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LOCAL LABOR MARKETS AND THE FEDERAL EARNED INCOME TAX CREDIT

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EXECUTIVE SUMMARY

The Earned Income Tax Credit (EITC), which offers relief from federal income-tax payments for a targeted group of taxpayers, is based on national income limits and the presence of dependent children. Benefits determinations are made with a flat national maximum level of assistance. The EITC is extended to nearly 29 million families and costs the U.S. Treasury about \$64 billion annually.

While the EITC uses national parameters to determine eligibility and benefits, the U.S. labor force is dispersed among a series of disparate labor markets in metropolitan areas. Each market within each geography has unique characteristics, with vastly different wage distributions and costs of living. The unique characteristics of local labor markets make the unyielding nature of a national EITC far less effective to induce labor-force changes in high-cost areas, and much more effective in low-cost areas.

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In this paper, we demonstrate that, while 20 percent of U.S. residents claim the EITC, the rate of claims differs vastly by metro area. EITC claim rates range from 5.5 percent in Los Alamos, New Mexico, to more than 50 percent in Rio Grande City, Texas. A primary contributor to these differentials is the difference in the credit's real value across areas with different costs of living. The real value of the maximum EITC for a single taxpayer with one child ranges from \$4,131 in Harlingen, Texas, to \$1,531 in New York City.

The EITC's national income limits for eligibility and its phase-out range induce varying labor-market incentives across markets with different wage distributions. The national parameters treat similar workers differently when they live in different areas. Consider a typical single parent working as a dishwasher in San Francisco; she will be subject to the phase-out of benefits after working 1,688 hours, while that same dishwasher in Brownsville, Texas won't face this tax until working 2,190 hours.

Adjusting the value of the EITC for local labor-market and cost-of-living conditions would provide a way to target credit expansion to the most needy and induce a larger labor-market response. Changing the EITC to adjust for real purchasing-power differences could be set to maximize the policy's employment impact across labor markets by reducing implicit marginal tax rates. Our simulations show that, to induce a 6-percentage-point increase in the labor-force-participation rate of eligible taxpayers, the maximum EITC for single parents in New York City would need to be \$9,905, while a credit of \$5,897 would induce the same response in Memphis, Tennessee.

INTRODUCTION

Since its inception 40 years ago, the Earned Income Tax Credit (EITC) has provided tax relief to America's working poor. While the policy's details have changed over the years – in terms of how it works, who receives benefits and how large those benefits are – the EITC is viewed widely as an effective approach to fight poverty and expand employment opportunities.

This paper, which examines the federal EITC's current iteration, has four central findings:

1. At the national level, 20 percent of taxpayers benefit from the EITC, with an average tax reduction of \$2,371. There are wide disparities in benefits across metropolitan areas, with claim rates ranging from 5.5 percent in Los Alamos, New Mexico, to more than 50 percent in Rio Grande City, Texas. Claim-rate differentials are strongly related to city-level poverty, family size, employment and local cost of living.

2. Cost-of-living differences across U.S. metropolitan areas create vast differences in the real value of the EITC. For a single taxpayer with one child, that value ranges from \$4,131 in Harlingen, Texas, to \$1,531 in New York City.
3. The EITC's national income limits generate differing labor-market incentives for similar workers in different metropolitan areas. The typical single parent working as a dishwasher in San Francisco will be subject to credit reductions after working 1,688 hours, while that same dishwasher in Brownsville, Texas, won't face this tax until he or she has worked 2,190 hours.
4. Model simulations show that, to induce a 6-percentage-point increase in the labor-force participation rate among eligible taxpayers, the EITC would need to be vastly different across metro areas. For single parents in New York City, it would take a credit of \$9,905 to induce the same response as a \$5,897 credit would in Memphis, Tennessee.

Policymakers on both sides of the political aisle have been outspoken supporters of EITC expansion, but there remains disagreement on the type of expansion that would be most effective in boosting employment and reducing poverty. The two most common approaches to transforming the EITC are to expand the size of the maximum-available credit (especially for childless workers) or change the rate of the credit to make work more rewarding (especially in the "phase-out" region). Each of these policies has merit, but each fails to account for how the EITC interacts with the local nature of labor markets.

Among the vast differences in U.S. labor markets, none are more striking than the relative value of an earned dollar. A dollar earned in Cleveland would have only about 45 cents of purchasing power in Manhattan; a \$30,000 salary in San Francisco is equivalent to earning barely more than \$16,000 in Omaha, Nebraska.

Despite these vast differences in real purchasing power across labor markets, the federal EITC has strict national parameters that do not adjust for local labor-market conditions. For example, the current maximum credit for taxpayers with one dependent child is set by statute at \$3,359. Across U.S. metropolitan areas, the real purchasing power of that credit ranges from slightly more than \$1,500 to more than \$4,100. These differences result in the policy having uneven impacts across labor markets. The EITC has little impact to induce employment in high-cost areas but a large positive impact in low-cost metros.

Making cost-of-living adjustments to the EITC could provide a more targeted way to expand the credit to those in greater

TABLE 1: FEDERAL EITC SCHEDULE

Taxpayer	Phase-in rate (%)	Income level, phase-in ends (\$)	Max credit (\$)	Income level, phase-out begins (\$)	Phase-out rate (%)	Income level, credit exhausted (\$)
Single, no children	7.65	6,580	503	8,240	7.65	14,820
Single, 1 child	34.00	9,880	3,359	18,110	15.98	39,131
Single, 2 children	40.00	13,870	5,548	18,110	21.06	44,454
Single, 2+ children	45.00	13,870	6,242	18,110	21.06	47,747
Married, no children	7.65	6,580	503	13,760	7.65	20,340
Married, 1 child	34.00	9,880	3,359	23,630	15.98	44,651
Married, 2 children	40.00	13,870	5,548	23,630	21.06	49,974
Married, 2+ children	45.00	13,870	6,242	23,630	21.06	53,267

Source: Internal Revenue Service and Center on Budget and Policy Priorities

need with the worst labor-market attachments. The credit could be adjusted to increase fairness, maximize the policy's employment impact across labor markets and reduce problems of welfare migration and increasing marginal tax rates.

