The Future of Fiscal Policy: American Economic Policy Debates in the 21st Century

Taxing Top Earners

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Woodrow Wilson School
Fall 2018

Week 4

Thanks to Emmanuel Saez for providing his notes and slides, many of which are reproduced here. Stephanie Kestelman provided excellent assistance making these slides.

Outline

1. Motivation
2. Policy
   - Federal US income tax policy (pre-TCJA)
   - State and local tax deduction
   - Mortgage interest deduction
   - Pass-throughs, taxes, and inequality
   - Recent top income tax reforms (pre-TCJA)
   - Tax Cuts and Jobs Act of 2017
   - Future Tax Reform
3. Theory
4. Evidence
   - Empirical estimation of e and identification issues
   - Evidence from Zidar (2018) "Tax cuts for whom?"

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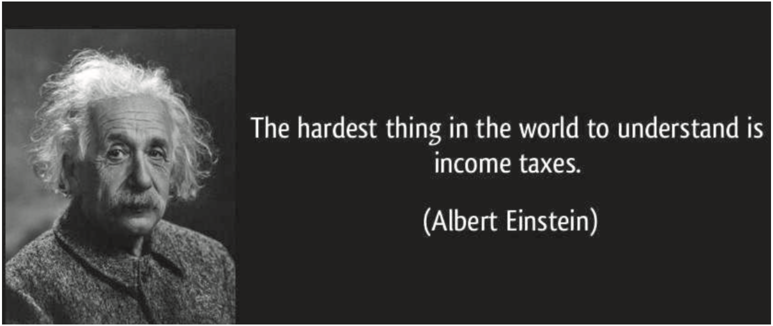
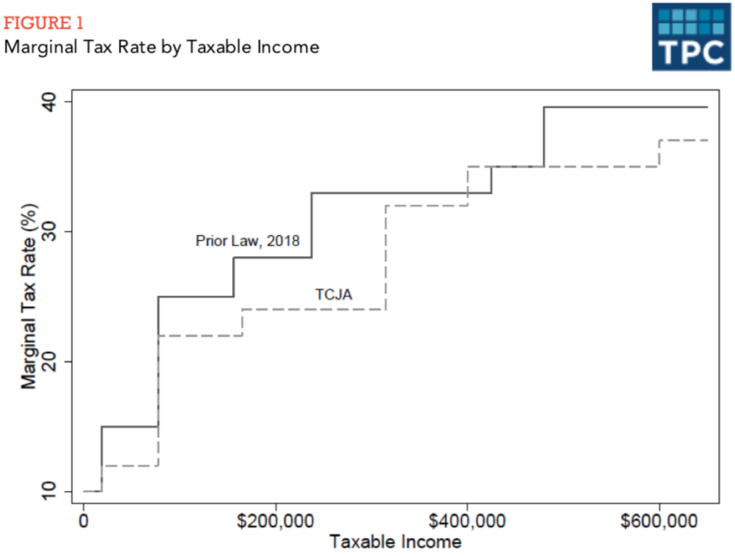


Credit to Heathcote Storesletten Violante (QJE, forthcoming) for the quote.

TCJA change in top marginal rates



Source: Tax Policy Center

TCJA Distributional Table

TABLE 4

Conference Agreement for H.R. 1, The Tax Cuts and Jobs Act
Distribution of Federal Tax Change by Expanded Cash Income Percentile
2018; Summary Table; Baseline: Current Law

TPC

Expanded cash income percentile [a,b]	Tax Units		Percent change in after-tax income [c]	Share of total federal tax change	Average federal tax change ($)	Average Federal Tax Rate [d]	
	Number (thousands)	Percent of total				Change (% points)	Under the proposal
Lowest quintile	48,780	27.7	0.4	1.0	-60	-0.4	3.7
Second quintile	38,760	22.0	1.2	5.2	-380	-1.1	7.6
Middle quintile	34,290	19.5	1.6	11.2	-930	-1.4	12.4
Fourth quintile	28,870	16.4	1.9	18.4	-1,810	-1.6	15.8
Top quintile	24,300	13.8	2.9	65.3	-7,640	-2.2	23.3
All	176,100	100.0	2.2	100.0	-1,610	-1.8	18.1
Addendum							
80–90	12,490	7.1	2.0	13.1	-2,970	-1.6	18.5
90–95	6,020	3.4	2.2	9.6	-4,550	-1.8	20.2
95–99	4,650	2.6	4.1	22.1	-13,480	-3.1	22.2
Top 1 percent	1,140	0.7	3.4	20.5	-51,140	-2.3	30.3
Top 0.1 percent	120	0.1	2.7	7.9	-193,380	-1.8	31.6

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0217-1).

