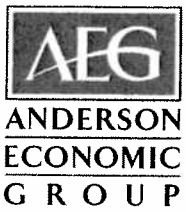
January 25, 2008



A Hand Up for Michigan Workers: Michigan's State Earned Income Tax Credit

An Update to AEG's 2002 Report

Commissioned by:
Michigan Catholic Conference

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I. Introduction and Summary of Findings

REPORT PURPOSE

The Michigan Catholic Conference (MCC) commissioned Anderson Economic Group (AEG) to update our 2002 report *A Hand Up for Michigan Workers: Creating a State Earned Income Tax Credit.* The MCC commissioned the original report to provide policymakers with the necessary data and analysis to make a decision regarding the creation of a Michigan Earned Income Tax Credit (MEITC). The MCC supported the passage of a state EITC and has advocated for the refundable tax credit as a way to help families work their way out of poverty.

Since the release of the original report, the Michigan Legislature passed and Governor Jennifer Granholm signed into law the MEITC. The credit will go into effect beginning in tax year 2008. In this report we explain how the MEITC will work, the rationale for having a state EITC, and estimate the likely cost of the MEITC to the state using information not available in 2002.

WHAT IS THE EARNED INCOME TAX CREDIT?

The Earned Income Tax Credit is a refundable tax credit on the federal personal income tax. Like all tax credits, it reduces the taxes a qualifying payer would otherwise pay. Since it is a *refundable* credit, qualified taxpayers benefit even if they make so little income that they do not pay federal income taxes. In such cases the taxpayer receives a check for any credit amount beyond their federal income tax liability.

The EITC increases with income up to a maximum credit amount, then phases out as the taxpayer earns enough income to pass the poverty threshold. During the phase-in period, an earner watches his or her credit rise with each additional dollar he or she earns. At a certain amount of income, the credit remains flat before gradually phasing out at higher income levels. See "What is the Earned Income Tax Credit?" on page 5 for a detailed explanation of how the credit works.

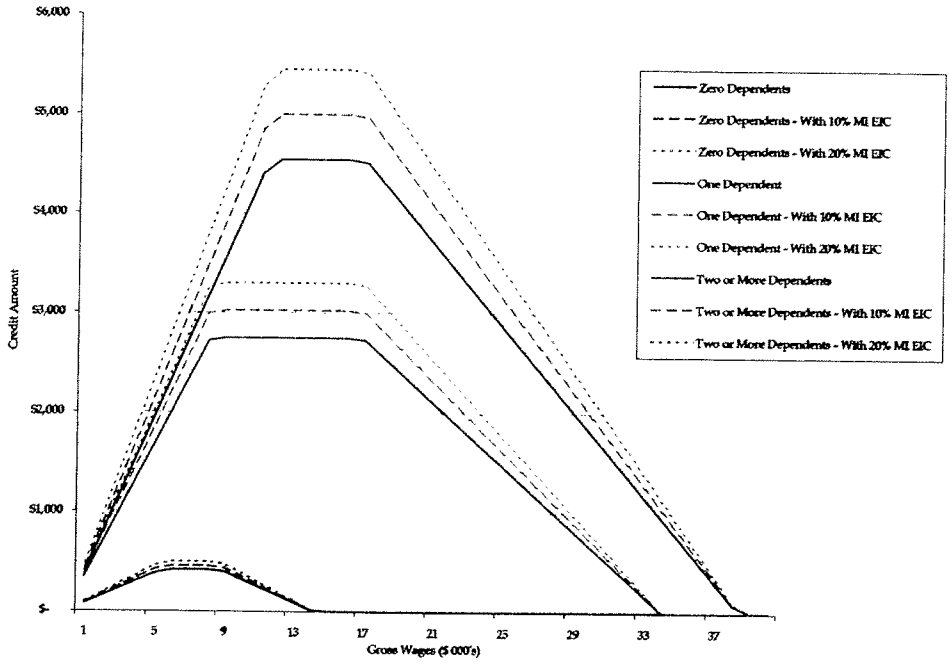
A MICHIGAN EITC

The MEITC builds upon the federal EITC. When it goes into effect, the MEITC will provide a credit *in addition to* the federal tax credit. The law allows taxpayers who qualify and receive the federal EITC to claim 10% of the federal credit amount on their Michigan income tax for tax year 2008. For tax years that begin after December 31, 2008 the credit increases to 20%.[1]

Michigan did not have a state EITC in 2006; if Michigan had had a state EITC in 2006, the total amount a filer would have received for both the federal and Michigan EITC is shown in Figure 1 on page 2. In this scenario, the maximum amount a filer with one child could have received for both the federal and state EITC would have been $3,296. Furthermore, a family with two or more children would have been able to receive a maximum credit of $5,443 in 2006. See Figure 1 on page 2 and "Michigan EITC" on page 6.

1. Public Act 372 of 2006 created the Michigan EITC.

FIGURE 1. Federal and Michigan EITC at 10% and 20% in 2006



GOALS OF A STATE EITC

The rationale for the enactment of the original federal EITC in 1975 was to refund payroll taxes paid by low-income workers. Unlike federal and state income taxes, which have exemptions and deductions, social security and unemployment taxes apply to the first dollar of earnings. Without the EITC, workers face effective tax rates on the first $1,000 in wages of 20%. Federal and state EITC's reduce this tax burden at very low income levels, providing a credit for the taxes paid and giving money to the worker. The EITC means that a married couple with one child goes from *paying* $198 of taxes on the first $1,000 of wages to *receiving* $142 in a refundable credit from the federal government. With the Michigan EITC, the amount the worker receives in cash assistance will rise to $210. See "Tax Burden by Level of Income" on page 10.

