Effective tax rates by wealth class

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Federal Reserve Board

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The analysis and conclusions set forth are those of the author and do not indicate concurrence by other members of the research staff or the Board of Governors of the Federal Reserve System.
1 Intro

2 ATRs by wealth
How progressive is the tax system? Do “the rich” pay the most tax?

- Progressive, rich w/ highest avg. tax rate (ATR): Auten Splinter (2019)
- Less progressive, but the rich still have highest ATRs: PSZ (2018)
- Marginally progressive, “richest” have lower ATR: Saez Zucman (2019)

So far, the “the rich” are those with the highest income...

...though much of the discussion is about taxes paid by the wealthiest
Find ATRs, “the rich” = the wealthiest

- Use the Survey of Consumer Finances (SCF).
  - Gets top (Bricker Hansen Volz 2019), consistent with external aggregates: net worth in FA (Batty et al 2019), income in SOI (Dettling et al 2016)
  - 1995-2016 (triennial); data end in 2016, so no JCJA17
  - Income from year prior: 1994-2015

- Wealth = assets - debts + DB pension wealth (Sabelhaus Volz 19)
Use broad measure of income to calculate ATR

1st: Estimate taxes paid
1. Generate a federal and state tax liability for each family via TAXSIM
   - SCF income (prior year), generate exemptions, deductions by tax unit
   - Combine tax units back into households (incl. filers and nonfilers)
2. Include residential property taxes (from SCF), distribute aggregate business property taxes paid (AS19, PSZ18)
3. Distribute aggregate corporate taxes paid (AS19, PSZ18)
4. No payroll, sales, estate tax

2nd: estimate broad household income:
1. From a tax form (wages, capital, business income) as in SCF
2. Add some transfers in SCF,
3. Distribute aggregate transfers (food, heating assistance)
4. Distribute employer-provided health, Medicare/aid
5. Distribute corporate retained earnings, taxes paid

Wealth groups: Bot 50, Next 40, 90-99th, Top 1% (ex), Top 0.1%
- ATR = ratio of total taxes paid to total income measure
Reliability: SCF ATRs by income similar to other estimates

- SOI-PUF (own estimate), SCF, Piketty-Saez
- Taxable income: income minus exemptions, deductions

Average tax rate, 2003, 2004

<table>
<thead>
<tr>
<th>Income group</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot50</td>
<td>0</td>
</tr>
<tr>
<td>Next40</td>
<td>10</td>
</tr>
<tr>
<td>90-99</td>
<td>20</td>
</tr>
<tr>
<td>99-99.9</td>
<td>30</td>
</tr>
<tr>
<td>Top 0.1</td>
<td>40</td>
</tr>
</tbody>
</table>

PS 2004
PUF 2003
SCF (2003 taxable)
2016 SCF: joint distribution of income and wealth

34 pct. of those with highest income are also the wealthiest

<table>
<thead>
<tr>
<th>Broad income rank</th>
<th>Top 0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot50</td>
<td>0</td>
</tr>
<tr>
<td>Next40</td>
<td>0</td>
</tr>
<tr>
<td>Wealth rank</td>
<td></td>
</tr>
<tr>
<td>90-99</td>
<td>8</td>
</tr>
<tr>
<td>99-99.9</td>
<td>59</td>
</tr>
<tr>
<td>Top 0.1</td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

Table: Wealth vs. income, 2016 SCF
1 Intro

2 ATRs by wealth
Wealthiest families pay higher share of income in taxes, on average

<table>
<thead>
<tr>
<th>Wealth group</th>
<th>ATR (share of income paid in taxes)</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom50</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Next40</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>90-99th</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Top1</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Top0.1</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>
Progressive by wealth

- \( \Delta \) individual federal tax code \( \implies \) \( \Delta \) progressivity

![Graph showing progressivity by wealth groups over time](image-url)
What share of assets do the wealthiest pay in taxes?

- Total taxes paid relative to total assets

![Graph showing the share of assets paid in taxes for different wealth groups.]
Balance sheets by wealth

- Realized capital gains = income, unrealized = potential income

![Bar chart showing balance sheets by wealth categories with categories labeled Bot50, Next40, Next9, Top1, Top0.1 and subcategories Fin, Ret, Prop, Bus, NonFin.]
Unrealized capital gains for wealthy

- Realized capital gains = income, unrealized = potential income
- \( \approx 50\% \) of assets of wealthiest 0.1 percent are unrealized KG
Broaden the measure of income: “Haig-Simons”

- Add estimate of “potential” household income:
  1. From a tax form (wages, capital, business income) as in SCF
  2. Add some transfers in SCF,
  3. Distribute aggregate transfers (food, heating assistance)
  4. Distribute employer-provided health, Medicare/aid
  5. Distribute Corp. retained earnings, taxes paid
  6. Add 3% of non-fin assets, excl home (assume common RoR)
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  1. From a tax form (wages, capital, business income) as in SCF
  2. Add some transfers in SCF,
  3. Distribute aggregate transfers (food, heating assistance)
  4. Distribute employer-provided health, Medicare/aid
  5. Distribute Corp. retained earnings, taxes paid
  6. Add 3% of non-fin assets, excl home (assume common RoR)
  7. Add 1% of financial assets (do not 2x count retained earnings)

- Organize into five wealth groups (Bottom 50,..., Top 0.1%)
  - ATR=ratio of total taxes paid to total broad income, incl. Δasset
Progressivity by wealth? ATR for Haig-Simons income

- Proxy Haig-Simons: include Δassets in income

![Graph showing ATR for different wealth groups]

- Bricker (Federal Reserve Board)
- Taxing the increasingly wealthy
Equalizes taxes paid relative to assets

- Add a 2% tax on assets for those over $25 mill in 2016 (...or tax unrealized KG, ... Leiserson 2019)
- Taxes paid as a share of assets equal for top 50 (about 3.5%)
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- Taxes paid as a share of assets equal for top 50 (about 3.5%)
Conclusion

- Tax system is progressive by wealth
  - Wealthy pay a larger share of their income in taxes than do less-wealthy
  - Changes in federal income tax code change ATRs by wealth

- KG taxed only when realized, potential “income” of wealthiest not (never?) taxed
  - “Haig-Simons” income as denominator of ATR: much less progressivity
## Wealth vs. Income

<table>
<thead>
<tr>
<th>Percentile groups</th>
<th>Preferred income</th>
<th>Wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bot50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Next40</td>
<td>71.1</td>
<td>144.2</td>
</tr>
<tr>
<td>90-99</td>
<td>193.9</td>
<td>1,694.5</td>
</tr>
<tr>
<td>99-99.9</td>
<td>846.0</td>
<td>10,635.9</td>
</tr>
<tr>
<td>Top 0.1</td>
<td>3,897.0</td>
<td>43,168.1</td>
</tr>
</tbody>
</table>

**Table:** Wealth vs. income, 2016 SCF
What taxes do the wealthiest pay?

- Federal, ...
What share of assets do the wealthiest pay?

- Less than anyone

![Bar chart showing ratio of taxes paid to assets by different income groups.](chart.png)