Notes: Calendar year. Baseline is current law. Excludes effects of reduction in ACA Individual Shared Responsibility Payment to zero. http://www.taxpolicycenter.org/taxtopics/Baseline-Definitions.cfm

Number of AMT Taxpayers (millions). Baseline: 5.2; Proposal: 0.2

(a) Includes both filing and nonfiling units but excludes those that are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective income class but are included in the totals. For a description of expanded cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm

(b) The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The breaks are (in 2017 dollars): 20% $25,000; 40% $48,600; 60% $86,100; 80% $149,400; 90% $216,800; 95% $307,900; 99% $732,800; 99.9% $3,439,900.

(c) After-tax income is expanded cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); estate tax; and excise taxes.

(d) Average federal tax (includes individual and corporate income tax, payroll taxes for Social Security and Medicare, the estate tax, and excise taxes) as a percentage of average expanded cash income.

Source: Tax Policy Center.

Recent top income tax policy debate

The New York Times | https://nyti.ms/2jEuc7v

POLITICS

Why a Firm Believer in Tax Cuts Could Derail the Senate Tax Cut Plan

By JIM TANKERSLEY NOV. 18, 2017

Mr. Johnson had become the first Senate Republican to say publicly that he could not vote for the Senate's version of the tax bill. During the phone call on Wednesday afternoon, Mr. Ryan, who had campaigned heavily for Mr. Johnson in 2016, posed an essential question, according to the senator: "What are you going to need?"

Source: NYTimes.

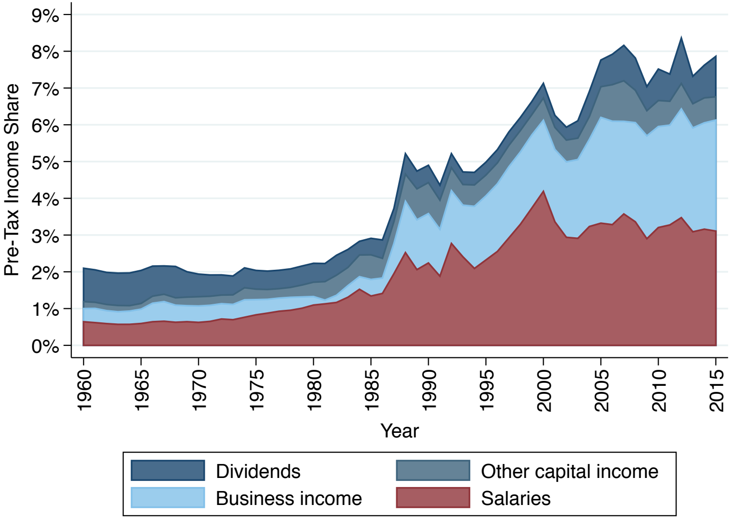
Recent top income tax policy debate

What Mr. Johnson needs, he said in an interview from Wisconsin on Friday, is for the bill to treat more favorably small businesses and other so-called pass-through entities – businesses whose profits are distributed to their owners and taxed at rates for individuals. Such entities, including Mr. Johnson's family-run plastics manufacturing business, account for more than half of the nation's business income, and the senator says the tax bill would give an unfair advantage to larger corporations.

"I just have in my heart a real affinity for these owner-operated pass-throughs," he said. "We need to make American businesses competitive – they're not right now. But in making businesses competitive, we can't leave behind the pass-throughs."

Source: NYTimes.

Rising Top 0.1% income shares



Source: Smith, Yagan, Zidar, Zwick (2018).

