



California Budget
& Policy Center

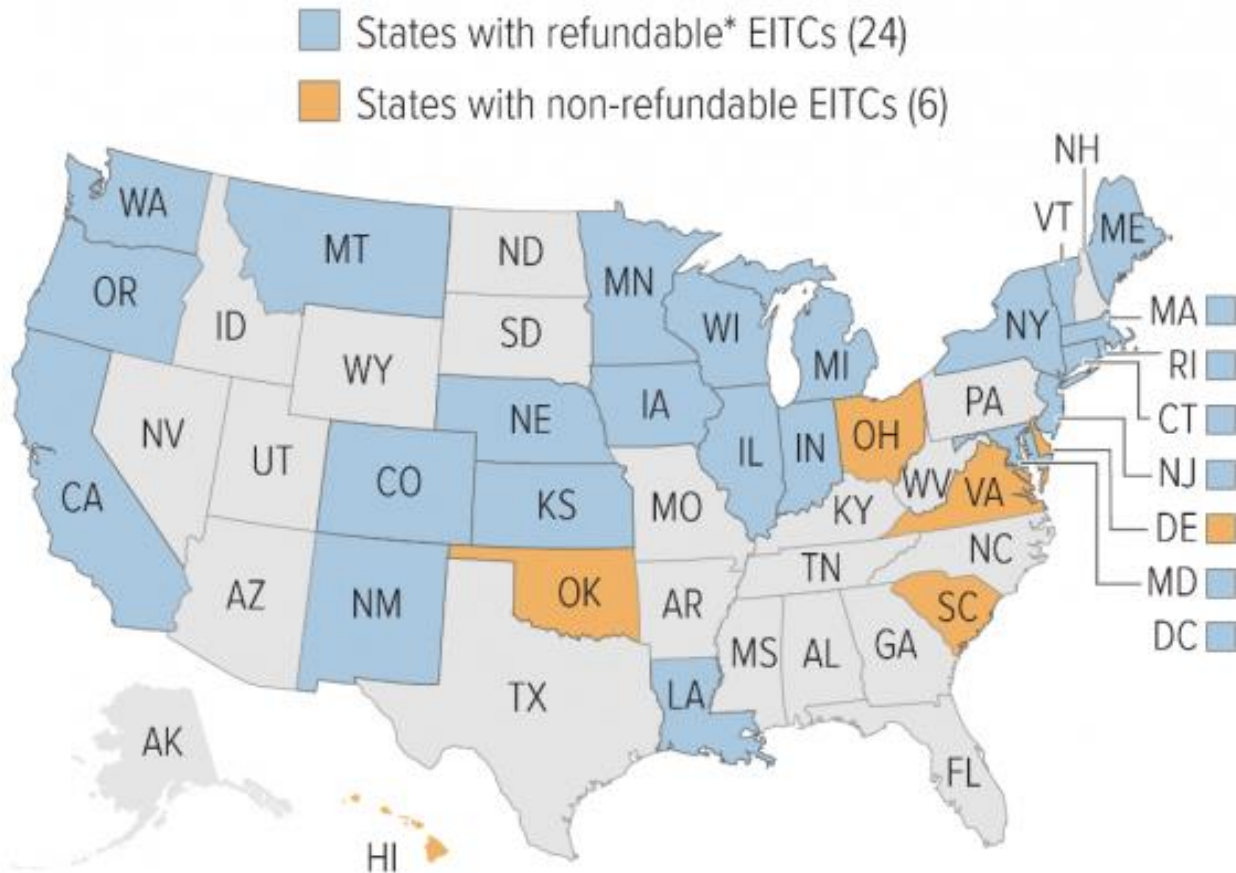
Using Census Microdata to Simulate Effects of Potential Changes to California's State EITC

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Twenty-nine States and DC Have Enacted EITCs, 2017



*Refundable EITCs give working households the full value of the credit they earn even if it exceeds their income tax liability.

Source: CBPP analysis



Presentation Outline

I. Comparison of models for constructing tax units and simulating income taxes in ACS data

- Do more complex approaches produce a better match to IRS administrative data?

