U.S. Tax Progressivity and Redistribution

David Splinter

Data: davidsplinter.com
Comments: david.splinter@jct.gov

May 14, 2020
National Tax Association Spring Symposium

Updated July 10, 2020. This presentation embodies work undertaken for the staff of the Joint Committee on Taxation, but as members of both parties and both houses of Congress comprise the Joint Committee on Taxation, this work should not be construed to represent the position of any member of the Committee.
Outline

1) Current U.S. federal tax system is progressive

2) Tax progressivity increased since 1979

3) Progressivity vs. Redistribution measures

4) Redistribution increased since 1979
Previous Research

Average tax rates
- Expanded income: TPC, JCT, OTA, CBO (Kasten, Sammartino & Toder 1994)
- Fiscal income: Piketty & Saez (2007)

“Progressivity” measures
  - Moore & Pecoraro (2020) review and critique use of smooth functions

Tax/Transfer Redistribution Measures
- Reynolds & Smolensky (1977), Lambert (1985), Meyer et al. (2020)
1) Current federal tax system is progressive
Average Tax Rates in 2014

Federal taxes (including payroll taxes)

Notes: JCT for 2015. Piketty-Saez for 2004 and based on relatively narrow income definition, Auten-Splinter on broad national income, and others on intermediate income definitions.
2) Tax progressivity increased since 1979
(CBO data for rest of presentation)
Tax progressivity increased since 1979
Quintile-level average federal tax rates

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers.
Tax progressivity measures

Kakwani index

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers.
Tax progressivity increased, 1979=100

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers. Includes 2008 recovery rebate credits, 2009-10 making work pay credits, and 2011-12 payroll tax holiday.
Tax progressivity measures

Tax elasticity (weighted by #individuals)

\[ \epsilon = \text{slope} - 1 = 0.47 \]

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers.
Tax progressivity increased, 1979=100

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers. Includes 2008 recovery rebate credits, 2009-10 making work pay credits, and 2011-12 payroll tax holiday.
Tax progressivity increased, 1979=100

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers. Includes 2008 recovery rebate credits, 2009-10 making work pay credits, and 2011-12 payroll tax holiday.
Top rates are not progressivity
Not enough taxpayers are subject to top income rates

Source: SOI individual reports for various years.
Top rates are not progressivity
Top 1% avg. income tax rates flat since 1960s

Source: SOI individual reports for various years.
Top rates are not progressivity
more sheltering in C corps with higher rates

Tax base was “full of leaks, loopholes, exemptions and preferences” – Hellerstein (1963)

Source: SOI individual reports for various years.
3) Progressivity vs. Redistribution measures
Progressivity vs. Redistribution

\( \% \Delta \) Taxes measures progressivity

- independent of proportional tax changes
- not sensitive to amount of total taxation

Source: Author’s example: initial A income of $10K and tax $1K, B of $100K and $30K.
Progressivity vs. Redistribution

%Δ After-tax income measures redistribution
- not independent of proportional tax changes
- sensitive to amount of total taxation

Source: Author’s example: initial A income of $10K and tax $1K, B of $100K and $30K.
Progressivity vs. Redistribution

Proportional changes to 2014 taxes

- Progressivity is NOT affected
- Redistribution is affected

<table>
<thead>
<tr>
<th>Effective tax rate</th>
<th>Tax progressivity (%Δ)</th>
<th>Tax redistribution (%Δ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline (2014)</td>
<td>New rate</td>
<td>Kakwani index</td>
</tr>
<tr>
<td>21.2</td>
<td>23.3</td>
<td>0.0</td>
</tr>
<tr>
<td>21.2</td>
<td>19.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Proportional increase in avg. tax rates of 10 percent

Proportional decrease in avg. tax rates of 10 percent

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers.
4) Redistribution increased since 1979
Average Tax Rates

Tax rate = taxes/income
Average Tax Rates

**Tax rate** = taxes/income

Source: Author’s calculations from CBO estimates. Notes: Income is market income.
Tax/transfer redistribution in 2016

Redistribution rate = (taxes – transfers)/income

Source: Author’s calculations from CBO estimates. Notes: Income is market income.
Tax/transfer redistribution measures
Reynolds-Smolensky index

Source: Author’s calculations from CBO estimates. Notes: Individuals ranked by market income.
Tax/transf. redistribution increased since 1979

Source: Author’s calculations from CBO estimates. Notes: 1979 level set to 100.
Tax/transf. redistribution increased since 1979

Mitigating factors:
- Total taxes as share of income fell
- Transfers increasingly to middle incomes

Source: Author’s calculations from CBO estimates. Notes: 1979 level set to 100.
Conclusions

Current U.S. tax system is progressive

Measures of progressivity vs. redistribution
\[ \Delta_{\text{after-tax income measures}} \quad \Delta_{\text{redistribution}} \]

Progressivity/Redistribution increased since 1979
Tax progressivity by Kakwani increased 46%
Redistribution by Reyn-Smol. increased 59%

Comments: david.splinter@jct.gov
Data: davidsplinter.com
Appendix Slides
Tax progressivity increased since 1979
Quintile-level federal tax rate by source

Source: Author’s calculations from CBO estimates. Notes: Income excludes means-tested transfers.
Redistribution increased since 1979
Quintile-level transfer rates by source

**Source:** Author’s calculations from CBO estimates. **Notes:** Income is market income.
Tax/transf. redistribution increased since 1979

Average redistribution rates (pp changes)

Source: Author’s calculations from CBO estimates. Notes: Income is market income.
Saez-Zucman (2019) reconciliation to CBO + state/local approach
Average Tax Rates in 2010
Federal (CBO) + State/Local taxes (ITEP)

Notes: ITEP is the Institute on Taxation and Economic Policy.
Average Tax Rates in 2010
Saez-Zucman rates matched to CBO+State/Local
Average Tax Rates in 2010
Saez-Zucman rates matched to CBO+State/Local

Add missing OASDI taxes & social insurance to income
Average Tax Rates in 2010
Saez-Zucman rates matched to CBO+State/Local

Remove imputed retirement & underreported income
Average Tax Rates in 2010
Saez-Zucman rates matched to CBO+State/Local

Account for refundable credits

Top 1%
Average Tax Rates in 2010
Saez-Zucman rates matched to CBO+State/Local

Add back bottom decile of adults dropped by SZ, remove other imputed income, equivalence scale, weight by #individuals