POLICY BACKGROUND

The Earned Income Tax Credit (EITC), which offers relief from federal income-tax payments for a targeted group of taxpayers, is based on national income limits and the presence of dependent children. It is a refundable credit – that is, if the size of the credit creates negative tax liability, a recipient is eligible to receive that payment. There are four basic components to the credit:

1. A “phase-in” range, in which every dollar of additional earned income is supplemented by a percentage-based tax benefit;
2. A nationally set maximum credit that can be awarded;
3. An income level at which the credit begins to be removed (“phased-out”), with a corresponding phase-out rate; and
4. An income level at which the credit is completely exhausted.

The generosity of the credit and income parameters vary with the worker's tax status and number of dependent children, according to the schedule in Table 1:

The EITC is designed to create an incentive for tax filers to enter and maintain attachment to the labor force, while providing a cash transfer to boost incomes. The policy began

in 1975 as an offset to Social Security taxes for low-income workers. It has grown since then into one of the primary ways the federal government works to combat poverty.¹ Over the past 40 years, the federal EITC has undergone several expansions to increase the size of credit, change eligibility, expand income limits, reduce fraud and improve incentives. Currently, the EITC is extended to nearly 29 million families and costs the U.S. Treasury about \$64 billion² annually.

DISTRIBUTION OF EITC BENEFITS ACROSS U.S. CITIES

Nationally, about 20 percent of tax filers receive some benefit from the EITC, with an average tax reduction of \$2,371. Both the share of tax filers and the average benefit differ widely across the country. The metro area with the highest percentage of taxpayers who benefit from the EITC is Rio Grande City, Texas, with more than 51 percent receiving at least some tax reduction. Demonstrating the degree of variation across metros, Los Alamos, New Mexico has the lowest percentage of taxpayers who benefit from the EITC, at just 5.5.

The average tax reduction from the EITC also varies, but not by nearly as much as the claim rate. The largest average tax reduction from the EITC is found in Zapata, Texas, at more than \$3,400. The smallest is in Breckenridge, Colorado, where the average reduction is just \$1,400.

Local labor market conditions, demographics and cost of living all play roles in driving these differences across met-

1. Jonathan B. Forman, “Earned Income Tax Credit,” *The Encyclopedia of Taxation and Tax Policy*, 2nd edition, eds. Joseph Cordes, Robert Ebel and Jane Gravelle, Urban Institute Press, Washington D.C., 2005.

2. This figure includes \$61 billion of direct outlays and \$3 billion in lost tax revenue.

ropolitan areas. Generally, poorer areas show higher claim rates and larger claims, especially in areas with larger average family size. Table 2 shows EITC claim rates and average claims for select large metropolitan areas.

TABLE 2: EITC CLAIMS IN REPRESENTATIVE LARGE METROS

City	Claim rate (%)	Avg savings (\$)
Chicago	17.16	2,448
Columbus, Ohio	15.29	2,136
Denver	14.45	2,154
Houston	21.68	2,612
Indianapolis	18.97	2,374
Los Angeles	21.00	2,319
Memphis, Tenn.	30.08	2,861
New York	18.84	2,312
Orlando, Fla.	25.92	2,543
Philadelphia	16.37	2,270
Phoenix	19.66	2,487
San Antonio	24.17	2,541
San Francisco	11.51	1,933
Washington	12.84	2,212
United States	19.62	2,371

Source: IRS SOI 2013 data. Authors' calculations. Metro areas are defined by U.S. Census Bureau's Core Based Statistical Areas (CBSAs), which comprise counties. Percent of tax filers and tax savings are values from 2013 IRS ZIP Code files, aggregated to metropolitan areas using ArcGIS.

The table demonstrates the heterogeneity in EITC benefits; the EITC claim rate in Orlando, Florida, is nearly double that of Washington, while Memphis, Tennessee's rate is nearly triple that of San Francisco. The tax savings from the EITC show less variation, as most metro areas are within a few hundred dollars of the national average, but the average claim in Memphis is 50 percent larger than in San Francisco. A general geographical trend is that higher claim rates and dollars claimed are found in the Southeast and Texas, while lower claim amounts and rates are found in the rest of the country, particularly the Northeast and San Francisco.

As seen in Table 3, smaller metropolitan areas display a much higher degree of variation in both claim rates and average tax savings than larger cities. The claim rate in Brownsville, Texas is nearly four times the claim rate in Stamford, Connecticut. Some modest-income small cities (like Peoria, Illinois) have few beneficiaries from the EITC, while others (like Tupelo, Mississippi) have claim rates near 30 percent. The tax-savings differences are wider in small cities as well, with the average claim differing by more than \$1,000 between Madison, Wisconsin and Brownsville, Texas.

To further examine the cause of EITC benefit differences across metropolitan areas, we use a multifactor model to describe differences between metro areas and determine

TABLE 3: EITC CLAIMS IN REPRESENTATIVE SMALL METROS

City	Claim rate (%)	Avg savings (\$)
Bellingham, Wash.	14.22	1,885
Brownsville, Texas	43.88	3,072
Chapel Hill, N.C.	17.82	2,325
Dayton, Ohio	26.09	2,435
Fairbanks, Alaska	13.40	2,112
Flagstaff, Ariz.	19.79	2,118
Hilton Head, S.C.	19.48	2,476
Idaho Falls, Idaho	22.34	2,401
Madison, Wis.	10.84	1,904
Peoria, Ill.	16.65	2,347
Pueblo, Colo.	24.23	2,336
Stamford, Conn.	11.92	2,147
Tupelo, Miss.	29.20	2,533
Winston-Salem, N.C.	22.04	2,393
United States	19.62	2,371

