The Taxation of Couples

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Motivation

- Tax treatment of couples (and singles) is a recurrent theme in public debates.

- Traditionally, married couples are taxed based on the couple's joint income.
  ⇒ Same MTR for primary and secondary earners (e.g. US, France, Germany, Other Countries)

- A welfare-maximizing policy would look different:
  - Behavioral responses stronger for secondary earners, e.g. Bick and Fuchs-Schündeln (2018).
  - MTR on secondary earnings should by lower, e.g. Boskin and Sheshinski (1983).

- Large compositional changes in the United States.
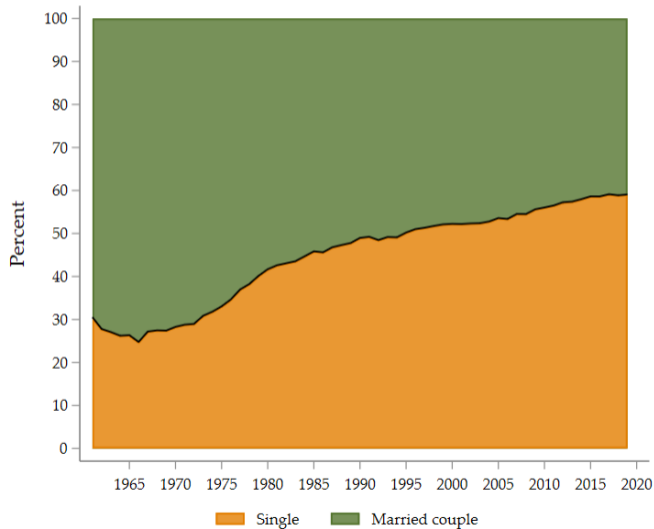
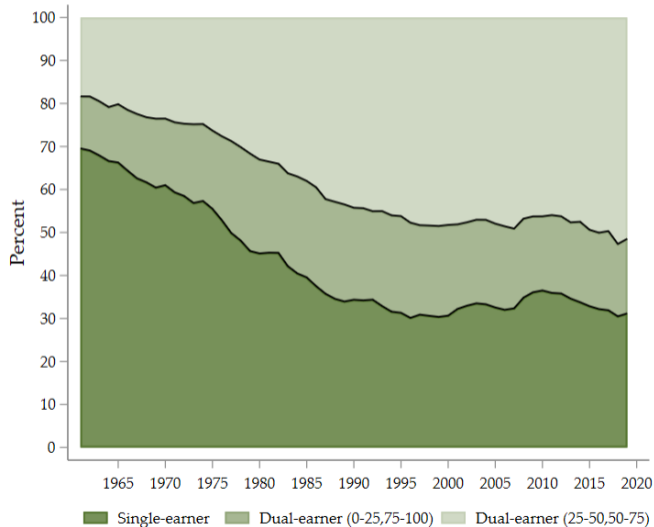**Take-Away:**

- The share of single tax units almost doubled from around 30 percent in 1961 to around 60 percent in 2019.

SOI Data

Take-Aways:

- In 1961, around 70 percent of couples had only one earner.

- There was a strong expansion of dual-earner couples between the 1960s and the 2000s.

Motivation — Open Questions

1. Can political economy explain the persistence of traditional tax treatment of couples in the US?

2. Are reforms towards individual taxation in the interest of everybody? Are they in the interest of secondary earners? Are they in the interest of "the poor"?

3. Given that the inverse-elasticities-logic did not play out, what were the driving forces of the reforms that altered the tax treatment of couples relative to singles in the US in recent decades?

This paper derives formulas for evaluation of tax reforms and applies them to US federal income tax using CPS data and NBER TAXSIM.

This Paper — Approach

- Consider a status quo tax system with income splitting for couples.

- Use perturbation method and develop formulas to identify:
    - Pareto-improving directions.
    - Majority-preferred directions.
    - Welfare-improving directions for (i) the population at large, (ii) secondary earners, (iii) welfare measure that puts high weights on low-income singles and couples.

- Distinguish
    - **Reforms *in* the system:** MTR stay the same for primary and secondary earners.

        $\rightarrow$ tailored to past reforms of the US federal income tax.

    - **Reforms *of* the system:** MTR change for primary and/or secondary earners.

        $\rightarrow$ tailored to hypothetical reforms towards individual taxation.

Literature

This Paper — Main Results

- In reforms *in* the system, breaking the relationship between single and couple tax schedules may be needed for Pareto improvements (e.g. TRA69).

- Reforms *of* the system can be Pareto-improving when reforms *in* the system are not.
  → "Rich" secondary earners get a marginal tax cut (e.g. in 2019).

- Analyze dynamics of political support for revenue-neutral reforms toward individual taxation:
  → Today majority support for reform towards individual taxation.

- Analyze welfare implications for revenue-neutral reforms of the system:
  → Trade-off between Rawlsian and Feminist welfare.

Theory — Conceptual Framework

- Economy consists of singles and married couples with shares ν_s and $\nu_m = 1 - \nu_s$.
- Singles:

$$c_s = b_s + y_s - T_s(y_s)$$
$$u_s : (c_s, y_s, \theta_s) \mapsto u_s(c_s, y_s, \theta_s)$$

- Married Couple:

$$y_m = y_1 + y_2, \qquad c_m = b_m + y_m - T_m(y_m)$$
$$u_{mi}(\alpha_i(c_m, y_1, y_2, \cdot), y_i, \theta_{mi}), \ i = 1, 2$$
$$\alpha_i : (c_m, y_1, y_2, \cdot) \mapsto \alpha_i(c_m, y_1, y_2, \cdot), \ i = 1, 2$$

$\Rightarrow$ Couples engage in Nash bargaining, i.e. they maximize

$$\gamma_1 u_{m1}(\alpha_1(c_m, y_1, y_2, \cdot), y_1, \theta_{m1}) + \gamma_2 u_{m2}(\alpha_2(c_m, y_1, y_2, \cdot), y_2, \theta_{m2})$$

$\Rightarrow$ This formulation is consistent with

- Cooperative bargaining over work, consumption, and other margins (e.g. family duties).
- Household consumption being a public good or individual consumption being a private good.

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- General small perturbation of the tax schedule of size τ in direction h. (Details)
- Revenue-neutral tax reforms by lump-sum adjustment (can vary by household type).

By **envelope theorem** (Milgrom and Segal, 2002), individuals only affected by direct policy effect, i.e.