With bipartisan support, Congress has greatly expanded the federal EITC since its creation. Furthermore, 20 states have enacted a state EITC as a way to reduce poverty, provide cash assistance to low- and moderate-income working families, and improve the incentive to work. The EITC is widely considered the most effective program for helping families work their way out of poverty. The EITC helps lift over 600,000 Michigan families out of poverty every year. See "Goals of Today's EITC" on page 7.

REVENUE IMPACT OF A MICHIGAN EITC

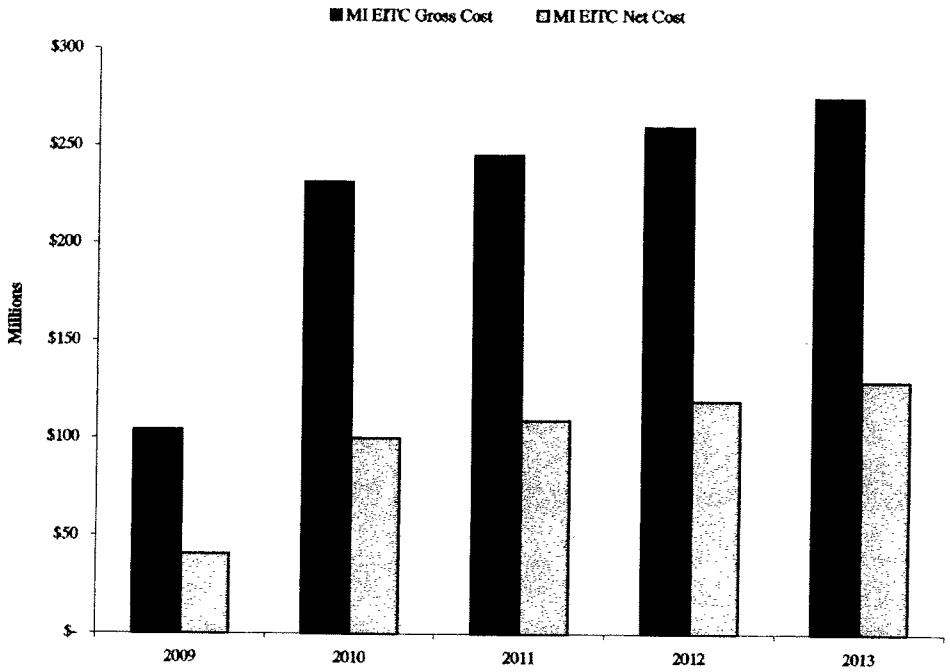
In order to estimate the effect of the MEITC on the state budget, we created a model that projects the number of workers who would qualify for the EITC, the number who would actually claim the credit, the average amount of the credit, the number

of new workers that would enter the labor force due to the credit, and the taxes these new workers would pay on new earnings.

The AEG model projects the *gross cost* of the EITC, which is the total amount of credits offered by the State of Michigan, and the *net cost* of the EITC, which is the gross cost less the additional taxes paid by those who entered the workforce and the reduced government benefits paid out. The net cost provides the more accurate assessment of how a state EITC would impact the state of Michigan's budget, as it takes into account both the revenue and expenditures of the state that are affected by a Michigan EITC.

We estimate that in FY 2009, the first year the state will pay the refundable tax credit, the net cost of the Michigan EITC will be $40 million, or 0.2% of state revenue from state sources in 2006. We project that the net cost will grow slowly over the next five years as more earners participate in the program. By 2013, we estimate the net cost to the state for the EITC will be $129 million. See Figure 2 below and "State Cost of the Michigan EITC" on page 12.

FIGURE 2. Gross and Net Costs of Michigan EITC, 2009-2013



Source: Anderson Economic Group, LLC
Note: Net cost accounts for additional tax revenue the state receives from new wages of workers who move into the labor force due to the EITC. New tax revenue from these workers is calculated as 8.5% of new wages. This is based on the percentage of income paid in taxes by Michigan residents the past few years, adjusted for the higher individual income tax rate of 4.35% that was enacted in October of 2007. Taxes include sales, income, excise, and property taxes.

ABOUT THE AUTHORS

Anderson Economic Group, LLC (AEG) is a consulting firm with expertise in economics, public policy, financial valuation, market research, and land use economics. AEG has offices in Michigan, Illinois, and Texas.

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Caroline M. Sallee. Ms. Sallee is a consultant at Anderson Economic Group, working in the Public Policy, Fiscal, and Economic Analysis practice area. Ms. Sallee's background is in applied economics and public finance. Ms. Sallee's recent work includes an economic impact study for Michigan's University Research Corridor, fiscal and economic impact studies for Michigan State University, and the benchmarking of Michigan's business taxes with other states in a project for the Michigan House of Representatives. Ms. Sallee holds a Master of Public Policy degree from the Gerald R. Ford School of Public Policy at the University of Michigan and a Bachelor of Arts degree in economics and history from Augustana College.

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See "Appendix B: About the Authors" for more information about the report's authors. The 2002 report can be found on AEG's website at http://www.Anderson-EconomicGroup.com.