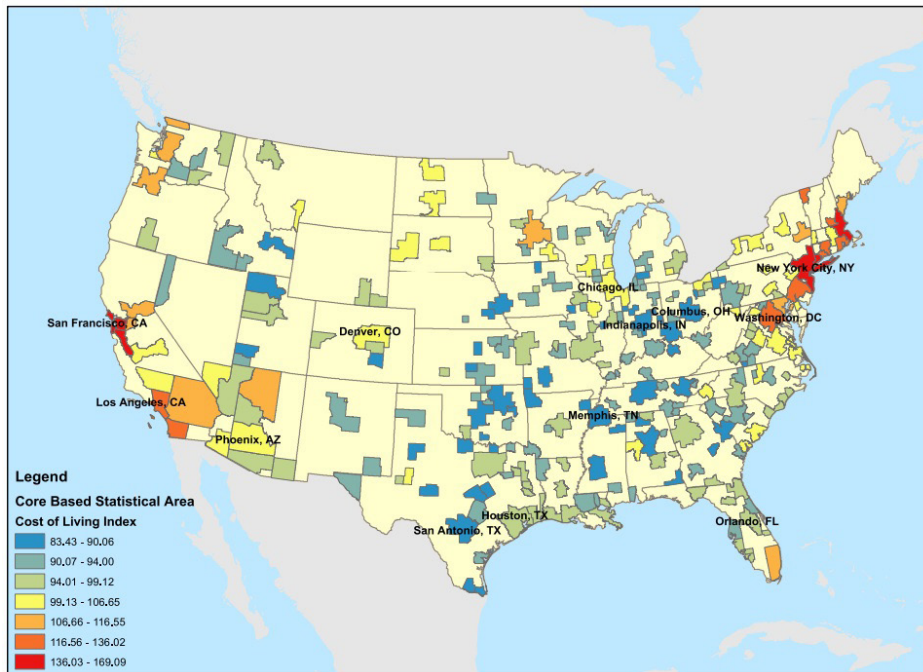
Source: IRS SOI 2013 data. Authors' calculations. Metro areas are defined by U.S. Census Bureau's Core Based Statistical Areas (CBSAs), which comprise counties. Percent of tax filers and tax savings are values from 2013 IRS ZIP Code files, aggregated to metropolitan areas using ArcGIS. Stamford, Conn. includes Bridgeport and Norwalk, Conn. Chapel Hill, N.C. includes Durham, N.C. Brownsville, Texas includes Harlingen, Texas.

how they relate to EITC claim-rate differences. The model examines four basic factors: cost of living; labor-market conditions (employment); poverty; and family demographics (household size). The full model is described in the appendices. These factors were chosen because they represent both factors that make the EITC more generous (poverty, and household size), and less generous (cost of living and employment). The basic model shows that all four factors are strongly associated with EITC claim rates, in both a statistical and economic sense.

Higher poverty rates are associated with higher EITC claims in a metro area. Since the EITC is targeted to lower-income individuals, a greater percentage of low earners implies more EITC claims. The model shows that, while this association is particularly strong, the correlation is not one to one. For a 10 percent increase in the poverty rate, EITC claims jump by 3.7 percent in metropolitan areas. Family size also is positively related to EITC claims. The EITC is more generous for larger families, making it more likely to induce work among that group. In our sample, a 10 percent increase in the average family size relates to a 13 percent increase in the population that claims federal EITC benefits.

The relationship between local employment rates and EITC claims is not as straightforward. A recipient must be employed to claim the EITC, so one might expect a positive relationship between the two. On the other hand, a metro with high employment rates signals a robust labor market, likely to have more jobs that pay in excess of EITC

FIGURE I: COST OF LIVING BY LARGE METRO AREA



SOURCE: The Council for Community and Economic Research. Authors' calculations.

income limits. The latter factor dominates the data, as higher employment rates are associated with lower EITC claim rates. This relationship is quite strong at the metro area level, with a 10 percent increase in the employment rate associated with an 8.5 percent decline in EITC claims.

Finally, our model shows a strong negative relationship between an area's cost of living and EITC claims. For a 10 percent increase in the cost of living, EITC claims fall by 7.5 percent. At first glance, this relationship may seem puzzling: if goods and services are more expensive, wouldn't it behoove the less fortunate to claim the EITC? Unfortunately, the EITC's design as a one-size-fits-all national program severely alters its effectiveness across areas with different cost and compensation structures, a topic explained further in the next section.

COST OF LIVING AND THE EITC

The cost to feed a family in Boston is 53 percent higher than it is in Jackson, Tennessee, but the federal EITC does not recognize that difference when determining the tax break applied to workers in each of those cities. The policy imposes a national maximum on the total applicable EITC, and for each income bracket that determines credit eligibility. This results in real differences in how much benefit the credit creates for poor families in differing local labor markets.

A similar point can be made about any federal policy that

imposes national limits on programs whose impacts vary greatly across different markets. The authors previously made this point about the minimum wage and its impact on employment loss across different states with different pre-existing wage distributions in a 2014 paper for the *Journal of Labor Research*.³ The relevance of a national maximum on the EITC is magnified because it is targeted at those for whom a small difference in the credit may constitute a large share of income. Its importance also has grown as the EITC has become the primary anti-poverty tool deployed at the federal level.

Figure 1 highlights the vast differences in the cost of living across U.S. metropolitan areas.⁴ Not surprisingly, the most expensive are in the major cities of the Northeast and coastal California. There are pockets of higher-cost areas dotted throughout the country – including Miami; Portland, Oregon; Seattle; and Minneapolis. But most of the country, and particularly the Southeast and Texas, are mostly composed of lower cost-of-living metro areas.

These cost-of-living differences transform the EITC from a uniform federal policy to one that has drastically different real value to the working poor across the country. Real

3. Andrew Hanson and Zackary Hawley, "The \$10.10 Minimum Wage Proposal: An Evaluation across States," *Journal of Labor Research*, 35(4), pp. 323–345, 2014.

4. All cost-of-living data come from the Council for Community and Economic Research. Appendix II describes how cost-of-living calculations are made across metropolitan areas.

value differences in the spending power generated by the flat national maximum credit imply that it is less effective at inducing the intended positive response to look for work. This response can be broken down into two pieces:

1. The maximum EITC at the federal level is set nationally. This affects the credit's real value in terms of what a recipient can purchase. The same nominal credit dollar will induce fewer people to seek work in high-cost cities and more people to seek work in low-cost cities.
2. EITC income limits also are set at the federal level. A worker in a high-cost city may be rendered ineligible for the EITC, despite having the same standard of living (real wages, after adjusting for cost of living) as a similar worker in a low-cost city.