- Singles:

$$\frac{\partial}{\partial \tau} V_s\left(0, h, \rho_s, \theta_s\right) = u_{s1}^0\left(\theta_s\right)\left[\rho_s R_1^0(h) - h\left(y_s\right)\right]$$

- Spouse $i = 1, 2$ in Couple:

$$\frac{\partial}{\partial \tau} V_{mi}\left(0, h, \rho_m, \theta_m, \gamma_m\right) = u_{mi1}^0\left(\theta_m, \gamma_m\right) \alpha_{i1}^0\left(\theta_m, \gamma_m\right)\left[\rho_m R_1^0(h) - h\left(y_m\right)\right]$$

$\Rightarrow$ Tax unit benefits if change in tax revenue outweighs the change in the tax burden.

$\Rightarrow$ When $\alpha_{i1}^0\left(\theta_m, \gamma_m\right) > 0$, the preferences of spouses over tax reforms are aligned.

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Theory — Reforms *in* the System

- **Defining Feature:** y_m is the tax base for couples, both before and after the reform. `Details`

- A tax reform *in* the system replaces T_0 by new tax functions (T_{s1}, T_{m1}) so that

$$T_{s1}(y_s) = T_{s0}(y_s) + \tau_s \, h_s(y_s) \,,$$

and

$$T_{m1}(y_m) = T_{m0}(y_m) + \tau_m \, h_m(y_m) \,.$$

- **Pareto-Improvement Possibilities:** revenue function $\mathcal{R}_m : y_m \mapsto \mathcal{R}_m(y_m)$ describes revenue from small increase of the MTR for joint earnings in a small neighborhood of y_m (Bierbrauer, Boyer, and Hansen, 2023):

  - $\mathcal{R}_m$ below 0 $\Leftrightarrow$ Inefficiently high MTR.
  - $\mathcal{R}_m$ above 1 $\Leftrightarrow$ Inefficiently low MTR.
  - $\mathcal{R}_m$ increasing $\Leftrightarrow$ Inefficient structure of MTRs.

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- **Defining Feature:** start from a status quo schedule where $y_m = y_1 + y_2$ is the tax base, but consider reform direction that involves separate changes in MTR for primary and secondary earners.

- **Pareto-Improvement Possibilities:** revenue function $\mathcal{R}_2 : y_2 \mapsto \mathcal{R}_2(y_2)$, giving the extra revenue from a small increase of the MTR for secondary earners in a small neighborhood of y_2:

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Corollary: Inefficiency of Joint Taxation

- Intersecting the conditions with the evaluations of Reforms *in* the System:

  - Suppose that $\mathcal{R}_m$ satisfies efficiency $\Rightarrow$ No Pareto-improvement possibility *in* the system.
  - Suppose that $\mathcal{R}_2 < 0 \Rightarrow$ Pareto-improvement possible through reform *of* the system.

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- **Defining Feature:** Start from a status quo schedule where $y_m = y_1 + y_2$ is the tax base and consider a reform direction so that
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Proposition: Political Feasibility

A couple benefits from a reform towards individual taxation under

$$y_1^0 \quad < \quad \frac{\int_{\mathbb{R}_+} \mathcal{R}^1(y_1) dy_1}{\int_{\mathbb{R}_+} \mathcal{R}^2(y_2) dy_2} \; y_2^0 .$$

Proposition: Welfare

$$\mathbf{E}_{(\theta_m, \gamma_m)} \left[\mathbf{g}_m (\gamma_m, \theta_m) y_1^0 (\gamma_m, \theta_m) \right]$$

$$< \left(\frac{\int_{\mathbb{R}_+} \mathcal{R}^1(y_1) \, dy_1}{\int_{R_+} \mathcal{R}^2(y_2) \, dy_2} \right) \mathbf{E}_{(\theta_m, \gamma_m)} \left[\mathbf{g}_m (\gamma_m, \theta_m) y_2^0 (\gamma_m, \theta_m) \right] .$$

Theory — Reforms *of* the System, Towards Individual Taxation

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From Theory to Empirics

- The formulas are very general in terms of revenue functions.
- Sufficient statistics from a model under (i) quasi-linear preferences, (ii) household consumption as a public good, and (iii) intensive (+ extensive) margin responses.
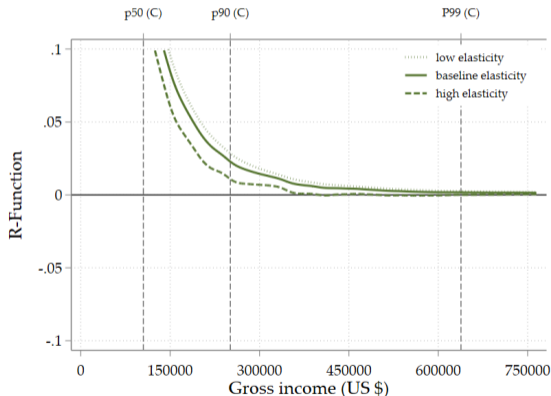
Example, Revenue Function for Couples:

$$\frac{1}{\nu_m} \mathcal{R}_m (y_m) = -\frac{T'_{m0} (y_m)}{1 - T'_{m0} (y_m)} y_m f^y_m (y_m) \overline{\mathcal{E}}_m (y_m) + 1 - F^y_m (y_m)$$

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- $e(\theta_m, \gamma_m)$ is the elasticity of couples' joint earnings with respect to the net of tax rate.
- Sufficient statistics thus capture the interdependence between primary and secondary earnings.
- Formulas are brought to the data by combining CPS data with NBER TAXSIM.

Extensive Margin   Data and Behavioral Responses   Past Reforms *in* the System

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Extensive Margin   Data and Behavioral Responses   Past Reforms *in* the System

R-Function of Couples, 2019

Source: own calculations based on CPS and NBER TAXSIM.

Take-Away

- Today, no room for Pareto-improvements through reforms *in the system* among couples.

- Behavioral response is a combination of primary and secondary earner elasticities and income shares. Average Elasticities

⇒ Can we realize Pareto-improvements with a reform *of* the system?

$\mathcal{R}$-Function of Couples, 2019

Source: own calculations based on CPS and NBER TAXSIM.

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$\mathcal{R}$-Function, Primary and Secondary Earners, 2019
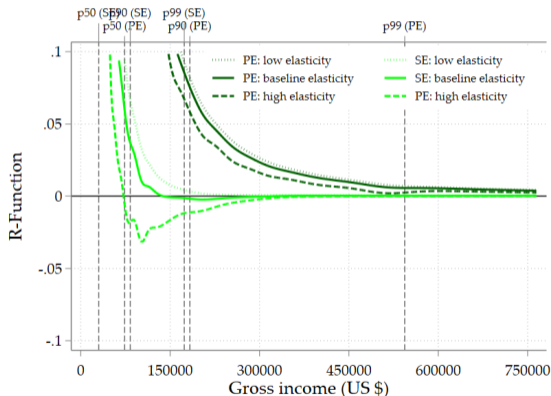
Take-Aways

- Today, reforms *of* the system could be efficiency enhancing.

