Changes in the Distribution of After-Tax Wealth: Has Income Tax Policy Increased Wealth Inequality?

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

• Wealth inequality is increasing
  • Recent focus on the top of the distribution
  • Piketty (2014), Saez and Zucman (2014), Wolff (2014), Bricker et al (2014), and Bricker et al (2015) and many earlier studies use pre-tax wealth

• Substantial share of US household wealth is held in tax-deferred form
  • Retirement accounts and unrealized capital gains = 38% of wealth in 2013
  • Represents an implicit tax liability for households
  • Some wealth not available for consumption
Motivation

- Effects of income tax policy on the wealth distribution
  - May increase or decrease wealth inequality
  - Effects of changes in income tax policy over time

- After-tax wealth as a better measure of financial well-being
  - Similar to studies that build a more complete measure of income
Preview of results

• Distribution of after-tax wealth is less concentrated than pre-tax
  • Inequality is also increasing in the after-tax wealth distribution
• Income tax policy has become less effective in reducing wealth inequality
  • Driven by large reductions in capital gains tax rates over time
• Alternative income tax policies can reduce wealth concentration
  • Increase in the tax rate on capital gains
  • Wealth inequality still increases between 1989 and 2013
Data

• Survey of Consumer Finances (SCF)
  • Survey of households sponsored by the Federal Reserve Board
  • In cooperation with Department of Treasury
• SCF triennial cross-sectional surveys, 1989-2013
  • Sample sizes = 4,000 to 6,500 households
• Dual frame sample design
  • Area probability – typical households
  • List – oversample wealthy households
• Details on the SCF – Bricker et al. (2014)
Measuring wealth in the SCF

• Assets
  • Financial assets
    • Transaction accounts
    • CDs
    • Stocks and bonds
    • Mutual funds
    • Retirement accounts
    • Trusts and annuities
  • Nonfinancial assets
    • Vehicles
    • Houses / other property
    • Businesses (privately-held)

• Liabilities
  • Mortgages
  • Installment loans
    • Car loans
    • Student loans
    • Other loans
  • Credit card balances
  • Lines of credit
Mean and median pre-tax wealth

![Graph showing mean and median pre-tax wealth over years from 1989 to 2013. The x-axis represents the years 1989 to 2013, and the y-axis represents the pre-tax net worth in thousands of 2013 dollars. The graph includes two lines: one for mean pre-tax net worth and another for median pre-tax net worth. The data shows a general increase in both mean and median pre-tax net worth throughout the years, with a peak in 2004 and a noticeable decline in 2007.](image-url)
Mean pre-tax wealth
by pre-tax wealth percentile

Thousands of 2013 dollars

Year


0 50 100 150 200 250

0-89.9
Mean pre-tax wealth
by pre-tax wealth percentile
Pre-tax wealth shares
by pre-tax wealth percentiles

![Graph showing pre-tax wealth shares by pre-tax wealth percentiles over time from 1989 to 2013.](image-url)
Tax-deferred assets

• Tax-deferred retirement accounts
  • Plans through current and past employers
    • 401(k)s, 403(b)s, other defined-contribution pension plans
  • Plans started by an individual
    • Individual Retirement Accounts (IRA), Keogh (like an IRA)

• Unrealized capital gains
  • Real estate
  • Privately-held businesses
  • Stock and stock mutual funds
    • Not including the primary residence

• Ownership of tax-deferred assets
  • 56% in 2013, peaked at 63% in 2001
Ownership of tax-deferred assets
by pre-tax wealth percentiles
Share of wealth in tax-deferred retirement
by pre-tax wealth percentiles

![Chart showing the share of wealth in tax-deferred retirement by pre-tax wealth percentiles from 1989 to 2013.](chart.png)
Share of wealth in unrealized capital gains
by pre-tax wealth percentiles
Estimating tax liabilities

• NBER TAXSIM – calculates tax liabilities under federal & state tax laws
  • Generate necessary input variables from the SCF data
  • Base tax liability = household’s tax liability based on prior year income, exemptions and deductions
  • Tax-deferred tax liability = add tax-deferred retirement assets to wage income, add unrealized capital gains to long-term capital gains income
  • Implicit tax liability = tax-deferred – base

• After-tax wealth = pre-tax wealth minus implicit tax liability
Tax rate changes, 1988-2012
Implicit tax liability as a share of wealth
by pre-tax wealth percentiles
Effective tax rate on tax-deferred assets
by pre-tax wealth percentiles
Mean and median after-tax wealth

Thousands of 2013 dollars


$150 $200 $250 $300 $350 $400 $450 $500 $550 $600 $650 $700 $750 $800 $850 $900 $950 $1000 $1050 $1100 $1150 $1200 $1250 $1300 $1350 $1400 $1450 $1500 $1550 $1600 $1650 $1700 $1750 $1800 $1850 $1900 $1950 $2000 $2050 $2100

Mean Pre-Tax Net Worth
Mean After-tax Net Worth
Median Pre-Tax Net Worth
Median After-Tax Net Worth
Wealth shares
by pre-tax wealth percentiles
Difference in wealth shares (after-tax – pre-tax)
by pre-tax wealth percentiles
The top 1 percent

• Stand out in all parts of the analysis
• Many recent studies focus on groups within the top 1 percent
• Split top 1 percent into two subgroups
  • Top 0.1 and remaining 0.9 percent
• Heterogeneity within the top 1 percent
  • Mean wealth in 2013 for top 0.1 = $75 million
  • Mean wealth in 2013 for rest of top 1 = $13 million
  • Top 0.1 mean unrealized capital gains = 7 times the rest of the top 1
  • Mean tax-deferred retirement assets about the same
Share of wealth in tax-deferred assets
Top 1 percent
Effective tax rate on tax-deferred assets
Top 1 percent
Difference in wealth shares (after-tax – pre-tax)
Top 1 percent
Alternative tax policy

• Why the differential in wage vs. capital gains rates?
  • “Lock-in” effect of high capital gains tax rates
  • Spur economic growth with lower tax rates

• Unrealized capital gains taxed at wage income rates
  • Treated the same as tax-deferred retirement accounts
  • Estimate alternative tax liability
  • Implicit tax liability = alternative – base

• After-tax wealth = pre-tax wealth minus implicit tax liability
Effective tax rates on tax-deferred assets
Alternative tax policy
Wealth shares
Alternative tax policy

Percent

Year

0-89.9
90-98.9
99-100
0-89.9 Alt
90-98.9 Alt
99-100 Alt
Difference in wealth shares (after-tax – pre-tax)

Alternative tax policy

[Graph showing difference in wealth shares (after-tax – pre-tax) for various years from 1989 to 2013.]
Conclusions

• We provide new estimates of the after-tax distribution of wealth
• Distribution of after-tax wealth is less concentrated than pre-tax
  • Effectiveness of income tax policy in reducing inequality has declined
  • Combination of substantial decline in capital gains tax rates and large share of unrealized gains in wealth at the top of the wealth distribution
  • Effect is magnified within the top 1 percent
    • Top 0.1 experienced largest declines in effective tax rates on tax-deferred assets
• Our alternative tax policy does reduce wealth concentration
  • Wealth inequality still increases between 1989 and 2013
• Adverse effect of income tax policies on wealth inequality
Thank you

Questions?
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Ownership of defined-benefit and defined contribution plans

![Graph showing the ownership of defined-benefit and defined contribution plans over the years from 1989 to 2013. The graph indicates a decrease in defined-benefit plans and an increase in defined-contribution plans.](image)