Tables 4 and 5 show how the real value of the national maximum credit differs by local cost of living. Nationally, the maximum credit ranges between \$503 (for single taxpayers) to \$6,242 (for taxpayers with three dependent children). These dollar amounts are updated annually to reflect general price inflation, but they are not adjusted to reflect local differences in the buying power the maximum credit affords.

Consider that the \$5,548 maximum federal credit for a family with two children is worth only \$2,529 in New York City, but \$6,523 in Memphis, equivalent to 2.5 times the purchasing power. While the difference between New York and Memphis might be extreme, there are a wide range of metro areas where the cost of living significantly erodes the value of the EITC relative to the median cost of living in the United States. EITC recipients in Philadelphia, Los Angeles, San Francisco and Washington all lose more than a \$1,000 in the real value of the maximum credit, a not inconsequential amount for the working poor in these areas.

At the same time, the residents of some metros enjoy a boon, because the maximum credit is worth more in real purchasing power. Several cities have more than an extra \$500 in real purchasing terms, including Indianapolis, San Antonio and Columbus, Ohio. Geographically, the credit's value is par-

TABLE 4: COL-ADJUSTED VALUE OF MAX CREDIT IN REPRESENTATIVE LARGE METROS (\$)

City	Number of children			
	Zero	One	Two	Three
New York*	229.32	1,531.41	2,529.39	2,845.80
San Francisco	312.86	2,089.27	3,450.80	3,882.46
Washington	360.77	2,409.23	3,979.28	4,477.05
Los Angeles	387.39	2,586.98	4,272.87	4,807.36
Philadelphia	416.29	2,779.94	4,591.58	5,165.94
Chicago	438.14	2,925.86	4,832.59	5,437.10
Denver	484.52	3,235.59	5,344.17	6,012.68
By Statute	503.00	3,359.00	5,548.00	6,242.00
Houston	509.22	3,400.51	5,616.56	6,319.13
Orlando, Fla.	523.74	3,497.50	5,776.76	6,499.37
Phoenix	526.16	3,513.63	5,803.41	6,529.35
Indianapolis	548.95	3,665.83	6,054.79	6,812.19
San Antonio	568.84	3,798.66	6,274.18	7,059.02
Columbus	578.78	3,865.06	6,383.85	7,182.41
Memphis, Tenn.	591.36	3,949.05	6,522.57	7,338.48

SOURCE: Data on cost of living come from the Council for Community and Economic Research. Cost-of-living adjustments include the relative price differences for groceries, transportation, housing, utilities, health care and miscellaneous goods and services.

* New York estimate is for cost of living in Manhattan. Figures for Brooklyn are: \$295, \$1,968, \$3,251 and \$3,658. Figures for Queens are: \$332, \$2,219, \$3,665 and \$4,124.

ticularly eroded in the Northeast and along the West Coast.

TABLE 5: COL-ADJUSTED VALUE OF MAX CREDIT IN REPRESENTATIVE SMALL METROS (\$)

City	Number of children			
	Zero	One	Two	Three
Stamford, Conn.	351	2,342	3,868	4,352
Fairbanks, Alaska	375	2,506	4,139	4,657
Flagstaff, Ariz.	446	2,977	4,917	5,532
Chapel Hill, N.C.	451	3,011	4,973	5,596
Bellingham, Wash.	462	3,088	5,101	5,739
Madison, Wis.	478	3,193	5,273	5,933
Hilton Head, S.C.	470	3,140	5,186	5,835
By Statute	503	3,359	5,548	6,242
Peoria, Ill.	507	3,386	5,592	6,292
Dayton, Ohio	546	3,644	6,019	6,771
Brownsville, Texas	562	3,751	6,196	6,971
Winston-Salem, N.C.	571	3,812	6,296	7,084
Tupelo, Miss.	580	3,870	6,392	7,192
Idaho Falls, Idaho	590	3,939	6,506	7,319
Pueblo, Colo.	605	4,040	6,673	7,508

SOURCE: Data on cost of living come from the Council for Community and

Economic Research. Cost-of-living adjustments include the relative price differences for groceries, transportation, housing, utilities, health care and miscellaneous goods and services.

As shown in Table 5, this is not merely a big-city phenomenon. While the real value of the maximum credit in smaller metros is not eroded as fully as in a place like New York City, there are many smaller areas where the EITC has a substantially lower real value than what is set nominally by federal statute. For example, in Stamford, Connecticut, the real value of the maximum credit is only about 70 percent of what a recipient in a median cost-of-living city like Peoria, Illinois receives. On the other end, many smaller metros are substantially less costly than larger metros, providing a boost in the real value of the maximum credit. In Idaho Falls, Idaho, and Pueblo, Colorado, the maximum credit has more than \$1,000 more purchasing power for a family with three children than the national limit.

Differences in the purchasing power of the maximum credit mean the EITC is less likely to induce the out-of-work to look for a job in high-cost cities, especially considering that many forms of assistance, such as Section 8 housing vouchers, are cost-of-living adjusted. It also means the policy extends the least help to those potentially in the most need – the

working poor who live in high-cost areas.

Compounding the problem is that the EITC also is based on national income limits. A single tax filer qualifies for the maximum credit with an annual income of \$9,880. The credit begins to phase out at an income of \$18,110. And it is completely exhausted at an income of \$39,131, regardless of local incomes and prices in the city where the worker lives. As is obvious to anyone who has spent much time in Manhattan, a \$40,000 annual salary doesn't buy much in the city, while the same wage might be more than enough for a single person to get by in Tupelo, Mississippi.