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Federal US Income tax

- US income tax assessed on **annual family** income (not individual) [most other OECD countries have shifted to individual assessment]
- Sum all cash income sources from family members (both from labor and capital income sources) = called **Adjusted Gross Income (AGI)**
- Main exclusions: fringe benefits (health insurance, pension contributions), imputed rent of homeowners, unrealized capital gains

Federal US Income tax (pre-TCJA)

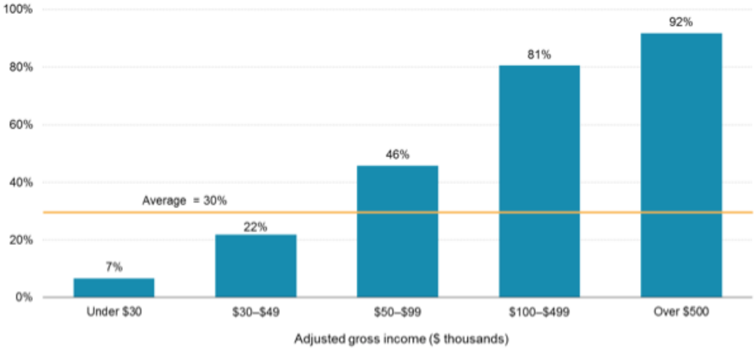
- Taxable income = AGI - personal exemptions - deduction
- personal exemptions = $4K * # family members (in 2016)
- deduction is max of standard deduction or itemized deductions
- Standard deduction is a fixed amount depending on family structure ($12.6K for couple, $6.3K for single in 2016)
- Itemized deductions: (a) state and local taxes paid, (b) mortgage interest payments, (c) charitable giving, various small other items
- About 10% of AGI lost through itemized deductions, called tax expenditures

Federal US Income tax deductions

FIGURE 1

High-Income Taxpayers Were More Likely to Itemize Deductions

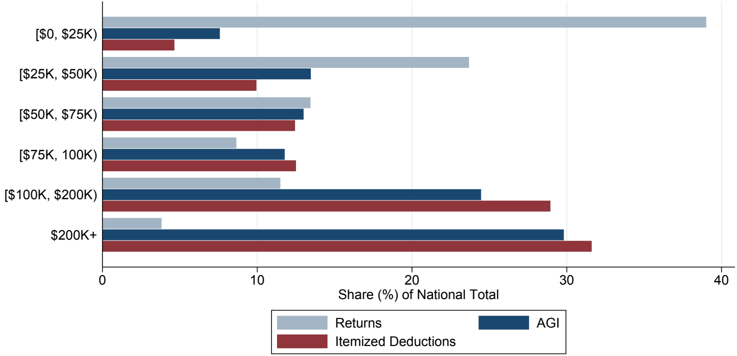
Share of tax units claiming itemized deductions, 2014



Source: Internal Revenue Service, *SOI Tax Stats—Individual Income Tax Returns Publication 1304 (Complete Report)*, "Table 1.2: All Returns: Adjusted Gross Income, Exemptions, Deductions, and Tax Items," August 31, 2016, https://www.irs.gov/uac/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report.

Source: Tax Policy Center.