- Decreasing marginal tax rates of secondary earners with high incomes yields Pareto-improvements.

Inefficiencies in the Past

Source: own calculations based on CPS and NBER TAXSIM.

Political Support, 1961
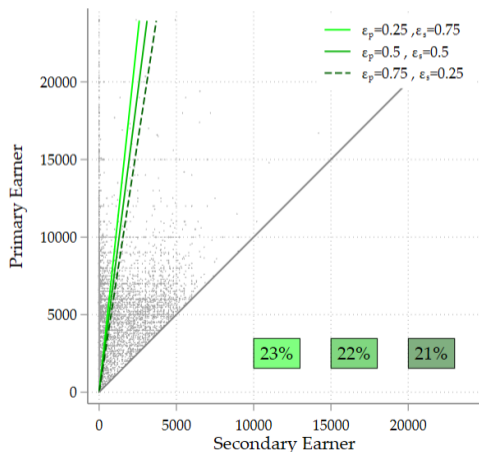
Take-Aways

- All winners (losers) from reform lie below (above) the green line.

- In 1961, reform towards individual taxation was not politically feasible.

- Larger elasticity differential between secondary and primary earners increases political support.
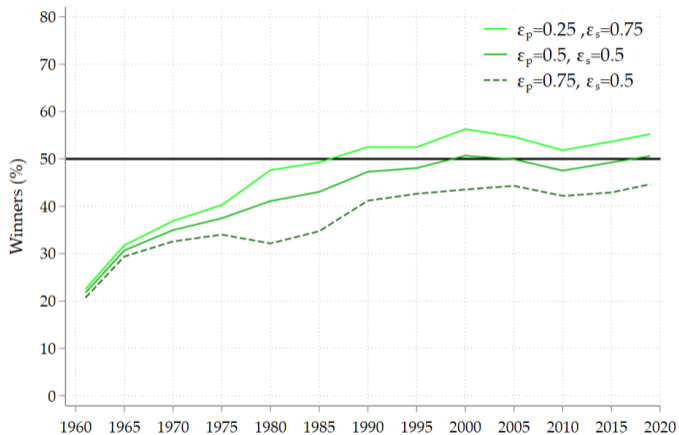
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Welfare Analysis, 2019
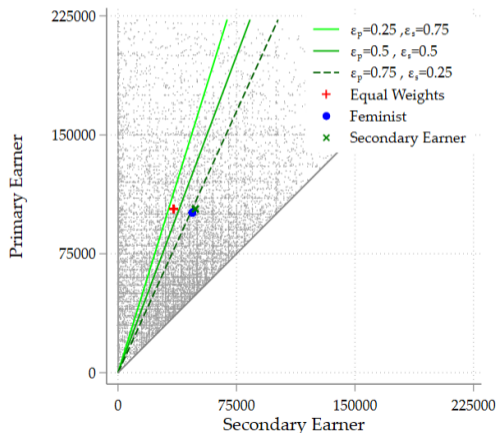
Take-Aways

- Under equal welfare weights, the relative size of the elasticities determines welfare implications.

- A social planner with feminist welfare weightsk supports the reform.

- Implications of secondary earner welfare weights very similar to feminist welfare weights.

Welfare Weights

Welfare Analysis, 2019
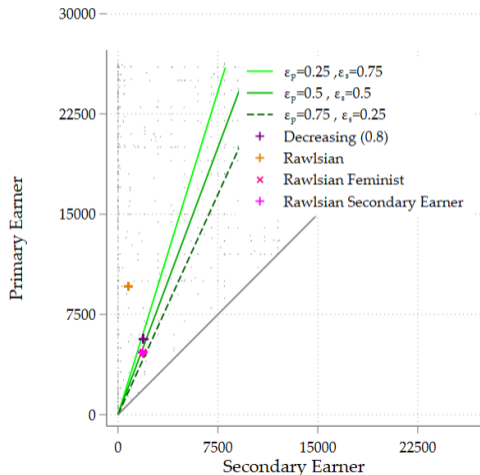
Take-Aways

- Under Rawlsian weights or decreasing welfare weights, reform is not welfare-improving, because many single-earner couples among low incomes. `Figure`

- There is a trade-off between competing policy objectives.

  `Solving the Conflict?`

Concluding Remarks

- Theory:
  - Conditions for Pareto-improving, politically feasible and welfare-improving reforms.
  - Different reform types: Reforms *in* the System, Reforms *of* the System.

- Empirics:
  - Analysis of past reforms and hypothetical reforms using CPS data and NBER TAXSIM.

  - **Past Reforms *in* the System:** breaking relationship between singles and couples can help to realize Pareto-improvements.

  - **Reforms *of* the System:** joint taxation inefficient for some income levels. General reform towards individual taxation recently reached majority support, conflict between Rawlsian and Feminist notions of welfare.

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Tax Treatment of Couples around the World

Tax Unit	Countries
Household	Belgium, France, Iceland, Indonesia, Switzerland, United States
Optional	Brazil, Germany, Ireland, Luxembourg, Malaysia, Netherlands, Portugal, Spain, Ukraine
Individual	Argentina, Australia, Austria, Canada, Costa Rica, Croatia, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Israel, Italy, Japan, Kenya, Latvia, Mexico, Montenegro, New Zealand, Norway, Peru, Romania, San Marino, Slovakia, Slovenia, South Africa, South Korea, Sweden , Tunisia, Turkey, United Kingdom

Source: OECD (2022), PWC Tax Summaries (2022)

Back

Literature

1 **Optimal Taxation of Couples:** Ales and Sleet (2022); Alves et al. (2021); Boskin and Sheshinski (1983); Brett (2007); Cremer et al. (2012); Gayle and Shephard (2019); Golosov and Krasikov (2023); Immervoll et al. (2011); Kleven et al. (2009); Malkov (2021); Schroyen (2003).

⇒ Complementary, go beyond welfare-maximization (Pareto-efficiency, political feasibility).

⇒ Positive theory of multi-dimensional screening, richer type set possible.

