

Marginal Taxation of Americans' Labor Supply

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Overview

We estimate current-year and lifetime marginal tax rates for individuals in the Survey of Consumer Finances, taking into account state and federal taxes and transfer programs

- ① **Lifetime** marginal tax rates
- ② **Transfer payments** (i.e negative taxes)
- ③ At **state** and federal levels

Key Findings

- ① Lifetime marginal tax rates are **higher** than current-year
- ② Marginal tax rates are **high and disperse**, especially for low-income households
- ③ Marginal tax rates exhibit significant **state-level variation**

Plan for Today

- 1 Methodology
- 2 Overview of Key Results
- 3 Discussion

Why Lifetime?

Current-year increase in labor earnings can affect current and future tax liabilities and transfer payments through:

- 1 Taxation of Consumption
- 2 Taxation of Asset Income
- 3 Asset Tests
- 4 Continuous vs Initial Eligibility Rules

Methodology

- In Survey of Consumer Finances we observe only current year income and assets
- Therefore, as a first step we need to project individuals future:
 - Labor earnings
 - Assets
 - Taxes and Transfers

Dynamic Programming Exercise - The Fiscal Analyzer (Kotlikoff, 2019)

The Fiscal Analyzer

- **The Fiscal Analyzer** is a life-cycle consumption smoothing program
 - Borrowing constraints
 - Lifespan uncertainty
 - All major federal and state tax and transfer programs
- **Inputs:**
 - Demographics
 - Economic data
 - **Assumption:** household seeks to have the same living standard per household member through time

List of TFA Inputs

The Fiscal Analyzer

- **Total expenditures of the household** (E_t) in the period t are:

$$E_t = c_t(N_t + \lambda K_t)^\gamma$$

- c_t is the *consumption* per equivalent adult
- N_t is the *number of adults* in the household
- K_t is the *number of kids*
- λ is the *weight* of children in the household (0.7)
- γ governs the “*economy of joint living*”

The Fiscal Analyzer

- In the **period** T household consumes all remaining resources:

$$E_T = R_T$$

- Express consumption as a function of net resources:

$$c_T = C(R_T)$$

Smooth c_t going backwards in a way which equalizes consumption per equivalent adult across periods subject to the borrowing constraints

[More About TFA Solution Technique](#)

The Fiscal Analyzer

For the period $t - 1$

$$c(R_{t-1}) = \begin{cases} C(R_{t-1} - E_{t-1}), & \text{if } E_{t-1} \leq A_{t-1}(1+r) + \omega_{t-1} - T_{t-1} \\ A_{t-1}(1+r) + \omega_{t-1} - T_{t-1}, & \text{otherwise} \end{cases}$$

- A – total assets
- r – rate of return
- ω – employment income
- T – net tax

The Fiscal Analyzer

Taxes	Personal Income Tax (federal and state) Corporate Income Tax (federal and state) FICA Tax (federal) Sales Taxes (state) Medicare Part B Premiums (federal) Estate and Gift Tax (federal)
Transfer Programs	Earned Income Tax Credit (federal and state) Child Tax Credit (federal) Social Security Benefits (federal) Supplemental Security Income (SSI) (federal) Supplemental Nutritional Assistance Program (SNAP) (state) Temporary Assistance for Needy Families (TANF) (state) Medicaid Medicare (federal) The Affordable Care Act (ACA) (state) Section 8 Housing Vouchers (state and county) Childcare Assistance (state and county)

Lifetime Taxation

- For each individual we have **intertemporal budget constraint**:

$$S = R - T$$

- S - expected PV of total remaining *lifetime spending*
 - R - expected PV of the remaining *lifetime resources*
 - T - expected PV of the remaining *lifetime net taxes*
- Resources (R) can be decomposed into:

$$R = W + H$$

- W - households *current net wealth*
- H - expected PV of *future labor earnings*

Lifetime Taxation

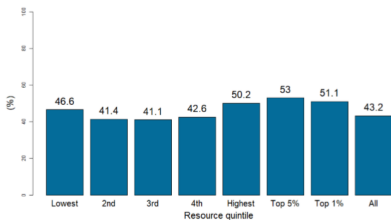
- Define **remaining lifetime marginal net tax rates** τ_L as:

$$\tau_L = \frac{\Delta T}{\Delta R}$$

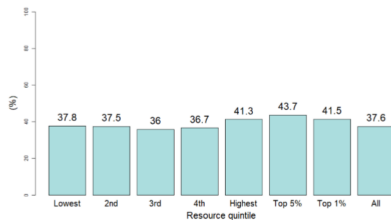
- Baseline calculation of τ_L incorporates additional *current and future* net taxes from earning an extra \$1,000
- Therefore τ_L can *differ significantly* from current-year marginal net tax rates τ_C