II. Michigan Earned Income Tax Credit

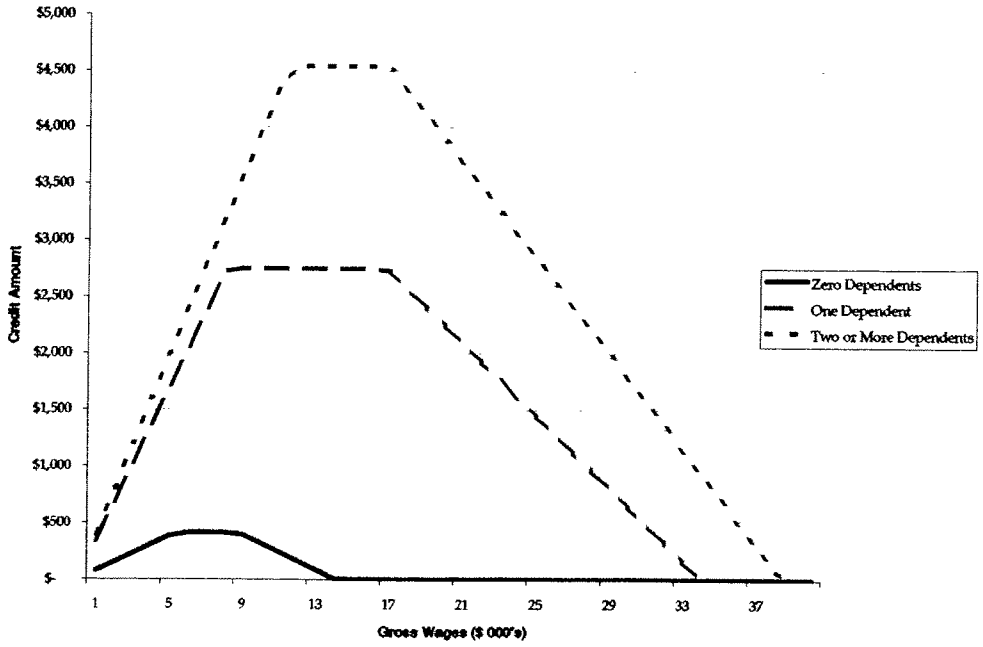
WHAT IS THE EARNED INCOME TAX CREDIT?

The Earned Income Tax Credit (EITC) is a *refundable* tax credit on the federal personal income tax. It reduces the taxes a qualifying tax payer would otherwise pay. Since it is a refundable credit, qualified taxpayers benefit even if they make so little income that they do not pay any federal income taxes. In such cases the taxpayer receives a check for any credit amount beyond their federal income tax liability. For example, if a married couple's tax liability is $600, but their EITC is worth $800, the couple would receive $200 from the federal government.

The EITC increases with income up to a maximum credit amount, then phases out as the taxpayer earns enough income to pass the poverty threshold. During the phase-in, an earner watches his or her credit grow with each additional dollar he or she earns. Currently the phase-in rate for a family with one child is 34% and 40% for a family with two or more children. Thus, for each additional dollar that a family with two or more children earns, the government gives them $0.40. In 2006 the credit phased in until earnings reached $8,049 for a single filer with one child. Between $8,050 and $14,849 the credit remained $2,747 before slowly phasing out until earnings reached $32,001.

Figure 3 illustrates the amount of credit by type of filer and income level. The figure illustrates the phase-in, flat, and phase-out periods of the credit amount for families with no children, one child, and two or more children.

FIGURE 3. Federal EITC by Type of Tax Filer, 2006

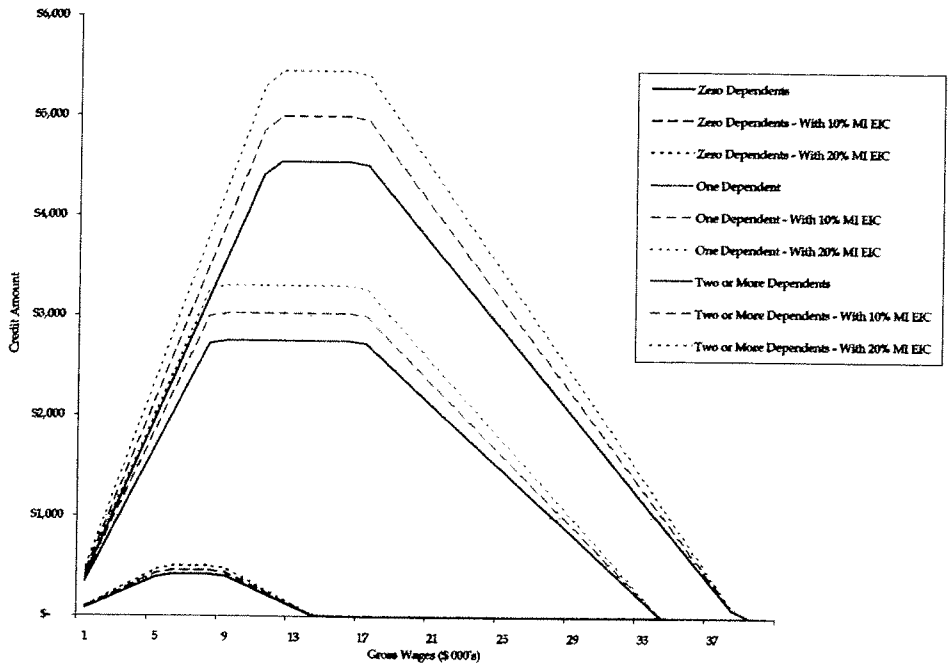


MICHIGAN EITC

The MEITC builds upon the federal EITC. Public Act 372 of 2006 allows taxpayers who qualify and receive the federal EITC to claim 10% of the federal credit amount on their Michigan income tax for tax year 2008. For tax years that begin after December 31, 2008, the credit increases to 20%.

When it goes into effect, the MEITC will be in addition to the federal tax credit. If Michigan had a state EITC in 2006, the total amount a filer would have received for both the federal and Michigan EITC is shown in Figure 4. In this scenario, the maximum amount a filer with one child could have received for both the federal and state EITC would have been $3,296. Furthermore, a family with two or more children the family would have been able to receive $5,443 in 2006.

FIGURE 4. Federal EITC and Michigan EITC at 10% and 20% of Federal Credit, 2006



Note: The Michigan EITC will not take effect until 2008, but the amounts in this figure use the 2006 federal EITC as a base because it reflects the most recent data available.