Federal US Income tax deductions

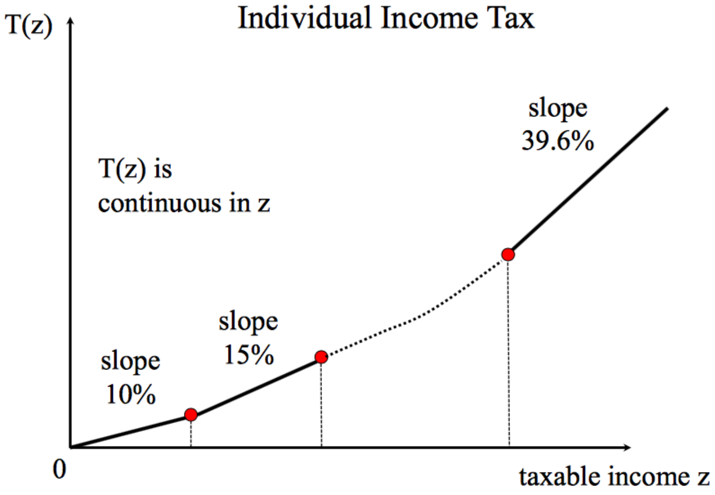


Source: Zidar's calculations of IRS SOI 2013 data

Federal US Income tax brackets

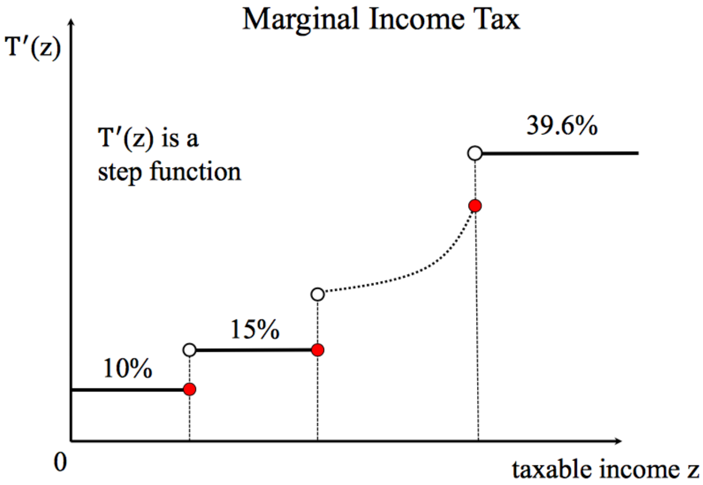
- Tax $T(z)$ is piecewise linear and continuous function of taxable income z with constant marginal tax rates (MTR) $T'(z)$ by brackets
- In 2013-2016, 6 brackets with MTR 10%,15%,25%,28%,33%,35%, 39.6% (top bracket for z above \$470K), indexed on price inflation
- Lower preferential rates (up to a max of 20%) apply to dividends (since 2003) and realized capital gains [in part to offset double taxation of corporate profits]
- Tax rates change frequently over time. Top MTRs have declined drastically since 1960s (as in many OECD countries)

Federal US Income tax schedule (pre-TCJA)



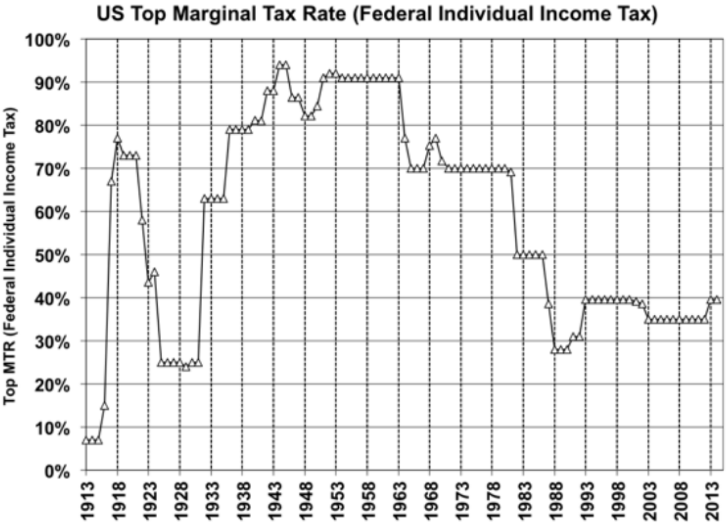
Source: Saez.

Federal US Income marginal tax schedule (pre-TCJA)



Source: Saez.

Federal US top income tax rate



Federal US Income tax deductions

TABLE 1

Cost of Selected Itemized Deductions

Billions of dollars, 2017

Deduction	Cost
Mortgage interest on owner-occupied residences	63.6
State and local income, sales, and personal property taxes	69.3
Charitable contributions	56.9
Property taxes on real property	33.3

Source : The Joint Committee on Taxation, "Estimates of Federal Tax Expenditures for Fiscal Years 2016-2020," (JCX-3-17), January 30, 2017, Table 1.