Combining national income limits with differing costs of living effectively produces different real income limits for the EITC's availability across metro areas. This generates different labor-market incentives for similar workers in different metropolitan areas. Consider the income level at which the credit is completely exhausted – \$39,131. That level of nominal income has much less real purchasing power in New York than it does nationally. Workers with that level of income in

TABLE 6: COL-ADJUSTED EITC INCOME LIMITS IN REPRESENTATIVE LARGE METROS (\$)

City	Single			Married		
	Max credit eligible	Phase out begins	Credit exhausted	Max credit eligible	Phase out begins	Credit exhausted
New York*	4,504	8,257	17,840	4,504	10,773	20,357
San Francisco	6,145	11,264	24,339	6,145	14,698	27,772
Washington	7,086	12,989	28,067	7,086	16,949	32,026
Los Angeles	7,609	13,948	30,137	7,609	18,199	34,389
Philadelphia	8,177	14,988	32,385	8,177	19,556	36,954
Chicago	8,606	15,775	34,085	8,606	20,583	38,893
Denver	9,517	17,445	37,693	9,517	22,762	43,011
By Statute	9,880	18,110	39,131	9,880	23,630	44,651
Houston	10,002	18,334	39,615	10,002	23,922	45,203
Orlando, Fla.	10,287	18,857	40,744	10,287	24,604	46,492
Phoenix	10,335	18,944	40,932	10,335	24,718	46,707
Indianapolis	10,783	19,764	42,705	10,783	25,789	48,730
San Antonio	11,173	20,480	44,253	11,173	26,723	50,495
Columbus, Ohio	11,369	20,838	45,026	11,369	27,190	51,378
Memphis, Tenn.	11,616	21,291	46,005	11,616	27,781	52,494

SOURCE: Council for Community and Economic Research data. Parameters reflect tax filer with one dependent child. Differences for single tax filers and those with three or more children would be magnified across metros. Differences for tax filers with two children would be similar to those presented above.

* New York estimate is for cost of living in Manhattan

TABLE 7: COL-ADJUSTED EITC INCOME LIMITS IN REPRESENTATIVE SMALL METROS (\$)

City	Single			Married		
	Max credit eligible	Phase out begins	Credit exhausted	Max credit eligible	Phase out begins	Credit exhausted
Stamford, Conn.	6,888	12,625	27,280	6,888	16,473	31,128
Fairbanks, Alaska	7,371	13,511	29,193	7,371	17,629	33,312
Flagstaff, Ariz.	8,757	16,051	34,682	8,757	20,943	39,574
Chapel Hill, N.C.	8,857	16,235	35,079	8,857	21,183	40,027
Bellingham, Wash.	9,084	16,651	35,979	9,084	21,727	41,055
Madison, Wis.	9,391	17,214	37,194	9,391	22,461	42,441
Hilton Head, S.C.	9,236	16,929	36,580	9,236	22,090	41,740
By Statute	9,880	18,110	39,131	9,880	23,630	44,651
Peoria, Ill.	9,959	18,255	39,444	9,959	23,819	45,008
Dayton, Ohio	10,718	19,646	42,450	10,718	25,634	48,438
Brownsville, Texas	11,034	20,225	43,700	11,034	26,389	49,865
Winston-Salem, N.C.	11,212	20,552	44,408	11,212	26,817	50,673
Tupelo, Miss.	11,384	20,866	45,087	11,384	27,226	51,447
Idaho Falls, Idaho	11,585	21,236	45,885	11,585	27,708	52,358
Pueblo, Colo.	11,884	21,784	47,069	11,884	28,423	53,708

SOURCE: Council for Community and Economic Research data. Parameters reflect tax filer with one dependent child. Differences for single tax filers and those with three or more children would be magnified across metros. Differences for tax filers with two children would be similar to those presented above.

New York are actually poor, but they get no federal EITC.

On the opposite end of the spectrum, the same annual earnings in Columbus, Ohio, translate into \$45,000 of purchasing power, providing a much higher standard of living. Table 6 demonstrates the relative income differences that the EITC income limits actually produce when considering local cost of living in several large metropolitan areas. While this is only a small problem in cities near the median, the EITC income limits severely dampen the credit's usefulness in several metros with a large population living in poverty, like Los Angeles and Washington.

As in the case of the credit maximum, national income limits are not just a problem for big cities. Table 7 shows several smaller towns where the national income limit is substantially less in real terms. The drop-off is nearly \$10,000 in Fairbanks, Alaska, and almost \$5,000 in Flagstaff, Arizona. At the same time, low-cost smaller towns get an even bigger boost from the national income limit. For example, \$39,131 of income – set by statute as the level at which the credit is completely exhausted for a single filer – is equivalent to more than \$47,000 of purchasing power in Pueblo, Colorado, or more than double the purchasing power enjoyed by a worker in Stamford, Connecticut.

Tables 6 and 7 show the real income difference induced by the phase out, which is set nationally at \$18,110. Because EITC income limits are not adjusted for cost of living, workers are

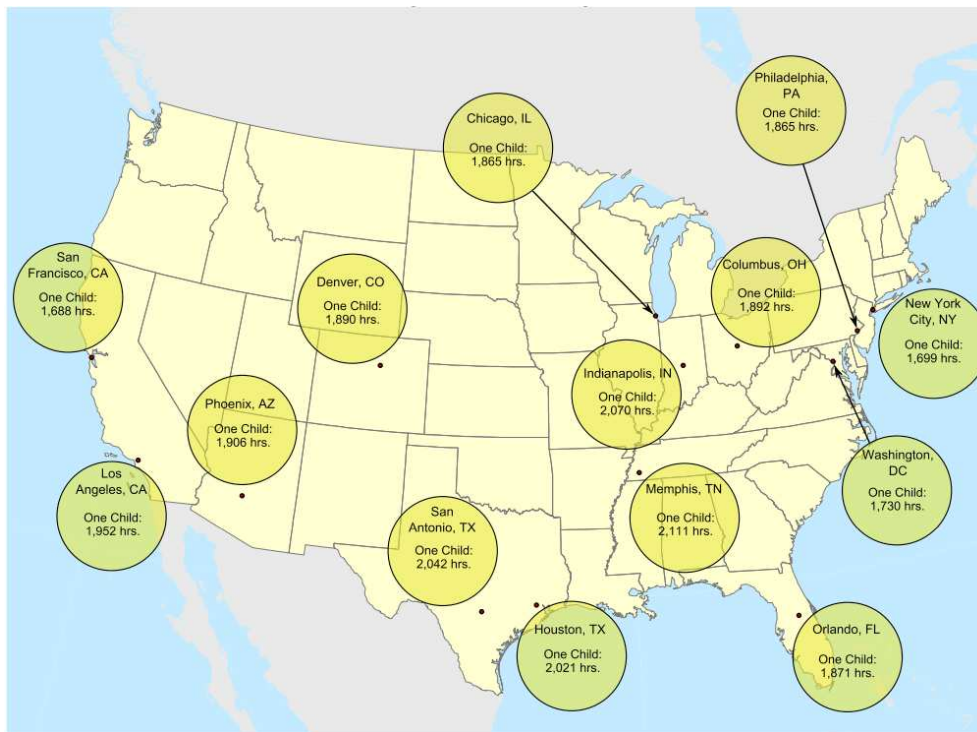
moved into the phase-out range of the credit at significantly different levels of real income. Workers with equivalent skill sets, and probably very similar lifestyles, face enormously different marginal tax rates as the credit is pulled back. When a worker's income moves into the phase-out range, he or she starts to incur the tax of paying back the EITC. This payback happens at especially low levels of effective income in high-cost areas, like New York and San Francisco. This amounts to as much as a 21-percentage-point higher tax rate for a similar worker in different cities.