HISTORY AND POLITICAL CONTEXT OF THE EITC

The EITC came into existence in 1975. It started as a small program that refunded the payroll taxes of low-income workers with children. The original EITC gave households with at least one child a 10% tax credit on earnings up to $4,000, and then reduced the credit by $10 for each additional $100 in earnings until the credit was completely phased out when earnings reached $8,000.

During the 1980's congress made small changes to who was eligible for the credit and the credit amount given. Two major expansions occurred in 1990 and 1993. Today, the EITC includes higher phase-in rates, meaning earners watch their credit increase faster with each dollar of earnings, larger maximum credit amounts, and longer income levels to phase-out. The 1993 expansion also created a small credit for low-income earners with no children.[2]

Supporters of the EITC include a coalition of liberals and conservatives. The program has enjoyed bipartisan support (e.g. the 1990 expansion was enacted by a Democratic congress and signed by a Republican president). Though each individual supporter has his or her own mix of reasons for supporting the EITC, there are certain aspects of the EITC that generate more support from one side of the political spectrum or the other. Liberal support tends to focus on the law's effectiveness as an antipoverty program, putting much-needed cash into the hands of the working poor and working parents with children. Conservative support focuses on the program's incentives for the able-bodied to work and its treatment of marriage, which is much more neutral than previous cash assistance programs that contained marriage "penalties."

GOALS OF TODAY'S EITC

Provide Income Support and Reduce Poverty. The EITC provides cash assistance for low-to-moderate income working families with children. According to a study by the Center on Budget and Policy Priorities, the EITC lifts more than 4 million people out of poverty every year, half of which are children. Working families with incomes slightly below the federal poverty line receive the largest EITC benefits.[3]

Remove Barriers to Work and Encourage Self Sufficiency. Part of the EITC's popularity with the public and lawmakers is that the EITC provides low-income individuals cash assistance while encouraging work and self-sufficiency. Past programs that provided income support to low-income individuals, such as the federal Aid to Families with Dependent Children (AFDC), often contained disincentives for work. In order to receive AFDC and other welfare payments, the individual had to have an income that was low enough to qualify. When the AFDC recipient went to work, the earnings often meant a reduction in total income as benefits were equally reduced and work produced more expenses (such as child care). The low-income individual was often worse off returning to work than receiving government assistance.

In contrast, the EITC provides a cash incentive for low-income individuals to work. Each dollar earned is not accompanied with a lost in government benefits. Rather, the credit becomes larger for each dollar of earnings during the phase-in period and phases-out at much higher income levels.

2. Saul D. Hoffman and Laurence S. Seidman, *Helping Working Families: The Earned Income Tax Credit*, 2003.

3. Ami Nagle and Nicholas Johnson, *A Hand Up: How State Earned Income Credits Help Working Families Escape Poverty in 2006*, Center on Budget and Policy Priorities, March 2006.

PAYROLL AND INCOME TAXES WORKERS PAY

The rationale for the enactment of the original EITC was to help low-income households by refunding the payroll taxes paid by low-income workers. Lowering taxes on work to help the working poor was part of what encouraged conservatives to support the EITC as an alternative to existing anti-poverty programs of the 1970's and 1980's. This included President Ronald Reagan, who supported the EITC while governor of California.[4] As president in 1986, Reagan called the EITC "the best anti-poverty, the best pro-family, the best job-creation measure to come out of Congress."[5]

Today's EITC provides a refundable tax credit for payroll and income taxes paid by low- and moderate-income earners. Below, we describe the payroll and income taxes workers pay and Table 1 on page 9 summarizes taxes workers face in 2007.

Federal Income Taxes. Income taxes are well known. The Federal Revenue Code establishes personal exemptions and standard deductions that allow a certain amount of income to be earned without tax liability. These amounts are indexed annually for inflation.

The 2007 personal exemption of $3,400, plus the standard deduction of $5,350 for a single person, makes the first $8,750 of earnings tax-free for a single person. A married couple filing jointly with one dependent child pays no federal income tax on the first $20,900 of earnings, and then pays marginal rates of 10%, 15%, 25%, 28%, 33%, and 35% as their income rises.

State and Local Income Taxes. In 2007, Michigan taxpayers faced a flat-rate state personal income tax of 3.9% before October 1, 2007 and a tax of 4.35% after October 1, 2007. The first $3,300 of earnings was not taxed. Some cities also levied an income tax on wages earned within the city. For example, the City of Detroit levied a 2.5% income tax on residents and the City of Grand Rapids levied a 1.3% tax.

Old Age, Survivors, and Disability Insurance (OASDI) Taxes. Old age, survivors, and disability insurance (OASDI), more commonly known as Social Security, is provided through taxes that are levied on employers and employees. Both employees and employers must withhold 6.2% of wages for the "Social Security" portion of the tax, and an additional 1.45% for the Medicare portion of the tax. This payroll tax burden is 15.3% of wages, up to the phase-out amount for the Social Security portion of the wage based, which was $97,500 in 2007. There is no phase-out amount for the Medicare portion of this payroll tax.

Federal Unemployment Tax. The federal government imposes a 6.2% federal unemployment tax assessment on wages, up to a phase-out amount, which was $7,000 in 2007. However most states, including Michigan, have their own unem-

4. Saul D. Hoffman and Laurence S. Seidman, *Helping Working Families: The Earned Income Tax Credit*, 2003., p. 12.

5. "Sweeping Tax Overhaul Now the Law." *Chicago Tribune*, October 23, 1986; cited in Nicholas Johnson, *A Hand Up*, Washington DC, Center for Budget and Policy Priorities, 1999, p. 3.

ployment insurance system and for these states a substantial credit was offered that reduced the net tax to 0.8%.

Unemployment Insurance. The State of Michigan requires employers to pay unemployment insurance taxes to provide revenue for Michigan's Unemployment Insurance Fund. New employers, except for construction contractors, paid taxes of 2.7% of employee wages up to $9,000 in 2007. Rates for employers in business for more than four years, varied from 0.06% to 10.3%.