II. Simulation of hypothetical expansions of California's state EITC, the CalEITC

- Addressing minimum wage and work incentive effects
- Estimating impacts of interest to policy stakeholders



I. Comparing Income Tax Simulation Models in ACS Data



Attractive features of ACS data for income tax simulation

- Detailed income and family relationship data
- Sample allows for single-year state estimates and sub-state-level estimates (unlike CPS)
- Includes data for individuals not required to file taxes (not available in datasets based on tax returns)
- Includes demographic data not reported on tax returns (e.g., gender, race/ethnicity, occupation)
- Used for state and local SPM-like poverty measures, which account for income taxes in family resources



Key challenge is tax unit construction

- To calculate income tax amounts, use a public-use tool – NBER's TAXSIM calculator, via Stata interface
- But tax calculator requires income and dependents summed to each tax unit, and these are not directly reported in ACS
- Correct allocation of individuals into tax units can be ambiguous, especially in complex families
 - Family units do not always correspond to tax units
 - IRS rules allow some flexibility in who may claim dependents for EITC and dependent exemption
 - In practice, individuals do not always strictly follow IRS guidelines in claiming EITC dependents



Accounting for unauthorized immigrants

- Unauthorized immigrants comprise an estimated 6% of total California population
- Unauthorized immigrants are not eligible to claim EITC or be counted as EITC qualifying children
 - But they are likely to be members of low-income working families, who would otherwise be eligible for EITC
 - Important to account for this ineligibility for accuracy of California EITC estimates



Comparing three models for constructing tax units and calculating income taxes

- **Model 1: Simple tax units, simple income**
 - Tax unit is smaller of family or subfamily
 - Qualifying children are all children age 0-17 (following Census child definition) in tax unit
 - Income is total income of all individuals in tax unit, entered into tax calculator as “earnings”
 - Account for unauthorized immigrants by excluding EITC after tax calculation for all filers flagged as unauthorized
 - Using unauthorized flag developed for California Poverty Measure



Comparing three models for constructing tax units and calculating income taxes

- **Model 2: Intermediate complexity of tax units and income**
 - Initial tax unit is smaller of family or subfamily
 - Qualifying children are all children age 0-18 (following IRS child age definition) in tax unit
 - If subfamily tax unit is not required to file and not EITC-eligible, children are reassigned to tax unit of head of household
 - Income is total for designated filer plus spouse, entered into tax calculator in detailed categories
 - Account for unauthorized immigrants by excluding EITC after tax calculation



Comparing three models for constructing tax units and calculating income taxes

- ***Model 3 (used for California Poverty Measure):***
More complex tax units, same income
 - Initial tax unit is smaller of family or subfamily
 - Qualifying children follow IRS definition for age, student status, unauthorized status for EITC
 - EITC qualifying children strategically assigned among filers within household to maximize household EITC, accounting for ineligibility of unauthorized filers
 - Non-child dependents allocated per IRS support test
 - Income is total for designated filer plus spouse, entered into tax calculator in detailed categories
 - Exclude unauthorized EITC after tax calculation



Preliminary results compared to IRS totals

	IRS SOI	Model 1: Simple	Model 2: Intermediate	Model 3: Complex
Aggregate tax filers	17.760	17.557	13.665	16.467
<i>as % of IRS SOI</i>		99%	77%	93%
Aggregate AGI	\$1,381,947	\$1,236,052	\$1,088,493	\$1,142,635
<i>as % of IRS SOI</i>		89%	79%	83%
Total filers AGI \$1-\$24,999	6.232	4.759	3.212	5.208
<i>as % of IRS SOI</i>		76%	52%	84%
Total filers AGI \$25,000-\$49,999	4.074	3.668	3.336	3.967
<i>as % of IRS SOI</i>		90%	82%	97%



Preliminary results compared to IRS totals

	IRS SOI	Model 1: Simple	Model 2: Intermediate	Model 3: Complex
Total dependents claimed <i>as % of IRS SOI</i>	13.005	8.998 69%	8.665 67%	10.870 84%
Filing status				
Single	48%	51%	45%	49%
Married joint	35%	37%	43%	36%
Head of household	15%	12%	12%	15%