From a worker's perspective, hitting the phase-out region of the credit can greatly decrease the EITC's incentive to work. As the Congressional Budget Office points out in a 2012 study, the phase out of the EITC – along with the loss, as income increases, of other means-tested anti-poverty programs – creates marginal tax rates in excess of 90 percent for some workers who earn less than \$20,000 annually.⁵

Economist Casey Mulligan makes the connection that these high marginal tax rates destroys the incentive to work, especially for workers with weak attachments to the labor

5. Congressional Budget Office, "Illustrative Examples of Effective Marginal Tax Rates Faced by Married and Single Taxpayers: Supplemental Material for Effective Marginal Tax Rates for Low- and Moderate-Income Workers," November 2012. https://www.cbo.gov/sites/default/files/112th-congress-2011-2012/reports/43722-Supplemental_Material-MarginalTaxRates.pdf

FIGURE 2: HOURS WORKED BEFORE EITC PHASE-OUT ACROSS LARGE METRO AREAS



SOURCE: IRS SOI 2013 data, BLS May 2014 summary file and authors' calculations. Hours worked calculated based on average hourly wage for dishwasher workers in metro area.

force.⁶ Due to local differences in labor-market conditions, the EITC phase out's destruction of work incentives does not affect cities uniformly. Local effects will depend on the interaction between the national income limit and a given city's wage distribution.

To illustrate, take the case of someone with one child working as a dishwasher in different cities. Although this person is living in poverty by any reasonable definition, as a result of the EITC's national income limits, how they are treated by the tax code will differ depending on their nominal wage, which has a different value in different local markets. The dishwasher in Brownsville, Texas who works a standard 2,000-hour year will never hit the EITC phase out. For that worker, the program maintains its normal incentives to work.

But the same dishwasher in San Francisco will have to start repaying the EITC after working just 1,700 hours in a year. That worker's \$10.73 average hourly wage becomes just \$8.47 in take-home pay. That's because the San Francisco worker will have to repay the EITC, even though he or she is no less

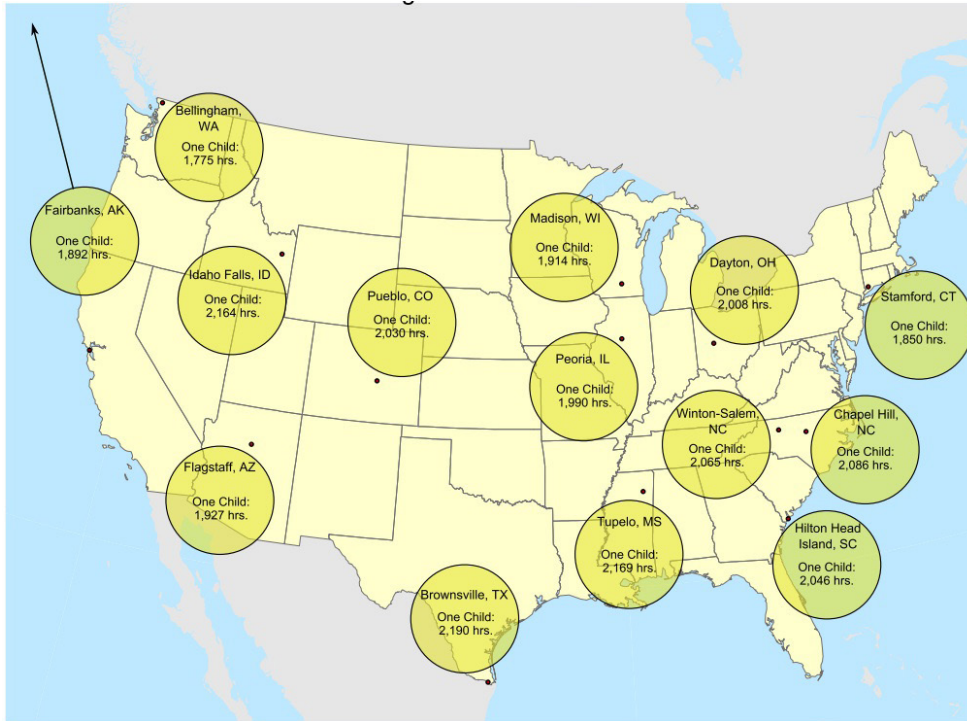
poor, in real terms, than his or her Brownsville counterpart.

Figures 2 and 3 demonstrate how the EITC phase-out effectively begins at different levels of work hours for equivalent workers across U.S. cities. The smaller the number of hours before the phase-out begins, the more disincentive to work the phase-out tax rate creates. For the modest wages earned by a customer-service representative, he or she will hit the phase-out portion of the EITC in all locations. However, this phase-out begins at less than half of a standard work year in many high-cost areas. In low-cost areas, it is as much as 50 percent higher.

This is the central problem of the mismatch between the national income limit and local labor-market conditions – it pushes equivalent workers with similar living standards toward the phase-out region of the EITC at vastly different rates. This problem is exacerbated by differences in local labor-market regulations, most notably the minimum wage. Contrast a city that decides to raise its local hourly minimum wage to \$15 with one that uses the federal minimum of \$7.25. Workers who are able to maintain employment in the higher minimum-wage city will nearly all be moved off the EITC schedule, mitigating any gains they may have had

6. Casey Mulligan, *The Redistribution Recession: How Labor Market Distortions Contracted the Economy*, Oxford University Press, 2012.