2 **Literature on Behavioral Responses and Marriage Penalties:** Alm et al. (1999); Alm and Whittington (1996); Brozovsky and Cataldo (1994); Eissa and Hoynes (2004); Gustafsson (1992); LaLumia (2008).

⇒ Informs parameter choices in sufficient statistics.

3 **Perturbation Method:** Bierbrauer et al. (2022),Bierbrauer et al. (2021); Golosov et al. (2014); Jacquet and Lehmann (2021); Lorenz and Sachs (2016); Piketty (1997); Saez (2001); Spiritus et al. (2022).

⇒ Here, used to identify reform options starting from the status quo.

4 **Political Economy of Non-Linear Taxation:** Acemoglu et al. (2008); Bierbrauer et al. (2021); Bierbrauer and Boyer (2016); Brett and Weymark (2017); Farhi et al. (2012); Scheuer and Wolitzky (2016).
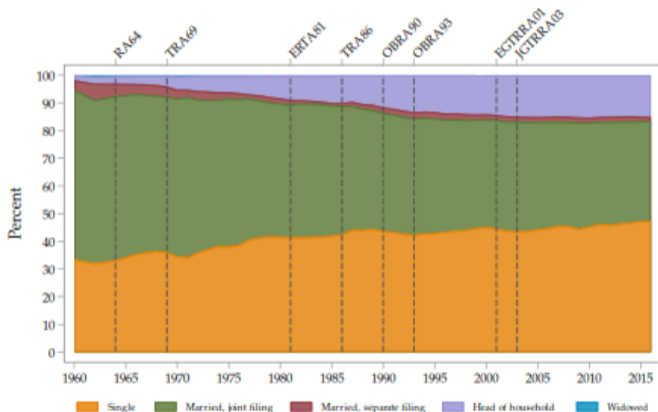
Back

Take-Away:

- Separate filing among married couples not relevant across the whole period of observation.

- Singles can be differentiated into Single and Head of Household filing status.

Back

Magnitude of Marriage Bonuses

Source: Own calculations based on CPS and NBER TAXSIM.

Back

R-Function, Intensive and Extensive Margin
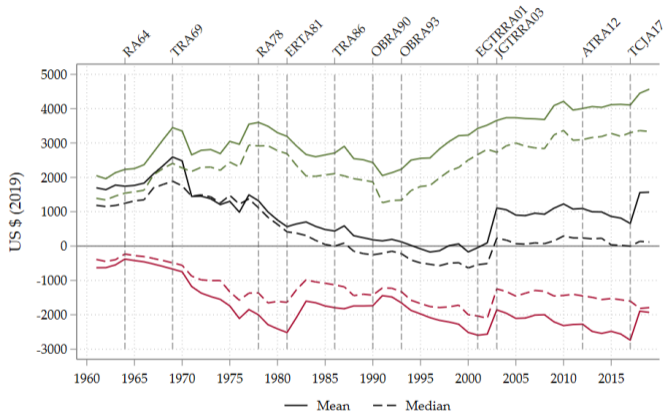
$$\frac{1}{\nu_m}\mathcal{R}_m(y) = \mathcal{X}_{\text{sec}}(y_m) + \mathcal{I}_{\text{sec}}(y) + \mathcal{X}_{\text{dec}}(y_m) + \mathcal{I}_{\text{dec}}(y)$$

$$\mathcal{I}_{sec}(y) = -\frac{T'_{m0}(y)}{1 - T'_{m0}(y)} y\, m_{\text{sec}}(y)\overline{\mathcal{E}}_{\text{sec}}(y) + M^+_{\text{sec}}(y)$$

$$\mathcal{X}_{sec}(y) = -\int_y^\infty \frac{T_{m0}(y')}{y' - T_{m0}(y')}\bar{\bar{\pi}}_{sec}(y')\, m^y_{sec}(y')\, dy'$$

$$\mathcal{I}_{\text{dec}}(y) = -\frac{T'_{m0}(y)}{1 - T'_{m0}(y)} y m_{dec}(y)\overline{\mathcal{E}}_{dec}(y) + M^+_{dec}(y)$$

$$\mathcal{X}_{dec}(y) = -\int_y^\infty \frac{T_{m0}(y')}{y' - T_{m0}(u')}\bar{\bar{\pi}}_{dec}(y')\, m^y_{dec}(y')\, dy$$

- π_{sec} : captures a *decrease* in SECs that stop working and an *increase* in SECs coming from DECs whose secondary earner stops working.

- π_{dec} : captures *decrease* in DECs whose spouses both stop working and a *decrease* in DECs whose secondary earner stops working.

Back

Tax Reforms — Details

$$T_{s1}(y_s) = T_{s0} + \tau_s h_s(y_s) \,, \quad T_{m1}(y_m) = T_{m0} + \tau_m h_m(y_m)$$

Example: One-bracket reform that increases (decreases) MTR by τ for $y' \in [y, y + \ell]$.

$$\tau_s h_s\left(y'\right) = \left\{ \begin{array}{lll} 0, & \text{for} & y' \leq y \\ \tau_s\left(y' - y\right), & \text{for} & y' \in [y, y + \ell] \\ \tau_s \ell, & \text{for} & y' \geq y + \ell \end{array} \right.$$

$\Rightarrow$ Leads to changes in tax revenue, i.e.

$$R(\tau, h) = R_s\left(\tau_s, h_s\right) + R_m\left(\tau_m, h_m\right)$$

$\Rightarrow$ Lump-sum adjustment of revenue change, i.e.
- Singles receive $\rho_s R(\tau, h)$
- Couples receive $\rho_m R(\tau, h)$

The relationship between the tax treatment of singles (T_s) and couples (T_c) varies across countries.

Examples:

- Individual Taxation: $T_m(y_m) = T_s(y_1) + T_s(y_2)$ — Sweden.
- Income Splitting: $T_m(y_m) = 2T_s\left(\frac{y_m}{2}\right)$ — Germany.
- Separate Tax Schedules $T_s(y_s)$ and $T_m(y_m)$ — United States.

$\Rightarrow$ We introduce a flexible splitting function $\sigma(y_m)$ to describe the relationship between T_s and T_m:

$$\sigma(y_m) \, T_s\left(\frac{y_m}{\sigma(y_m)}\right) = T_m(y_m)$$

$\Rightarrow$ Splitting function closely related to marriage penalties and bonuses.