Preliminary results compared to IRS totals

	IRS SOI	Model 1: Simple	Model 2: Intermediate	Model 3: Complex
Total EITC amount - excluding unauthorized immigrants	\$7,655.742	\$4,792.610	\$4,891.945	\$6,336.312
<i>as % of IRS SOI</i>		63%	64%	83%
Total EITC filers - excluding unauthorized immigrants	3.263	2.549	2.286	2.982
<i>as % of IRS SOI</i>		78%	70%	91%
Total EITC amount - not excluding unauthorized immigrants	n/a	\$6,311.144	\$6,522.494	\$7,280.596
<i>as % of IRS SOI</i>		82%	85%	95%
Total EITC filers - not excluding unauthorized immigrants	n/a	3.104	2.844	3.299



Conclusions

- More complex tax unit approach produces substantially closer match to IRS data for EITC claims for California
- Accounting for ineligibility of unauthorized immigrants for EITC significantly alters aggregate EITC estimates for California



II. Simulating CalEITC Expansions Using ACS Data



CalEITC Context

- Refundable state earned income tax credit established in 2015 (first implemented for tax year 2015)
 - Ongoing interest among policy stakeholders in expanding reach and size of credit
- Unlike most state EITCs, structure does not directly parallel federal EITC – e.g., only targets lowest-income earners, no plateau, no larger income limits for married filers
- Changes adopted in 2017 state legislative session will make self-employment earnings eligible and extend income eligibility for parents and childless filers through second phase-out range
- Distinct structure requires direct modeling in data (estimates cannot be derived from federal EITC estimates)



Simulation of baseline credit and two hypothetical expansions

- Data: IPUMS ACS California sample for 2015 (n= 374,973)
- CalEITC baseline and expansions simulated as if implemented in tax year 2015, with parameters adjusted for inflation where applicable
- ACS income tax simulation (Model 3 above, from CPM) used to construct tax units and calculate EITC dependents, tax unit income
- Then CalEITC calculated based on policy parameters
- Baseline CalEITC = credit incorporating changes adopted in 2017



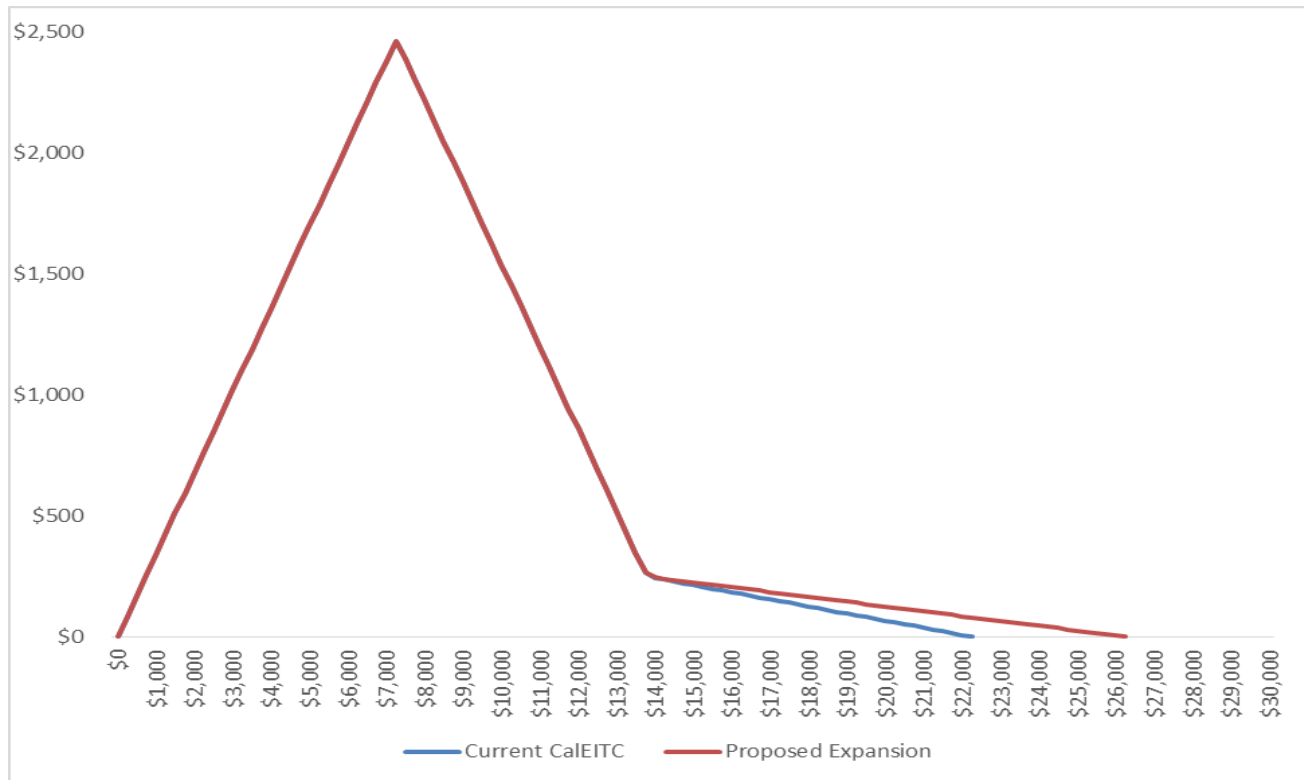
Expansion 1: Link income eligibility limit to minimum-wage salary