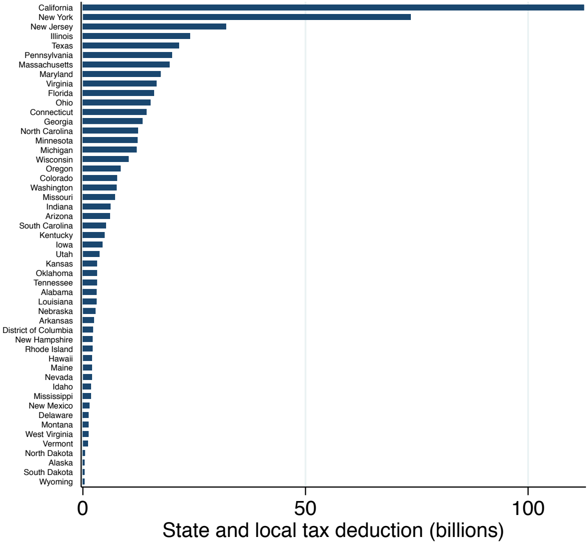
Source: Tax Policy Center.

State and Local Tax Deduction

- Major tax reform proposals, such as the Tax Reform Act of 1986 and the 2005 President's Advisory Panel on Federal Tax Reform, often propose eliminating or reducing the state and local tax deduction (SALT), which is one of the largest tax expenditures in the U.S. tax code and was deemed by President Reagan "the most sacred of cows."
- Tax Cuts and Job Acts 2017 limited this to 10K (after initially considering a full elimination)
- SALT enables taxpayers to deduct state and local income taxes, which lowers tax liabilities by reducing the amount of taxable income that is subject to federal income tax.

State and Local Tax Deduction

2015 data from Tax Policy Center



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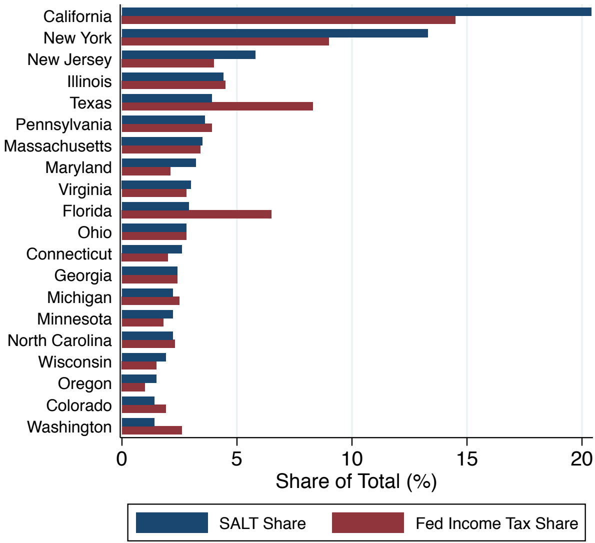

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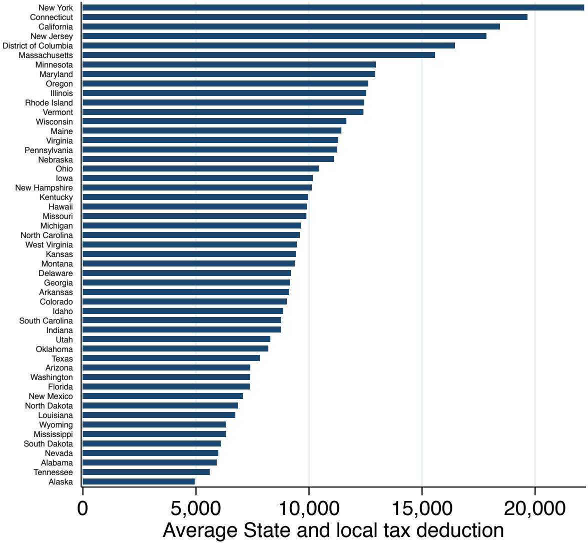

