of two is eligible for very few benefits when working thirty hours per week and ineligible for SNAP and Medicaid (although still eligible for CHIP) when working forty hours per week. The family with the largest effective marginal tax rate in this case is the family of four. This family is no longer eligible for housing subsidies which is the largest portion of the family's loss in benefits.

#### Limitations

This paper has some limitations. First, we do not assign a value to any stigmas that may be attached to receiving benefits. That stigma may act as an incentive to work additional hours despite economic incentives to work fewer hours (i.e., high effective marginal tax rates). Secondly, we make no attempt to determine whether participants value in-kind benefits like SNAP and HUD vouchers the same as the government. For instance, a parent receiving \$400 in SNAP benefits might prefer to spend only \$200 on food and spend the other \$200 on after-school activities. Because SNAP benefits cannot be converted to cash this is not an option for this parent. Therefore, the parent does not value \$400 in SNAP benefits the same as he or she values \$400 in cash and cannot fully optimize her basket of goods. Thirdly, we assume that all families with income below the HUD qualification guidelines receive assistance, although we know that HUD can have very long wait times and priority is given to those who are homeless, elderly, and/or disabled. Fourthly, we do not assign a value to the other benefits of public assistance programs. For example, TANF offers job training and child care vouchers under certain circumstances and SNAP offers educational services for participants who meet certain criteria. Fifthly, this study excludes the fact that many employers offer health benefits to those who work forty hours per week. This benefit could offset much of the loss in Medicaid. However, the affordability of work plans vary widely and still may not be affordable for poor and working class families. Finally, we exclude other benefits that a household may receive such as in-kind donations from charities. Because these things are not as universal as the programs that we cover, it is more difficult to create a statewide cost structure.

#### Conclusion

As stated in the introduction, there is no absolute answer to what a "fair" reduction in public assistance is. However, the tax code provides some insight into what society thinks a "fair" reduction in income looks like. The Appendix provides a calculation of the actual effective tax rate for a Mississippi resident earning \$150,000 in 2015. If she takes the standard deduction and has no addition tax credits or deductions her combined state and federal tax liability is approximately 26 percent. If she has a mortgage, a retirement account, or is eligible for any other tax deductions or credits, this tax rate will be lower (see Appendix for full calculation). Earning \$150,000 puts a Mississippi household in the top 5 percent of earners. We use this calculation to compare the effective tax rate of a person in the top 5 percent to the effective marginal tax rate of a family who qualifies for public assistance.

The single adult's lowest effective marginal rate is approximately 28 percent and her highest is 90 percent, which means that a single adult trying to work her way out of poverty always has a higher effective marginal tax rate than the effective tax rate of a single person in the top 5 percent of earners. The family of two has an effective marginal tax rate between 51 percent and 131 percent (highest rate could be 112 percent if CHIP and Medicaid were valued the same), again always more than the top 5 percenter's effective tax rate. The family of four's lowest rate is negative 1 percent and the highest rate is 147 percent. Of the ten times the effective marginal tax rate is measured for this family, it is at or below 26 percent twice. Considering family of three, the family's effective marginal rate ranges between 26 percent and 102 percent. Of the ten times the effective marginal tax rate was measured for this family, it was at 26 percent once. Finally, the family of six has an effective marginal rate ranging from 10 to 85 percent. Of the ten times the effective marginal tax rate was calculated for this family, it was at or below 26 percent three times. Overall, when all five families are considered six of the fifty times rates calculated are at or below maximum tax liability of a person earning \$150,000 per year.

The median effective marginal tax rate is approximately 63 percent. Such a large effective marginal tax rate creates a tremendous disincentive to earn more income. The trade-off between work and leisure leads to very little reward if 63 percent of the additional income that a family earns is lost to a combination of taxes and program reduction. If policy makers would like to lower the effective marginal tax rates for poor and working class families, a few things to

consider might be expanding TANF or starting a state EITC. Although all families in this study are considered below the poverty line at various income levels, almost none of them qualify for TANF benefits. Expanding TANF might provide some assistance to poor and working class families. Many states have their own EITC for poor and working class families. A state EITC can help offset some of the program reduction and if the state implements the program well, it can put money into a family's bank account monthly as oppose to a lump sum once a year. A portion of that implementation would have to be dedicated to making sure poor and working class individuals understand how tax withholdings work and how to make adjustments to those withholdings to maximize monthly income.

Although, there are no easy answers when it comes to providing proper incentives to work, it seems unlikely the high effective marginal tax rates that stem from program reduction provide appropriate work incentives for poor and working class families.

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# **Appendix**

Single person with earned income of \$150,000 Federal tax calculation

		60,000 6,300 4,000 89,700			l deduction exemption
9,225	Χ	.1	=	922.50	(first \$9,225 taxed at 10%)
(37,450-9,225)	Χ	.15	=	4,233.75	(up to 37,450 taxed at 15%)
(90,750-37,450)	Χ	.25	=	13,325.00	(up to 90,750 taxed at 25%)
(139,700-90,750)	Χ	.28	=_	13,706.00	(up to 189,300 taxed at 28%)
				32,187.25	(total federal tax bill)

Single person with earned income of \$150,000 Mississippi tax calculation

Federal tax bill plus state tax bill: 34,987.25 + 6,935.00 = 41,922.25

Total effective tax rate: 39,122.25/150,000 = 26.1%