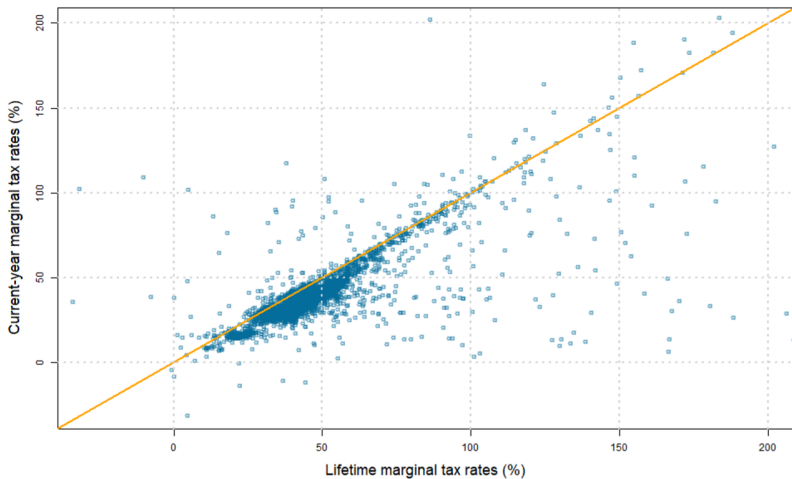
Result 1: $\tau_L > \tau_C$

Median Lifetime MTR

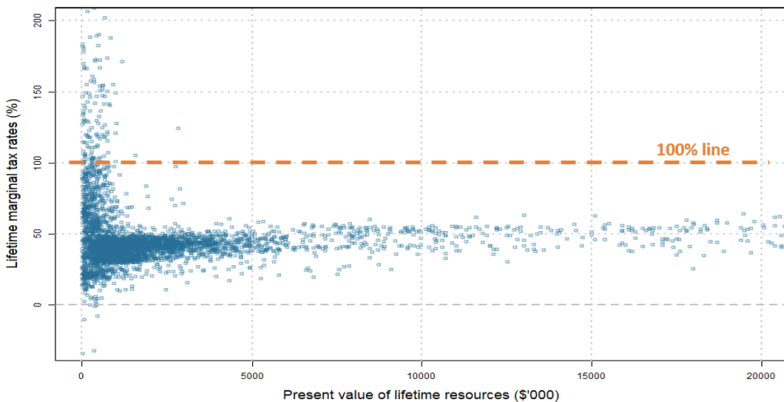


Median Current-Year MTR



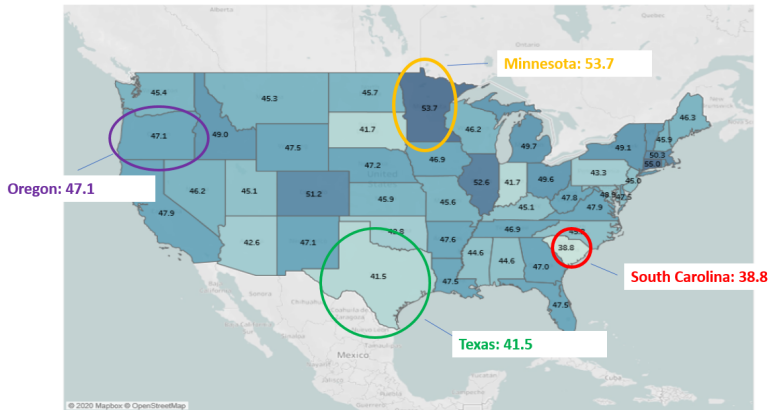
Result 1: $\tau_L > \tau_C$ 

Result 2: For low-income households τ_L are high and disperse



Result 3: τ_L exhibit significant state-level variation

Figure: Median τ_L , Age 30-39, Lowest Resource Quintile



Conclusion

- **Revised estimates of marginal tax rates**
 - Lifetime as opposed to current-year
 - Include major state and federal transfer programs
- **Stylized facts:**
 - Lifetime marginal tax rates are higher than current-year
 - Especially high for low-income people
 - Vary by state
- **Future avenues of research:**
 - 1 How people react to high marginal tax rates?
 - 2 How the system can be changed to remove these disincentives?

Appendix: TFA Inputs

Sex
Marital Status
of children
Birth dates of all household members
Max age of individual and spouse/partner
Age at which children leave household

Past Social Security covered labor earnings
Current labor earnings
Non-retirement assets
401(k) assets
Other deductible retirement assets
Roth retirement assets

Projected labor earnings
Current and future retirement asset contributions
Current and future retirement account withdrawals
Retirement income from non Social Security covered employment
Assumed inflation and rates of return on assets
Future home changes (primary and secondary, up to two)

Primary home data
--- rent
--- mortgage amounts, length, and payments
--- property taxes, fees, insurance

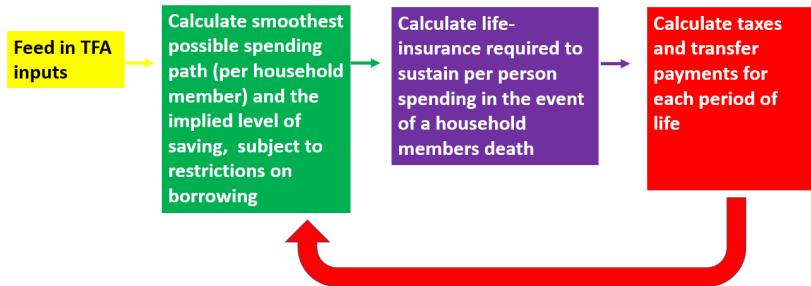
Second home and other real estate assets

Household debts (entered as special receipts)
Special receipts and their tax statuses
Special expenditures and their tax statuses

Desired bequests
Funeral expenses
Current life insurance (face and cash values)

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Appendix: Simple View of TFA's Solution Procedure

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