TABLE 1. Income and Payroll Taxes in Michigan, 2007

Tax	Description	Rates
Federal Income Tax	Progressive rate structure, which varies with filing status; gross income is reduced by exemptions and a standard deduction.[a]	10% to 35%
State Income Tax	Michigan has a flat-rate tax with few modifications; the personal exemption amount is $3,300; there are no standard deductions.	3.9% (4.35% after October 1, 2007)[b]
Local City Income Taxes	Twenty-two Michigan cities impose a tax on residents and nonresidents working in the city, and most cities allow the minimum exemption amount of $600.[c]	Most at 1% for residents and half that for nonresidents. Detroit rates are 2.65% for residents and half that for nonresidents.[d]
OASDI (Social Security)	Phase-out at $97,500.	12.4% collected half from employees and half from employers.
Medicare	No phase-out.	2.9% collected half from employees and half from employers.
Unemployment Insurance	Phase-out at $9,000.	2.7% for new employers; many employers higher; some lower. The average has been about 3.5%.[e]
Federal Unemployment Tax	Phase-out at $7,000.	0.8% with state credits; otherwise 6.2%.

Sources: AEG; IRS; Michigan Department of Treasury; Michigan Legislature, Michigan Unemployment Agency, Citizens Research Council of Michigan.

a. Non-taxable amounts are the sum of the standard deduction and the total exemptions claimed. These are indexed and change each year. For 2007, the exempt amount is estimated to be $3,400, and the standard deduction to be $5,350 for a single taxpayer and $10,700 for a couple filing jointly.

b. Public Act 6 of 1999 required the Michigan income tax rate to drop from 4.4% to 3.9% in a five year period. The income tax reached its minimum in 2004, and has remained there since. Michigan automatically adjusts the rate of personal exemptions to meet inflation. Public Act 94 of 2007 raises the income tax from 3.9% to 4.35%.

c. Public Act 284 of 1964, section 141.631, states that a city must allow a minimum exemption of $600. Most cities, including Lansing, have a $600 exemption amount. However, a few cities (including Detroit at $750) allow higher exemptions. We assume a $600 exemption in our analysis.

d. The general city income tax rate is 1% for residents and 0.5% for nonresidents, with an allowance for cities to levy a lower rate; see section 11 of the City Income Tax Act. Some cities (Highland Park, Grand Rapids, and Saginaw) are allowed to levy rates of up to 2% on residents. In addition, Section 3 of the Act provides for a city with a population in excess of 750,000 (Detroit) to levy income taxes at up to 2.5% for residents. Under PA 500 of 1998, Detroit's rates are required to decline over time to 2%. Under the required rate reduction schedule, the effective rate for 2002 is 2.65% for residents and half that for nonresidents. See Citizens Research Council, "Outline of the Michigan Tax System," found at www.crcmich.org.

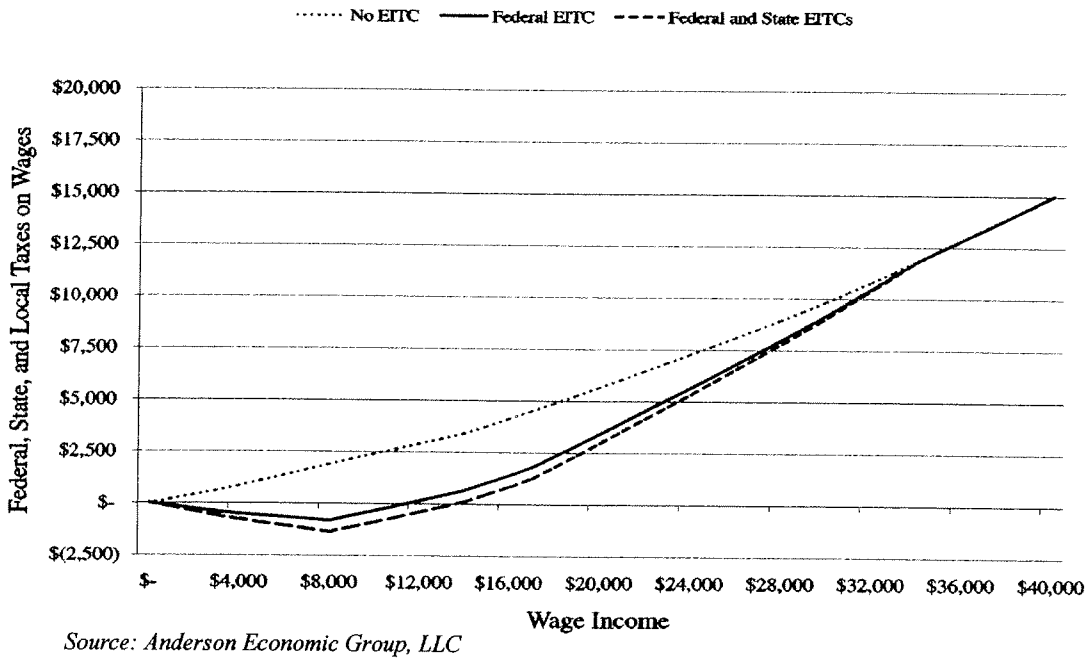
e. See State of Michigan, Bureau of Workers'& Unemployment Compensation website (statistics section); table "Average Contribution Rate Based on Total and Taxable Payrolls, 1936-2004."

TAX BURDEN BY LEVEL OF INCOME

Taxes that begin with the first dollar of earnings are a barrier towards working out of poverty. Income taxes have personal exemptions and deductions that result in the tax exemption of the first few thousands of earnings. However, social security taxes begin with the first dollar earned. As shown in Figure 5, income and payroll taxes paid by a married couple with one child begin with the first dollar of earnings.