Tax Reform with Constant σ

The Relationship Tax Schedules — Marriage Bonuses / Penalties

- Marriage bonus if $T_m(y_m) < T_s(y_1) + T_s(y_2)$, $y_m = y_1 + y_2$

- Couple with joint income y_m benefits form a marriage bonus if

$$\sigma(y_m)\, T_s\left(\frac{y_m}{\sigma(y_m)}\right) < T_s(y_1) + T_s(y_2)$$

$\Rightarrow$ With increasing average tax rates and $y_1 > y_2$:

- $\sigma(y_m) \geq 2$: marriage bonus for all possible triplets (y_m, y_1, y_2).
- $\sigma(y_m) \leq 1$: marriage penalty for all possible triplets (y_m, y_1, y_2).
- $\sigma(y_m) \in (1, 2)$: both marriage penalties and bonuses possible

Tax Treatment of Couples and Singles — Empirical Application
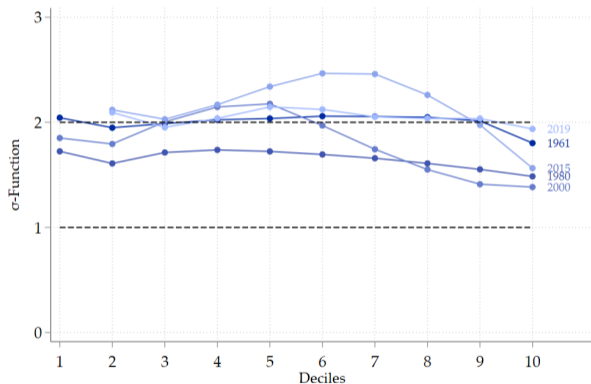
Source: Own calculations based on CPS and NBER TAXSIM.

Take-Aways:

- The splitting function varies in terms of its level.

- The splitting function varies in terms of its income gradient.

⇒ Horizontal equity concerns embedded in tax system vary over time and across the income distribution.

Computation of Splitting Function

Marriage Bonuses and Penalties

Computation of Splitting Function — Illustration
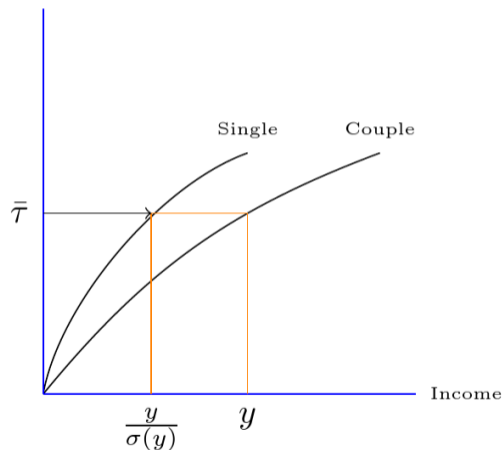
Computation Steps:

$$\sigma\left(y_m\right) T_s\left(\frac{y_m}{\sigma\left(y_m\right)}\right) = T_m\left(y_m\right)$$

$\Rightarrow$ Reformulation in terms of average tax rates.

$$\bar{\tau}_m\left(y_m\right) = \bar{\tau}_s\left(\frac{y_m}{\sigma\left(y_m\right)}\right)$$

$\Rightarrow$ Solve numerically for $\sigma(y_m)$.

Back

Tax Treatment of Couples and Singles — Marriage Bonuses and Penalties

Source: Own calculations based on CPS and NBER TAXSIM.

Back
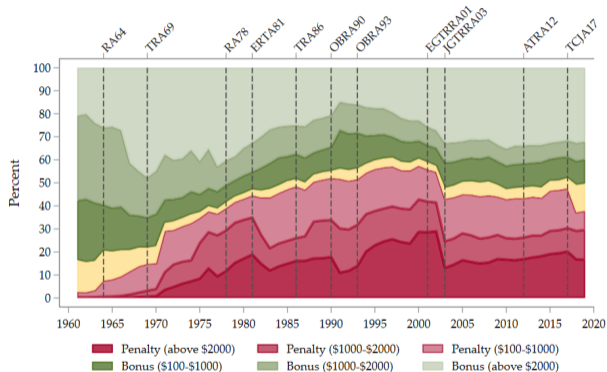
Take-Aways:

Over time, more couples experienced a marriage penalty. This is related to:

- Changes in the tax unit type distribution.

- Changes in the tax treatment of couples and singles.

Magnitude σ-Function

Current Population Survey (ASEC): provides rich survey-based information about household composition, marital status, earnings (components) of household members.

$\Rightarrow$ Estimation of income distributions of singles, couples, primary and secondary earners.

NBER TAXSIM: provides information on the federal income tax in different years.

$\Rightarrow$ Tax liabilities, marginal tax rates, average tax rates for every tax unit in our data.

Behavioral Responses:

	Single	Couples	
		Prim. Earner	Sec. Earner
Low Elasticity Scenario	0.25	0.15	0.35
Baseline Elasticity Scenario	0.5	0.25	0.75
High Elasticity Scenario	1	0.5	1.5

Back

- In the manuscript, we look at 11 reforms since the 1960s.

- US interesting because of changes in the relationship between couples and singles.

Tax Year	Difference
1913-1948	Income splitting in community law states, individual taxation in common law states
1949-1970	Income splitting
1971-1986	Difference in tax brackets and differences in marginal tax rates
1987-2020	Only difference in tax brackets, same marginal tax rates

Wordclouds

- Today: illustrate analysis for TRA69.

Figure: Statutory MTR, Pre- vs. Post Reform
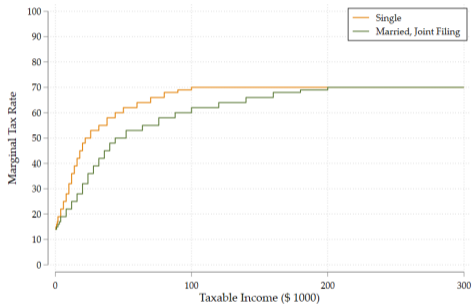
(a) 1968
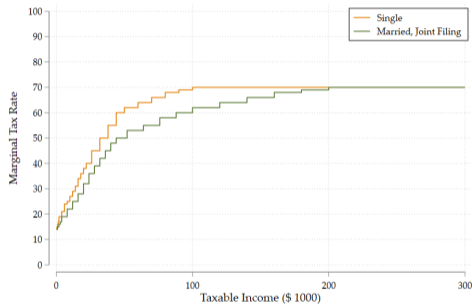
(b) 1971

⇒ Can the differential reduction in taxes justified based on efficiency grounds? Change in Tax Payments

$\mathcal{R}$-Function, 1968
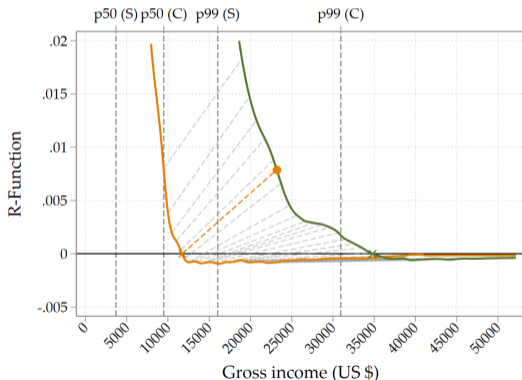
Source: own calculations based on CPS and NBER TAXSIM.