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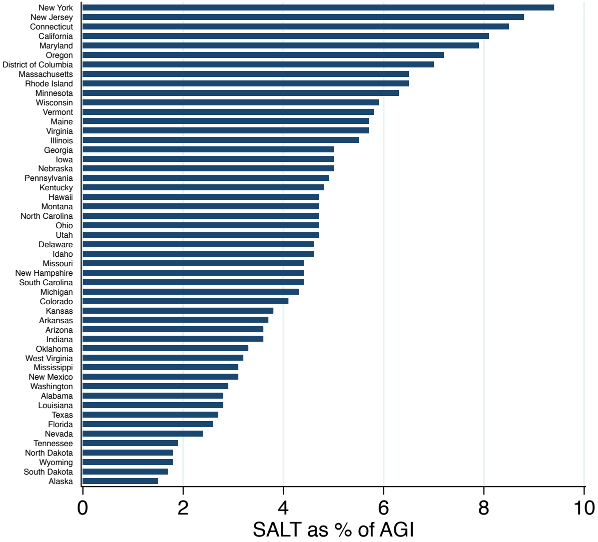

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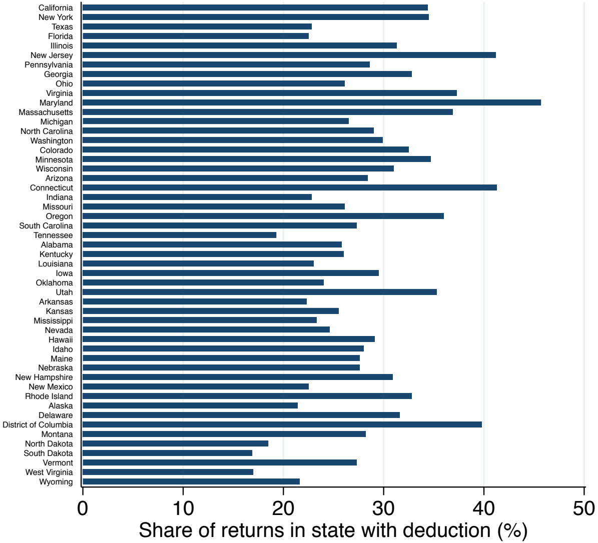
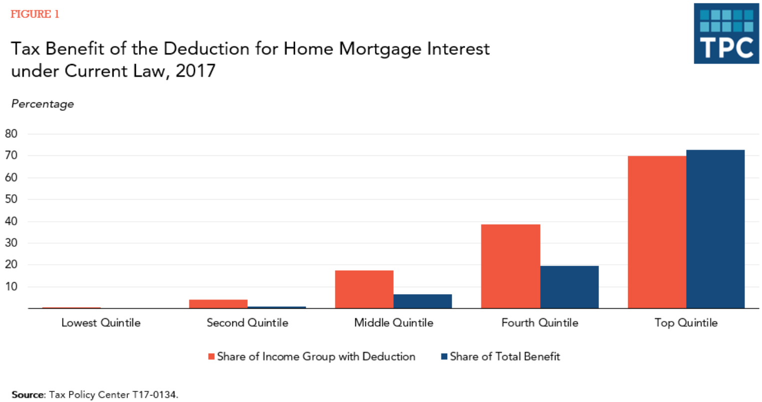


Mortgage interest deduction (pre-TCJA)

- People who itemize their deductions can deduct interest payments on the first $1 million of outstanding mortgage loan principal for a primary or secondary home and on the interest for up to $100,000 of home equity debt.
- Dollars: 7 percent of the benefits go the middle 20 percent of households, compared to roughly three-quarters that go to the top quintile.
- Participation: 17 percent of those in the middle quintile take the deduction, compared to about 70 percent in the top quintile.

Source: Tax policy center.
`http://www.taxpolicycenter.org/taxvox/gutting-mortgage-interest-deduction`

Mortgage interest deduction (MID)



Source: Tax Policy Center.