The EITC provides tax relief for low-income workers. At low levels of earnings, the EITC provides a credit for payroll taxes and provides cash assistance. These workers receive income support from the federal government at earnings below $12,000 for a married couple with one child. See Figure 5 below.

FIGURE 5. Taxes Paid by Married Family with One Child by Wages Earned, With and Without Earned Income Tax Credits, 2007



Source: Anderson Economic Group, LLC

The tax burden workers face dramatically changes with the EITC. The effective tax rate (taxes paid divided by wages) on the first $1,000 of wages without the EITC is 20% for a married couple with one child. The federal EITC reduces the tax burden and provides money back to the couple, making the effective tax rate -14% (see note in Table 2 on page 11 for a description of taxes paid). This becomes even larger with a state EITC. Although Michigan did not have a state EITC in 2007, if it did, the couple would have had a -21% effective tax rate. As shown by Figure 5 above, this means that taxes paid were negative, and since the EITC is refundable, this means the couple would get a check back from the government.

The negative and much lower effective tax rates only occur when the income earned is very low. Once the income rises above the poverty level, taxation is phased in until it becomes the same effective tax rate with the EITC at about $35,000 for the married couple with one child.

TABLE 2. Effective Tax Rate for a Married Couple with One Child With and Without the EITC, 2007

Wages	No EITC	Federal EITC	Federal and MI EITC
$1,000	20%	-14%	-21%
$5,000	22%	-12%	-19%
$10,000	24%	-3%	-9%
$20,000	28%	17%	15%
$30,000	33%	31%	30%

Source: Anderson Economic Group, LLC
Note: Taxes included in this calculation are shown in Table 1 on page 9. Taxes include: federal income tax, state income tax, city income tax, OASDI, medicare, unemployment insurance, and the federal unemployment tax. See Table 1 for information on tax rates, exemptions, and deductions.

III. State Cost of the Michigan EITC

LIKELY PARTICIPATION IN A STATE EITC

National data indicates that federal EITC participation by eligible households has been over 90%. Michigan's state EITC builds upon the federal EITC. Based on the experience of other states that have implemented a state EITC, it is reasonable to expect that most eligible households in Michigan would participate in the MEITC. Other states that have passed a state EITC have seen participation rates from 80% to over 90% of eligible households.[6]

The number of federal EITC filers in Michigan grew 21% between 2000 and 2004. This growth is likely due to a poor economy rather than population growth, which has been minimal. In 2004, 662,912 EITC returns were filed by Michigan residents. This trend may have reversed in past two years; Michigan households with earnings under $25,000 fell by 7% from between 2004 and 2006, which may have slightly reduced the number of EITC filers in Michigan in the corresponding tax years.

REVENUE IMPACT OF A MICHIGAN EITC

In order to estimate the effect of a MEITC on the state budget, we created a model that projects: (1) the number of workers who would qualify for the MEITC, (2) the number who would actually claim the credit, (3) the average amount of the credit, (4) the number of new workers that would enter the labor force due to the credit, and (5) the taxes these new workers would pay on new earnings.

The AEG model projects the *gross cost* of the EITC, which is the total amount of credits offered by the State of Michigan, and the *net cost* of the EITC, which is the gross cost less the additional taxes paid and reduction in government benefits received, by those who entered the workforce. The net cost provides the more accurate assessment of how a MEITC would impact the state of Michigan's budget as it takes into account both the revenue and expenditures of the state that are affected by a Michigan EITC. Table 3 summarizes the results of our analysis.

TABLE 3. Gross and Net Costs of 10% and 20% MEITC

Fiscal Year	Credit Amount	MEITC Gross Cost	MEITC Net Cost	Net Cost as a % of Gross Cost
2009[a]	10%	$104,142,261	$40,711,633	39.1%
2010	20%	$231,404,105	$100,070,989	43.2%
2011	20%	$245,264,935	$109,302,327	44.6%
2012	20%	$259,815,420	$119,060,130	45.8%
2013	20%	$275,086,957	$129,370,043	47.0%

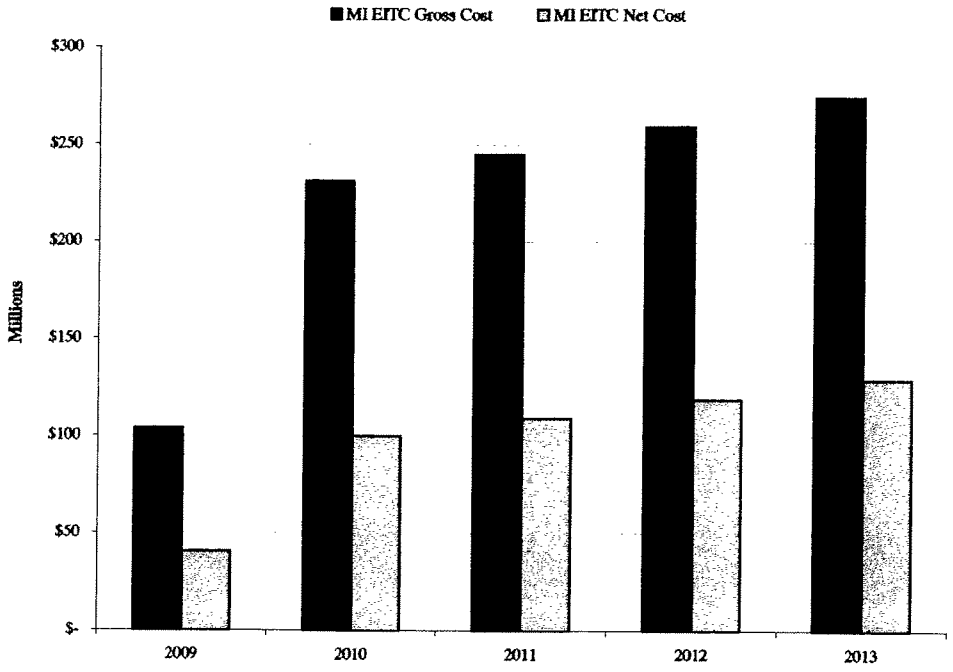
Source: Anderson Economic Group, LLC

a. The 10% credit amount is for tax year 2008, but the state of Michigan would not pay the credit until FY 2009.