- California recently approved a significant minimum wage increase, which steps up gradually to \$15/hr by 2023
- Recent 2017 CalEITC change pegs income limit for *parents* to current minimum wage
- Simulated expansion assumes CalEITC income limit for both *parents and childless* filers set at full-time minimum wage salary, simulated when full phase-in of state minimum wage increase has taken effect



Expansion 1: Link income eligibility limit to minimum-wage salary

Structure of existing CalEITC as of 2017 and Expansion 1 (shown for tax filer with two children only, in 2017 dollars)



Incorporating dynamic employment effects

- **Expansion 1: Account for wage increase and disemployment due to minimum wage increase**
 - Assume 1.3% disemployment rate in affected worker population per 10% increase in minimum wage; for all other workers in affected population, assume hourly wage increases to new minimum, with no change in hours worked
 - Challenges in identifying pool of affected workers: imprecise reporting of weeks worked, “under the table” workers
 - Process: Randomly assign disemployment (assume \$0 earnings), assign increased earnings to remaining workers, re-run tax unit and income tax program for affected households
 - Then calculate expanded CalEITC



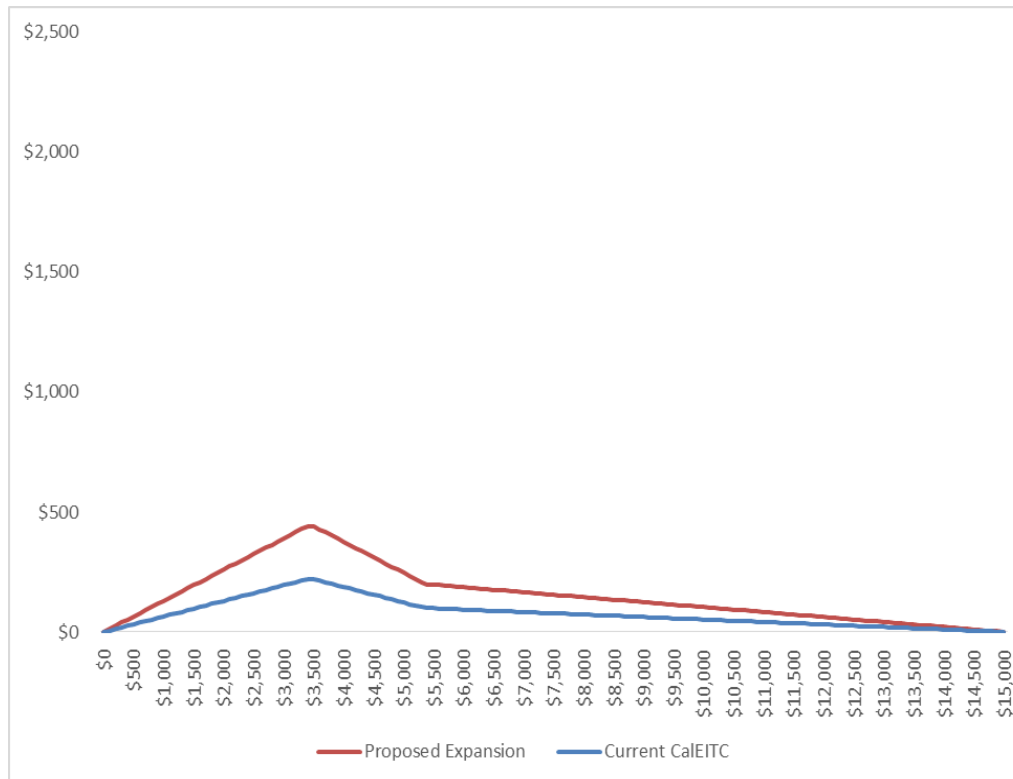
Expansion 2: Double credit and extend age range for childless filers