FIGURE 3: HOURS WORKED BEFORE EITC PHASE-OUT ACROSS SMALL METRO AREAS



SOURCE: IRS SOI 2013 data, BLS May 2014 summary file and authors' calculations. Hours worked calculated based on average hourly wage for dishwasher workers in metro area. Hilton Head metro uses average wage from the Low Country Non Metro area that covers Beaufort County, which contains Hilton Head. Tupelo metro uses average wage from the Northeast MS Non Metro area that covers Lee County, which contains Tupelo.

from the wage increase. Those gains may be further eroded by the fact that high minimum-wage cities also tend to be high-cost areas and that employers tend to raise prices when faced with minimum-wage increases.

CONCLUSION: MAKING THE EITC MORE IMPACTFUL

The benefits of the EITC are well-established. It improves labor-market opportunities for the working poor, boosts income and is regarded widely as the most effective anti-poverty tool in the federal toolkit. The benefits reach beyond the labor market, with research showing the credit is responsible for a wide range of life improvements, such as better health, improved elementary-school performance and even higher levels of college attendance. Unfortunately, these gains likely are confined to areas where national EITC parameters are generous relative to local wages and costs of living. They may be nonexistent in high-cost metropolitan areas, where many of the nation's poor reside.

A simple and effective fix to expand the EITC's benefits would be to adjust it for local labor-market and cost-of-living conditions. Adjusting the national maximum allowable

credit and national income limits would mean that workers in similar living situations would be treated equitably – a dishwasher in Brownsville, Texas would get the same relative benefits from the EITC as a dishwasher in San Francisco. Adjusting the EITC for local conditions also may help to slow the migration of working poor families out of expensive cities, allowing them to maintain workplace and family networks without sacrificing quality of life.

To equalize EITC's labor-market gains across cities and expand its positive incentive to work, the credit also could be made more generous overall. We simulate a model (details contained in Appendix III) that estimates how much the maximum EITC would need to be increased across metro areas to induce a 6-percentage-point increase in the labor-force participation of local workers. This simulation considers both the cost-of-living adjustment and the general rise in benefits. Results for the metro areas covered by our study are displayed in Table 8. While the increase in the credit that would be needed to boost labor-force participation is sub-

stantial in high-cost areas and for childless workers, who currently receive only a small credit, it is much more modest in low-cost areas and for workers with more children, who already receive a fairly substantial credit.

TABLE 8: INCREASE IN MAX EITC NEEDED TO RAISE LABOR-FORCE PARTICIPATION 6 PERCENTAGE POINTS (\$)

City	Number of children			
	Zero	One	Two	Three
New York*	6,387	6,546	6,339	6,201
San Francisco	4,548	4,798	4,647	4,546
Stamford, Conn.	4,003	4,281	4,146	4,056
Washington	3,877	4,161	4,029	3,942
Fairbanks, Alaska	3,708	4,000	3,874	3,790
Los Angeles	3,576	3,875	3,753	3,671
Philadelphia	3,293	3,606	3,492	3,416
Chicago	3,103	3,426	3,318	3,246
Flagstaff, Ariz.	3,041	3,367	3,261	3,190
Chapel Hill, N.C.	3,001	3,329	3,224	3,154
Bellingham, Wash.	2,914	3,246	3,143	3,075
Hilton Head, S.C.	2,857	3,192	3,092	3,024
Madison, Wis.	2,802	3,140	3,041	2,974
Denver, Colo.	2,758	3,098	3,000	2,935
Peoria, Ill.	2,613	2,961	2,867	2,805
Houston, Texas	2,600	2,948	2,855	2,793
Orlando, Fla.	2,514	2,866	2,776	2,715
Phoenix, Ariz.	2,500	2,853	2,763	2,703
Dayton, Ohio	2,393	2,751	2,664	2,606
Indianapolis	2,375	2,735	2,648	2,591
Brownsville, Texas	2,310	2,672	2,588	2,532
San Antonio	2,275	2,639	2,556	2,500
Winston-Salem, N.C.	2,265	2,630	2,547	2,491
Columbus, Ohio	2,227	2,594	2,512	2,457
Tupelo, Miss.	2,223	2,590	2,508	2,454
Idaho Falls, Idaho	2,176	2,545	2,465	2,411
Memphis, Tenn.	2,169	2,538	2,458	2,405
Pueblo, Colo.	2,109	2,481	2,403	2,350

Source: Data on cost of living come from the Council for Community and Economic Research. Cost-of-living adjustments include the relative price difference for groceries, transportation, housing, utilities, health care and miscellaneous goods and services.

* New York estimate is for cost of living in Manhattan.

This exercise also shows that, while expanding the EITC would be expensive, targeting funding based on cost of living can provide a more even distribution of the policy's labor-market gains. This simulation shows that, from a federal standpoint, \$8,056 in Tupelo, Mississippi will buy you the

same labor-market gains as \$11,887 in New York. Offering the standard national rate prompts basically no response in New York, while inducing a large change in Tupelo. From a practical standpoint, the Internal Revenue Service already collects all of the necessary data to determine the proper cost-of-living adjustment needed to equalize EITC payments. Beyond making geographic adjustments to the EITC, other changes could be made to the tax break to increase its usefulness as a labor-market intervention. First and foremost, the phase-out schedule could be reconfigured to use a lower rate, a change that would remove the current disincentive for additional work. Second, payroll data could be used to disperse EITC payments more regularly, as workers currently receive the benefit in a lump sum once per year. This change could heighten the labor-market response and reduce unnecessary and expensive borrowing by recipients. Lastly, policy-makers should consider how the EITC interacts with both federal and state minimum-wage policies. Minimum wages effectively make the EITC less effective as a means to expand job opportunities for the less fortunate. In the extreme, they could push some EITC recipients into the phase-out region or completely off the credit, curbing any perceived gains.