6. Jason Lakin and Ed Lazere, *The District Earned Income Tax Credit: Helping Working Families Escape Poverty*, D.C. Fiscal Policy Institute, November 2002.

The cost of a MEITC will phase in over a two-year period. For the first year of the credit, tax year 2008, the credit is worth 10% of the federal credit. In the tax years that follow the credit increases to 20%. The first year the state will have to pay for the credit is in FY 2009. We estimate the gross cost to be $104 million this first year, but the net cost to the state to be 39% of this amount or $40 million. This $40 million represents just 0.2% of state revenue from state sources in FY 2006.[7]

FIGURE 6. Gross and Net Costs of Michigan EITC, 2009-2013



Source: Anderson Economic Group, LLC
Note: Net cost accounts for additional tax revenue the state receives from new wages of workers who move into the labor force due to the EITC. New tax revenue from these workers is calculated as 8.5% of new wages. This is based on the percentage of income paid in taxes by Michigan residents the past few years, adjusted for the higher individual income tax rate of 4.35% that was enacted in October of 2007. Taxes include sales, income, excise, and property taxes.

In years following FY2009, the estimated gross cost of the MEITC increases to over $230 million. The net cost in FY 2010 to FY 2013 is between $100 million and $129 million. The estimated cost increases sharply from 2009 to 2010 mainly because the size of Michigan's EITC is set to increase from 10% of the federal credit to 20% in 2010 and beyond.

7. Calculation is based on revenue subject to the Headlee limit, which was $25.8 billion in FY 2006. The "Headlee amendment" is a provision in the Michigan Constitution that limits the annual tax revenue collected from Michigan residents to no more than 9.49% of annual personal income.

Several other factors explain the 2009-2010 cost estimate increase, and all of the annual increases after 2010. First, to account for a gradual spread in awareness of the program the participation rate (the proportion of those eligible for the Michigan EITC actually applying for the credit) is assumed to start at 80% in 2009, and then grow by two percentage points per year before settling at 90%. This source of cost growth will disappear after the utilization rate has reached about 90%. Second, the size of the federal credit will increase by inflation, assumed to be 2.5% in our simulation, causing a corresponding increase in the Michigan credit amount. Finally, the number of taxpayers eligible for the MEITC is assumed to grow by 1% per year.

While our gross and net cost estimates reflect expected economic and tax conditions in the future, these may change in ways we can not anticipate today. We would expect the number of filers to change with the business cycle. Michigan revenue should grow along with increases in income. If personal income growth is faster than inflation, over time the net cost of the MEITC would become a slightly smaller share of state revenue from state sources.

COMPARISON WITH 2002 REPORT

In this report we followed the same methodology as the Anderson Economic Group 2002 report *A Hand Up for Michigan Workers: Creating a State Earned Income Tax Credit*.[8] Following this methodology, we projected the number of EITC filers over the next five years, the average credit amount, participation rate, increased work effort and reduced payment of state welfare benefits due to the MEITC. Our new cost estimates include recent EITC tax return data, new state and federal income tax rates, and new deduction and exemption amounts. This update also models the actual EITC law that was passed in Michigan, which includes a 10% and 20% credit. In the 2002 report, we modeled hypothetical 10% and 25% credits. We also made refinements to our 2002 model such as beginning with a lower participation rate that reflects the experience of other states and increasing the average credit amount by inflation annually.

The MEITC cost estimates from our updated model are slightly different than our 2002 estimates. This is explained by a number of factors that includes higher tax rates and number of filers in 2007. The general conclusion is the same and results from both models are the same order of magnitude. See "Appendix A: Fiscal Cost Model for MEITC" for the complete methodology and parameters used in this report and Anderson Economic Group, *A Hand Up for Michigan Workers: Creating a State Earned Income Tax Credit* (2002) for the complete methodology used in the 2002 cost model.

8. Report is available at AEG's website: http://www.AndersonEconomicGroup.com.

Appendix A: Fiscal Cost Model for MEITC

DATA

We estimated the number of Michigan taxpayers filing for the federal EITC from 2008 to 2013 using data from the IRS Statistics of Income (SOI) series and data on the number of households in Michigan from the census bureau. The most recent IRS data available on Michigan EITC filers is from 2004.

METHODOLOGY

Our analysis of the gross and net cost of the MEITC to the state of Michigan uses a simulation model. Our simulation model accounts for dynamic effects, such as more earnings due to increased incentives to work, and for an increase in the number of EITC filers due to the added incentive created by the MEITC. See AEG's 2002 report for a detailed schematic of this model.[1] Note that the parameters of the model used for this analysis differ slightly from the 2002 model. Our updated model accounts for growth in the number of taxpayers filing for the EITC and for inflation-matching growth in the size of the average federal EITC credit paid.

Michigan's EITC will be 10% the size of the federal credit in 2009, growing to 20% in 2010 and beyond. Our model includes an assumption that for each 10% of the federal credit that makes up the MEITC, the number of EITC filers in Michigan will increase by 5%.

We estimated the number of Michigan taxpayers filing for the federal EITC from 2008 to 2013 using the following methodology.