- Tax filers without dependent children receive substantially smaller credits than filers with child dependents for CalEITC (and federal EITC)
- CalEITC follows federal age range for childless EITC, limited to filers age 25-64
- Simulated expansion assumes current CalEITC credit for childless filers is doubled, and age range expanded to 21+
- No change to current CalEITC structure for filers with dependent children



Expansion 2: Double credit and extend age range for childless filers

Structure of existing CalEITC as of 2017 and Expansion 2 (shown for childless tax filer only, in 2017 dollars)



Incorporating dynamic employment effects

- **Expansion 2: Account for employment incentive of newly available CalEITC**
 - Debatable how and whether to account for labor supply effect of earned income tax credit for childless filers
 - Minimal change in employment observed when federal childless EITC introduced, but also apparently little EITC labor supply research with primary focus on this population
 - Credit size threshold required for labor supply effect? Consider total of state plus federal EITC?



Incorporating dynamic employment effects

- **Expansion 2: Account for employment incentive of newly available CalEITC**
 - For purpose of exercise, assume effect similar to that found for single mothers with less than college degree (Hoynes & Patel, 2015) – using reported relative increase in employment rate of 8.7% per \$1,000 EITC
 - Process: Randomly assign new employment, assign earnings corresponding to maximum CalEITC credit, re-run tax unit and income tax program for affected individuals
 - Then calculate expanded CalEITC



Preliminary results

	Baseline CalEITC	Expansion 1 (minimum wage)	Expansion 2 (childless)
COST			
Total cost (millions)	\$455.740	\$470.936	\$612.767
Relative percent increase in cost from baseline		3%	34%
Dollar increase in cost from baseline (millions)		\$15.197	\$157.027



Preliminary results

	Baseline CalEITC	Expansion 1 (minimum wage)	Expansion 2 (childless)
FILERS			
Number of tax filers receiving credit (millions)	1.929	2.897	2.518
Relative percent increase in number of recipient tax filers from baseline		50%	31%
Number increase in recipient tax filers from baseline (millions)		0.969	0.590
Filing status of recipient tax filers			
Single	48%	56%	59%
Married joint	14%	14%	12%
Head of household	38%	30%	29%
Mean credit for newly eligible filers		\$26	\$150



Preliminary results

	Baseline CalEITC	Expansion 1 (minimum wage)	Expansion 2 (childless)
BENEFICIARIES			
Number of beneficiaries (individuals in families that include a recipient tax filer) (millions)	5.383	7.363	6.398
Relative percent increase in number of beneficiaries from baseline		37%	19%
Age of beneficiaries			
Child (0-17)	27%	24%	24%
Working-age adult (18-64)	67%	70%	68%
Senior (65+)	6%	6%	8%



Discussion

- ACS microsimulation of income taxes is useful for producing estimates of state and local policy effects that are of interest to policy stakeholders and poverty researchers
- Comparison of ACS income tax models shows tax estimates are sensitive to assumptions used to construct tax units
 - IRS-Census data matching studies would be helpful to inform methods for imputing tax units
- Simulations of CalEITC expansions highlight potential and challenges of incorporating dynamic effects into simulation
 - Need for research findings reported in format that can be applied to microsimulation
 - Assumptions are often required in order to apply existing findings to simulation of novel policies



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