Analyze, visualize, and … itemize: Tax policy analysis with Tax-Cruncher

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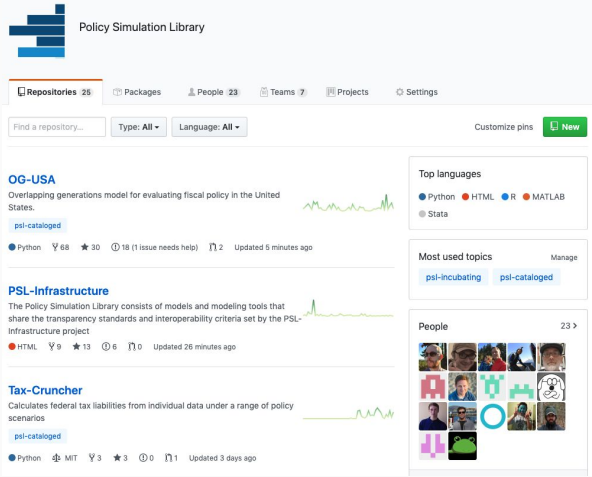
Agenda

1. Policy Simulation Library (PSL)
2. What is Tax-Cruncher?
3. Web application demo
4. Python API overview
5. Getting started

Policy Simulation Library

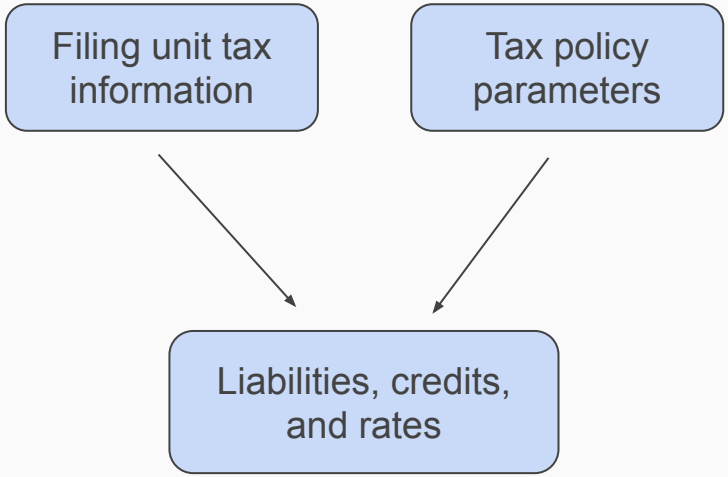
- Open source ecosystem
- Policy modeling community



Geena Kim, CBO economist, presenting HISIM2

Tax-Cruncher

- Open source software for analyzing how tax policy affects household finances
- Calculates individual income and payroll tax liabilities for any year between 2013 and 2028
- Design your own tax reform using over two hundred parametrized features of the US tax code



Tax-Cruncher Interfaces

- Web application
  - No programming knowledge necessary
  - Generate tables and interactive charts
- Python API
  - Broader capabilities
  - Greater flexibility

Web application demo

https://compute.studio/PSLmodels/Tax-Cruncher/

Python API Overview

- Analyze multiple households at a time
- Create custom output
- Compare two reforms

https://github.com/PSLmodels/Tax-Cruncher

```
In [1]: import taxcrunch.multi_cruncher as mc
        crunch = mc.Batch('../docs/example_input.csv')
        crunch.create_table()
```

Out[1]:

	ID	Individual Income Tax	Payroll Tax	Wages	AGI	UI in AGI	OASDI in AGI	Itemized Deductions	Taxable Inc	Regular Tax
0	1.0	23397.147200	21137.96192	160000.0	164500.0	0.0	0.0	0.0	146096.8	27397.1472
1	2.0	-5385.396064	7267.50000	47500.0	47800.0	0.0	0.0	0.0	23262.4	2365.9536
2	3.0	10049.408800	10710.00000	70000.0	80000.0	0.0	0.0	0.0	67731.2	10049.4088
3	4.0	7538.817600	18819.00000	123000.0	124200.0	0.0	0.0	0.0	99662.4	13538.8176
4	5.0	40659.745600	23747.96192	250000.0	251200.0	0.0	0.0	0.0	226662.4	42614.1456
5	6.0	-530.630000	1683.00000	11000.0	11000.0	0.0	0.0	0.0	0.0	0.0000
6	7.0	-3402.289388	5967.00000	39000.0	39250.0	0.0	0.0	0.0	20846.8	2193.5232

7 rows × 22 columns

2026 TCJA Extension Tax Cuts by Income and Demographics

	Single		Married			
Income	0 Kids	1 Kid	0 Kids	1 Kid	2 Kids	3 Kids
$10k	$0	$0	$0	-$125	-$75	-$75
$20k	-$167	-$167	$0	-$600	-$625	-$75
$40k	-$685	-$685	-$334	-$844	-$1,354	-$1,813
$60k	-$1,434	-$1,434	-$770	-$1,035	-$1,299	-$1,686
$100k	-$2,656	-$2,656	-$1,970	-$2,235	-$2,499	-$2,764
$200k	-$6,188	-$6,188	-$5,313	-$6,088	-$6,863	-$7,638
$500k	$374	$374	-$20,825	-$20,825	-$20,825	-$21,825

Getting Started

Open source ecosystem

- Open Source Policy Center
- Policy Simulation Library

Tax-Cruncher

- GitHub
- Compute Studio (web application)