Take-Aways:

- Under baseline elasticities, tax cuts for singles above $12,000 self-financing.

- Cutting tax rates for singles at $12,000 was self-financing while the corresponding cut for couples was not.

Methodological Details   Pareto Bounds

Back

Reforms *in* the System — Details

① One-bracket tax reforms of singles and/or couples schedule.

$$\tau_s h_s \left(y' \right) = \begin{cases} 0, & \text{for} \quad y' \leq y \\ \tau_s \left(y' - y \right), & \text{for} \quad y' \in [y, y + \ell] \\ \tau_s \ell, & \text{for} \quad y' \geq y + \ell \end{cases}$$

② One-bracket tax reforms with fixed $\sigma(y_m) \Rightarrow$ preserving horizontal equity. (Details)

$$\begin{aligned} \tau_m h_m \left(y_m \right) &= T_{m1} \left(y_m \right) - T_{m0} \left(y_m \right) \\ &= \sigma \left(y_m \right) \left(T_{s1} \left(\frac{y_m}{\sigma \left(y_m \right)} \right) - T_{s0} \left(\frac{y_m}{\sigma \left(y_m \right)} \right) \right) \\ &= \sigma \left(y_m \right) \tau_s h_s \left(\frac{y_m}{\sigma \left(y_m \right)} \right) \end{aligned}$$

$\Rightarrow$ Small reforms ($\ell \to 0$, $\tau \to 0$) lead to marginal revenue change of $\mathcal{R}_s(y)$, $\mathcal{R}_m(y)$, and $\mathcal{R}_\sigma(y)$.

(Back) (Back (Empirics))
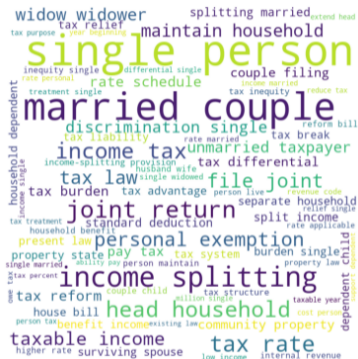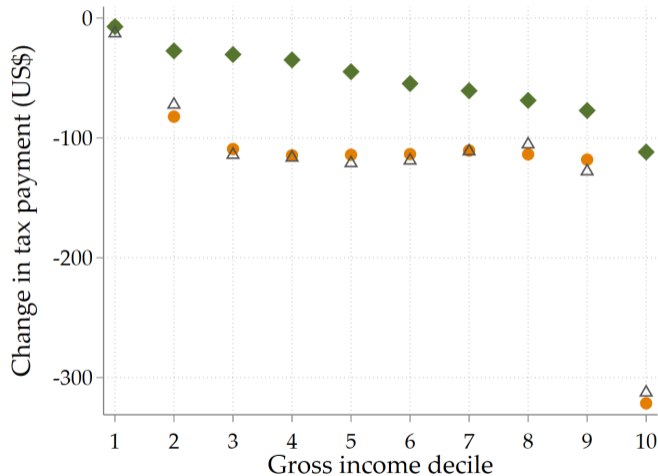
Take-Aways:

- Larger per-capita reduction of taxes for singles than for couples.
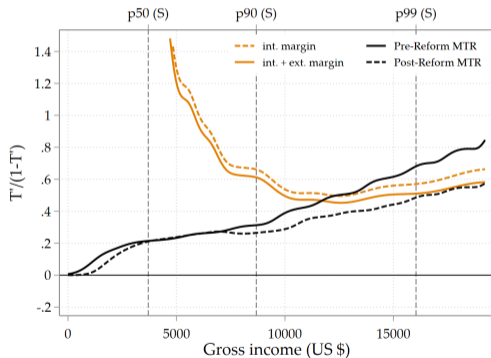- This implies higher marriage penalties.

Source: own calculations based on CPS and NBER TAXSIM.

Back
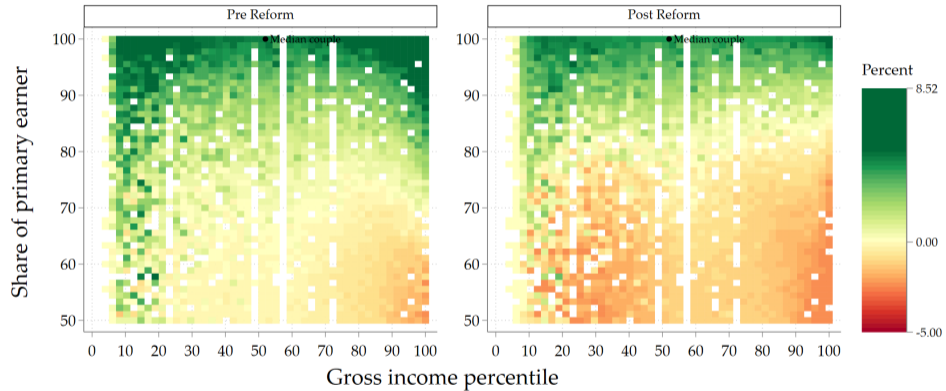
Source: own calculations based on CPS and NBER TAXSIM.
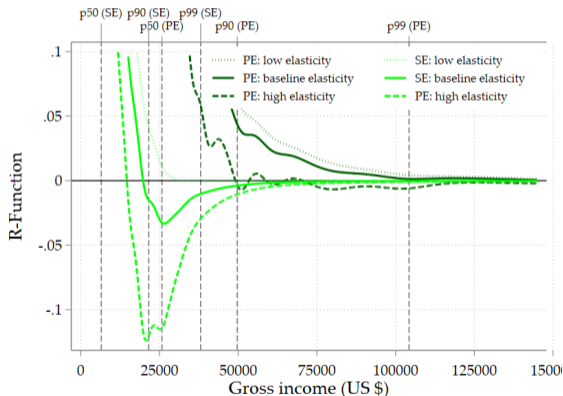
Upper Pareto Bound, Pre-Reform

Take-Away

- Under baseline assumptions about behavioral responses to taxation, tax rates for singles were above the Pareto-Bound.