APPENDIX I: CROSS-SECTION REGRESSION MODEL OF EITC CLAIM RATES

This model examines differences in EITC claim rates (the dependent variable) using differences in local cost of living, poverty, employment and demographics (the independent variables). The basic model uses cross-section regression analysis to determine what factors are related to EITC claim differences. Cross-section regression allows for multiple factors to be examined simultaneously, but does not allow for a clear causal relationship between these factors and EITC claim rates to be determined. The model should be viewed as determining if the set of factors we examine share a relationship with EITC claim rates, holding other factors constant.

The basic model is:

$$\ln(\text{EITC Claim Rate}) = \alpha + \beta_1 (\ln(\text{CLI})) + \beta_2 (\ln(\text{Pov})) + \beta_3 (\ln(\text{Emp})) + \beta_4 (\ln(\text{F.Size})) + \varepsilon$$

Where *CLI* is the cost-of-living value for each metro, measured in an index with a median of 100; *Pov* is the percentage of residents living in poverty; *Emp* is the employment rate; and *F.Size* is the average number of persons per household. All variables are transformed using natural logs, so the interpretation of each output coefficient (β) is an elasticity. Each β estimate shows what percentage EITC claim rate change is related to a given percentage change in the corresponding variable. For example, a β_3 value of 0.5 would be interpreted as a 10 percent rise in employment being related to a 5 percent rise in the EITC claim rate.

We estimate the model using data on a cross section of 251 metropolitan areas where we have data on all four factors. All data are from the year 2013. Cost-of-living data are taken from the Council for Community and Economic Research database, as described in Appendix II. EITC claim rate data come from the IRS Statistics of Income ZIP-code-level files and are aggregated to the metropolitan area using ArcGIS software. Poverty, employment and family-size data come from U.C. Census estimates, using survey data from the American Community Survey.

The results of the model are:

TABLE 9: RESULTS OF CROSS-SECTION REGRESSION MODEL OF EITC CLAIM RATES

Ineitc	Estimate	Std. Err.	t	P>t	[95% Conf. Int.]	
$\ln(\text{CLI}) \beta_1$	-0.75139	0.090124	-8.34	0.00	-0.92891	-0.57388
$\ln(\text{Pov}) \beta_2$	0.370661	0.042414	8.74	0.00	0.287121	0.454201
$\ln(\text{Emp}) \beta_3$	-0.85731	0.103643	-8.27	0.00	-1.06145	-0.65317
$\ln(\text{F. Size}) \beta_4$	1.303222	0.113997	11.43	0.00	1.078687	1.527757
α	7.628794	0.674328	11.31	0.00	6.300601	8.956987

APPENDIX II: COST-OF-LIVING CALCULATION

Cost-of-living data for metropolitan areas come from the Council for Community and Economic Research. We use their 100 percent composite index from the annual aggregation for the year 2013. The data are aggregated from local-area chambers of commerce, based on voluntary participation. The composite index uses the following weights for cost-of-living components (note that rounding to the second decimal results in a summed total value of 100.01, rather than 100):

- Grocery items: 13.48 percent
- Housing: 26.05 percent
- Utilities: 9.95 percent
- Transportation: 12.63 percent
- Health care: 4.89 percent
- Miscellaneous goods and services: 33.01 percent

Housing costs are based on rents, home prices and mortgage-interest rates. Health-care costs are based on doctor, dentist, optometrist and some drug prices. Utilities costs include energy costs and phone costs. Transportation costs include gasoline and some auto repair. Grocery items and miscellaneous goods contain a wide range of items, from bread to tennis balls. Within each category, items are assigned a weight based on the Bureau of Labor Statistics Consumer Expenditure Survey.

The composite index is calculated to assign a value of 100 to the median cost-of-living area, with higher scores for relatively higher cost-of-living areas and lower scores for lower cost-of-living areas. The magnitude of the difference in cost of living is consistent with the difference between 100 and the metro area score, regardless whether one moves up or down the scale.

APPENDIX III: EITC-INDUCED LABOR-MARKET CHANGES

Estimates from a 1996 paper by Nada Eissa and Jeffrey Liebman show that a \$1,186 increase in the maximum EITC results in a 2.8-percentage-point increase in labor-force participation.⁷ More recently, Katie Fitzpatrick and Jeffrey Thompson showed that, for every \$1,000 increase in the local cost of living, the labor-force participation increase from the EITC falls by 1 percentage point.⁸

7. Nada Eissa and Jeffrey Liebman, "Labor Supply Response to the Earned Income Tax Credit," *Quarterly Journal of Economics*, 111(2): 605-637, 1996.

8. Katie Fitzpatrick and Jeffrey Thompson, "The Interaction of metropolitan cost-of-living and the Federal Earned Income Tax Credit: One Size Fits All?" *National Tax Journal*, 63(3): 419-446, 2010.

We use these estimates and the cost-of-living data to create an estimate of the relative adjustment that would be needed for the current EITC to induce a 6-percentage-point increase in labor-force participation. We chose 6 percentage points as our outcome because current labor-force participation rates among women between 25 and 54 are about 74 percent, and most EITC recipients are single mothers. A change of 6 percentage points would bring the rate in line with the population rate for that age range (80 percent). Our calculation also considers that the EITC becomes marginally less effective at inducing labor-force participation as earnings increase, so that a larger credit is needed to move the labor-force-participation rate 1 percentage point from a larger base. Our equation for the size EITC needed for a 6-percentage-point change in labor-force participation is:

$$\text{New Max Credit} = \text{Current Max} + C_i * \frac{(I+P)}{E_g}$$

Where I , P , C_i and E_g come from the following equations:

$$I = \text{LFP Increase} * 2.8 * 1,186$$

$$P = 100 * \text{LFP Increase}$$

$$C_i = \frac{\text{Index}}{100}$$

$$E_g = \frac{1}{\text{Labor Elasticity}}$$

Where I is the unadjusted-dollar increase in maximum EITC credit that would increase the labor-force-participation rate by 6 percentage points; P is the penalty added to this amount, which increases as larger labor-force inducements are desired; and C_i adjusts the amount appropriately for local cost of living. Finally, E_g adjusts for the relative difference in labor-supply elasticities between single workers and those with increasing numbers of dependent children.

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