1. Using 2002 to 2004 data from the IRS SOI and the Census Bureau, we calculated the number of EITC filers as a percentage of the number of households with income below $25,000 per year. The percentage ranged from 60.5% to 63.3%.
2. To estimate the number of 2006 federal EITC filers in Michigan, we multiplied the highest of these percentages, 63.3%, by the number of households in Michigan with incomes below $25,000 per year in 2006, the most recent estimate available from the Census Bureau. We applied the higher percentage in the range in order to ensure we do not underestimate the cost of the MEITC program, because including more households in our simulation raises the apparent cost.
3. To estimate the number of filers for the MEITC in years beyond 2006, we applied a 1% per year growth rate to the 2006 estimate. This accounts for Michigan's likely sub 1% population growth and the potential for difficult economic times in Michigan over the next several years. If Michigan's population or economic growth exceeds these conservative assumptions, the cost of the EITC program will be lower than our estimate.

We estimate the average federal EITC credit amount using 2004 IRS SOI data on Michigan filers. We then increase the 2004 credit amount by inflation for each year

1. Patrick L. Anderson, *A Hand Up for Michigan Workers: Creating a State Earned Income Tax Credit*, Anderson Economic Group, 2002. This report is available at http://www.AndersonEconomicGroup.com.

beyond 2004. We assume inflation to be 2.5% per year for each year of our simulation.

Table 4 below summarizes these and other assumptions. Assumptions not detailed above are values for which precise estimates do not exist, but which are within the range exhibited by other states by our professional estimates.

TABLE 4. Parameters in Fiscal Cost Model

Parameter	Amount
Inflation rate from 2004 to 2013	2.5% per year
EITC filers base growth, 2006-2013	1% per year
EITC average credit amount growth, 2004-2013	Inflation rate
EITC filers base size, 2006	627,226
EITC average credit amount, 2004	$1,763.87
Michigan participation rate, 2008	80%
Growth in participation rate, 2008-2013	2 percentage points per year, peaking at 90%
Average new wage earnings by new EITC filers	$10,000 per year
Average amount saved by taxpayers on new EITC filers	$1,000 per year

Source: Anderson Economic Group, LLC

Appendix B: About the Authors

Anderson Economic Group, LLC (AEG) is a consulting firm with expertise in economics, public policy, financial valuation, market research, and land use economics. AEG has offices in Michigan, Illinois, and Texas.

PATRICK L. ANDERSON

Mr. Anderson founded the consulting firm of Anderson Economic Group in 1996, and serves as a principal and chief executive officer in the company. In this role he has successfully directed projects for state governments, cities, counties, nonprofit organizations, and corporations in over half of the United States.

Mr. Anderson's views are often cited in news reports throughout the United States, and his articles have been published by *The Wall Street Journal*, *The Detroit News*, *The Detroit Free Press*, *American Outlook*, *Business Economics*, and other publications. His book *Business Economics and Finance* was published in 2004, and his paper on "Pocketbook Issues and the Presidency" was awarded the Edmund Mennis Award for the best contributed paper in 2004 by the National Association for Business Economics. Mr. Anderson also contributed the chapter on business valuation and commercial damages to the book *Litigation Economics*, published in 2005, and is the executive editor of the *State Economic Handbook 2008*.

Prior to founding Anderson Economic Group, Mr. Anderson served as the Chief of Staff of the Michigan Department of State, and as Deputy Budget Director for the State of Michigan under Governor John Engler. Prior to his involvement in State Government, Mr. Anderson served as an officer in Alexander Hamilton Life Insurance, an economist for Manufacturers National Bank of Detroit, and a graduate fellow with the Central Intelligence Agency in Washington DC.

Mr. Anderson is a graduate of the University of Michigan, where he earned a Master's degree in public policy and a Bachelor's degree in political science. He is a member of the National Association for Business Economics and the National Association of Forensic Economists. The Michigan Chamber of Commerce awarded Mr. Anderson its 2006 Leadership Michigan Distinguished Alumni award for his civic and professional accomplishments.

CAROLINE M. SALLEE

Ms. Sallee is a consultant at Anderson Economic Group, working in the Public Policy, Fiscal, and Economic Analysis practice area. Ms. Sallee's background is in applied economics and public finance.

Ms. Sallee's recent work includes an economic impact study for Michigan's University Research Corridor, fiscal and economic impact studies for Michigan State University, and the benchmarking of Michigan's business taxes with other states in a project for the Michigan House of Representatives. She has also completed several technology industry reviews, estimating the wages and employment of technology workers in Southeast Michigan and West Virginia.

Prior to joining Anderson Economic Group, Ms. Sallee worked for the U.S. Government Accountability Office (GAO) as a member of the Education, Workforce and Income Security team. She also has worked as a market analyst for Hábitus, a market research firm in Quito, Ecuador and as a legislative assistant for two U.S. Representatives.

Ms. Sallee holds a Master of Public Policy degree from the Gerald R. Ford School of Public Policy at the University of Michigan and a Bachelor of Arts degree in economics and history from Augustana College.

ALEX L. ROSAEN

Mr. Rosaen is a senior analyst at Anderson Economic Group, working in the Public Policy, Fiscal, and Economic Analysis practice area. Mr. Rosaen's background is in applied economics and public finance.

Mr. Rosaen's recent work includes an analysis of the fiscal impact of a proposed power plant in Midland, Michigan, an analysis of the impact of tax incentives on the freight rail industry, and an analysis of the economic impact of a second bridge span for the Ambassador Bridge in Southeast Michigan.

Prior to joining Anderson Economic Group, Mr. Rosaen worked for the Office of Retirement Services (part of the Michigan Department of Management and Budget) for the Benefit Plan Design group. He has also worked as a mechanical engineer for Williams International in Walled Lake, Michigan.

Mr. Rosaen holds a Master of Public Policy degree from the Gerald R. Ford School of Public Policy at the University of Michigan. He also has Master of Science and Bachelor of Science degrees in mechanical engineering from the University of Michigan.