  Back

Source: own calculations based on CPS and NBER TAXSIM.

$\mathcal{R}$-Function, Primary and Secondary Earners, 1985
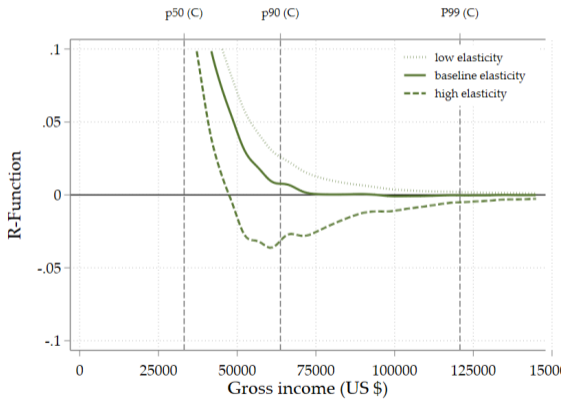

Source: own calculations based on CPS and NBER TAXSIM.

Take-Away

- In 1985, decreasing MTRs of secondary earners would have been Pareto-improving.

$\Rightarrow$ Was it necessary to abandon joint taxation to realize efficiency gains?

$\mathcal{R}$-Function of Couples, 1985

Take-Aways

- Policy makers could cure inefficiency with a reform *in* the system preserving joint taxation.

- Behavioral effect depends on the combination of the primary and secondary earner elasticities and income shares. Average Elasticities

  Back to Today

Source: own calculations based on CPS and NBER TAXSIM.

- Reform decreases (increases) MTR of secondary (primary) earners at all income levels.

$$T_{m1}(y_1, y_2) = T_{m0}(y_1 + y_2) + \tau^j \, h^j(y_1, y_2),$$

for

$$
\begin{aligned}
h^j(y_1, y_2) &= \tau_1 \, h_1(y_1) + \tau_2 \, h_2(y_2), \\
&= \tau_1 \, y_1 + \tau_2 \, y_2.
\end{aligned}
$$

$$
h_1(y_1) = \begin{cases} 0, & \text{if} \quad y_1 < \hat{y}_1 \\ y_1 - \hat{y}_1, & \text{if} \quad y_1 \in \left[\hat{y}_1, \hat{y}_1 + \tilde{\ell}_1\right] \\ \tilde{\ell}_1, & \text{if} \quad y_1 \geq \hat{y}_1 + \tilde{\ell}_1 \end{cases}
\qquad
h_2(y_2) = \begin{cases} 0, & \text{if} \quad y_2 < \hat{y}_2 \\ y_2 - \hat{y}_2, & \text{if} \quad y_2 \in \left[\hat{y}_2, \hat{y}_2 + \tilde{\ell}_2\right] \\ \tilde{\ell}_2, & \text{if} \quad y_2 \geq \hat{y}_2 + \tilde{\ell}_2 \end{cases}
$$

- Reform is revenue neutral, i.e. $\tau_1 R_{\tau_1}(0, h_1) + \tau_2 R_{\tau_2}(0, h_2) = 0$

Reform towards Individual Taxation — Details

The Gateaux differential of tax revenue in direction h^j is zero if

$$\frac{\tau^1}{\tau^2} = -\frac{\int_{Y_2 \in B_2} \mathcal{R}^2(y_2)\, dy_2}{\int_{y_1 \in B_1} \mathcal{R}^1(y_1)\, dy_1}$$

Couples are reform beneficiary if

$$\tau_1 h_1(y_1^0) + \tau_2 h_2(y_2^0) \quad = \quad \tau_1\, y_1^0 + \tau_2\, y_2^0 \quad < \quad 0\,.$$

With revenue neutrality this becomes

$$y_1^0 \quad < \quad \frac{\int_{\mathbb{R}_+} \mathcal{R}^1(y_1) dy_1}{\int_{\mathbb{R}_+} \mathcal{R}^2(y_2) dy_2}\; y_2^0\,.$$

Reform towards Individual Taxation — Details

Welfare weights for couples:

$$\mathbf{g}_m(\gamma_m, \theta_m) = g_1(\theta_m, \gamma_m) u_{1c}^0(\theta_m, \gamma_m) \alpha_{1c}^0(\theta_m, \gamma_m)$$
$$+ g_2(\theta_m, \gamma_m) u_{2c}^0(\theta_m, \gamma_m) \alpha_{2c}^0(\theta_m, \gamma_m) .$$

In the example, simply $\mathbf{g}_m(\gamma_m, \theta_m) = g_1(\theta_m, \gamma_m) + g_2(\theta_m, \gamma_m)$.

The Gateaux differential of an additive social welfare function in direction h^j is positive if

$$\mathbf{E}_{(\theta_m, \gamma_m)} \left[\mathbf{g}_m(\gamma_m, \theta_m) \, y_1^0(\gamma_m, \theta_m) \right]$$

$$< \left(\frac{\int_{\mathbb{R}_+} \mathcal{R}^1(y_1) dy_1}{\int_{\mathbb{R}_+} \mathcal{R}^2(y_2) dy_2} \right) \mathbf{E}_{(\theta_m, \gamma_m)} \left[\mathbf{g}_m(\gamma_m, \theta_m) \, y_2^0(\gamma_m, \theta_m) \right] .$$

Back

Figure: Welfare Weights, Reform of the System

Type of Welfare Weight	Specification
(1) Equal (Feminist)	$g_m(y, y_1, y_2) = 1$
(2) Decreasing	$\mathbf{g}_m(y, y_1, y_2) = (y_1 + y_2)^{-a}$
(3) Rawlsian	$g_m(y, y_1, y_2) = \begin{cases} 1, & \text{for } y \leq \text{P} \\ 0, & \text{for } y \geq \text{P} \end{cases}$
(4) Affirmative Action Secondary Earner	$g_m(y, y_1, y_2) = \frac{y_2}{y_1 + y_2}$
(5) Affirmative Action Feminist	$g_m(y, y_{man}, y_{woman}) = \frac{y_{woman}}{y_{man} + y_{woman}}$
(6) Rawlsian Affirmative Action Feminist	$g_m(y, y_{man}, y_{woman}) = \begin{cases} \frac{y_{woman}}{y_{man} + y_{woman}}, & \text{for } y \leq \text{P} \\ 0, & \text{for } y \geq \text{P} \end{cases}$

Note: Table shows different specifications for the exogenous welfare weights to evaluate class 2 reforms. All weights are normalized to mass 1. P refers to specific percentiles of the couple income distribution.

Back to Empirics

Primary Earner

$$\mathcal{R}_1\left(y_1\right) = -y_1 f_1^y\left(y_1\right)\mathcal{E}_1\left(y_1\right) + 1 - F_1^y\left(y_1\right)$$

$$\mathcal{E}_1\left(y_1\right) = \mathbf{E}_{(\theta_m, \gamma_m)}\left[\frac{T_m'\left(y_m^0\left(\theta_m, \gamma_m\right)\right)}{1 - T_m^\gamma\left(y_m^0\left(\theta_m, \gamma_m\right)\right)}e_1\left(\theta_m, \gamma_m\right) \mid y_1^0\left(\theta_m, \gamma_m\right) = y_1\right]$$

- $e_1\left(\theta_m, \gamma_m\right)$: elasticity of the couple's joint income with respect to the MTR of the primary earner.
- MTR now enters the expectation operator, because the consequences of the behavioral reaction of the primary earner depend on the couples' joint income.

Back

Political Support, 2019
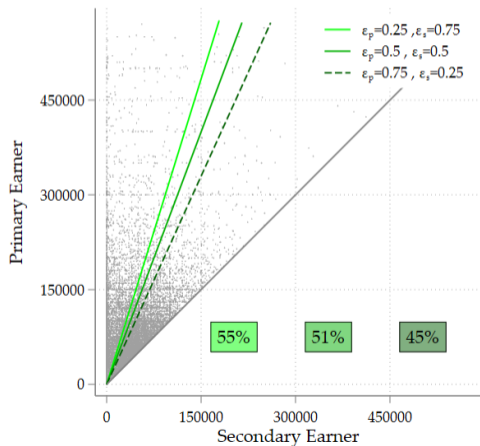
Take-Away

- In 2019, reform towards individual taxation has (slight) majority support.

Back
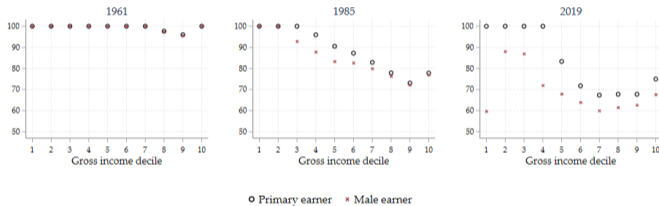
Welfare Analysis, 2019
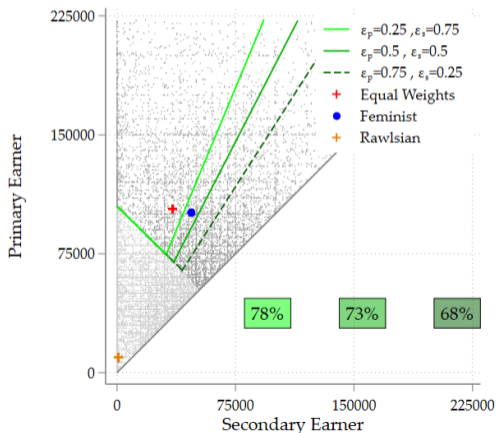

- Can we please the feminist and rawlsian policy maker?

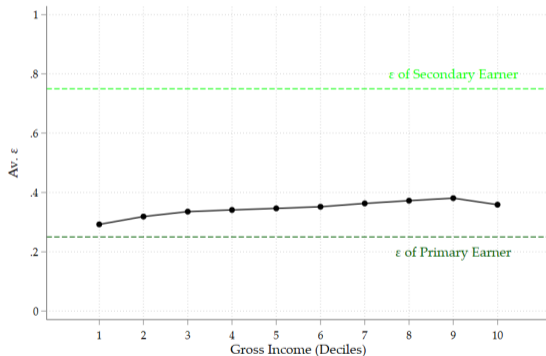⇒ Limit MTR increase for primary earners to rich couples only!

Take-Aways

- Some become winners (below p50).

- Some become loser (more revenue needed from rich primary earners).

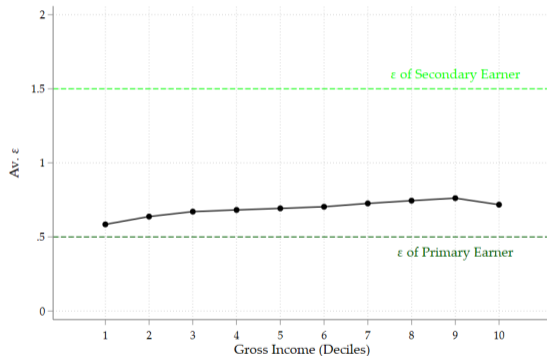- Rawlsian and Feminist welfare objective would support this reform.

Back

Average Elasticity (1985)

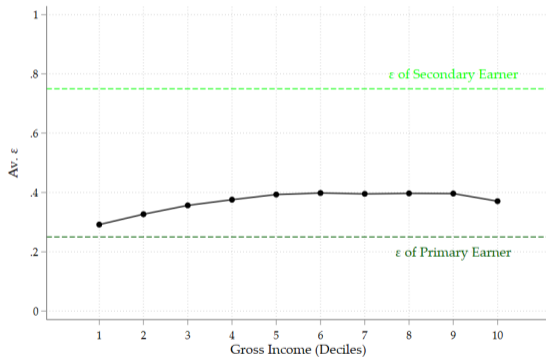Average Elasticity, $\epsilon_P = 0.25, \epsilon_S = 0.75$
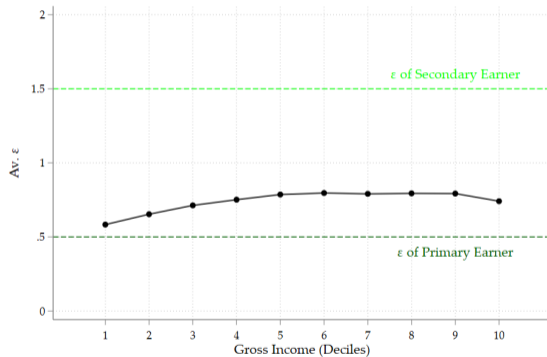
Average Elasticity, $\epsilon_P = 0.5, \epsilon_S = 1.5$

Source: Own calculations based on CPS and NBER TAXSIM.

Back

Average Elasticity (2019)

Average Elasticity, $\epsilon_P = 0.25, \epsilon_S = 0.75$

Average Elasticity, $\epsilon_P = 0.5, \epsilon_S = 1.5$

Source: Own calculations based on CPS and NBER TAXSIM.

Back