Mortgage interest deduction (MID)

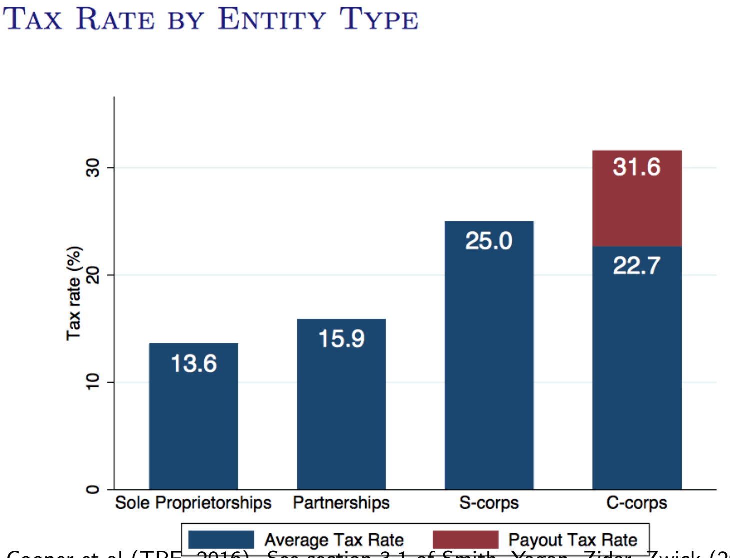
Table T17-0134
Tax Benefit of the Deduction for Home Mortgage Interest
Baseline: Current Law
Distribution of Federal Tax Change by Expanded Cash Income Percentile, 2017 [1]
Detail Table

Expanded Cash Income Percentile [2,3]	Percent of Tax Units [4]		Benefit as a Percent of After-Tax Income [5]	Share of Total Benefit	Average Benefit		Share of Federal Taxes		Average Federal Tax Rate [6]	
	With Benefit	Without Benefit			Dollars	Percent of Federal Taxes	With Provision	Without Provision	With Provision	Without Provision
Lowest Quintile	0.5	99.5	0.0	0.1	*	0.2	0.9	0.9	4.2	4.2
Second Quintile	4.3	95.7	0.1	1.1	20	0.7	3.8	3.8	8.8	8.9
Middle Quintile	17.4	82.7	0.3	6.7	150	1.6	9.9	9.8	14.0	14.2
Fourth Quintile	38.7	61.3	0.6	19.5	510	2.6	18.2	18.2	17.6	18.0
Top Quintile	70.0	30.0	0.9	72.6	2,240	2.6	67.0	67.1	25.7	26.4
All	20.4	79.6	0.6	100.0	430	2.4	100.0	100.0	20.0	20.5
Addendum										
80-90	66.0	34.1	1.0	22.9	1,380	3.8	14.5	14.7	20.5	21.3
90-95	73.8	26.2	1.1	18.1	2,260	4.0	10.8	11.0	22.2	23.1
95-99	76.7	23.3	1.2	23.5	3,780	3.4	16.5	16.7	25.7	26.6
Top 1 Percent	66.2	33.8	0.4	8.0	5,260	0.8	25.1	24.7	32.9	33.1
Top 0.1 Percent	53.2	46.8	0.1	0.7	4,680	0.1	12.6	12.3	34.0	34.1

Source: Tax Policy Center.

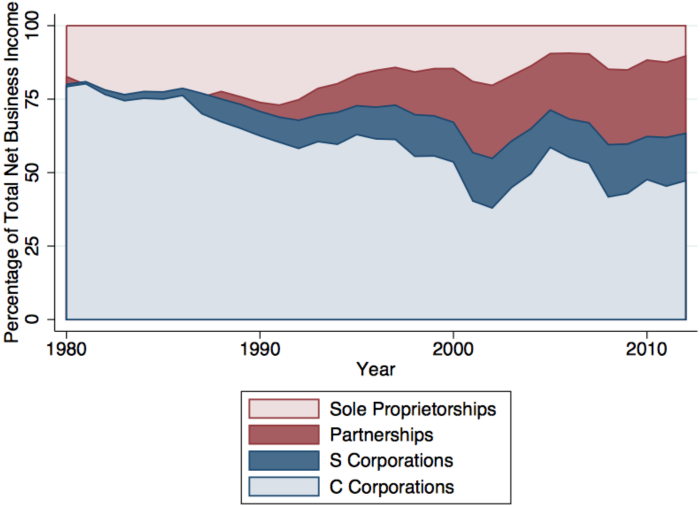
Pass-throughs, taxes, and inequality

Business Entity Types



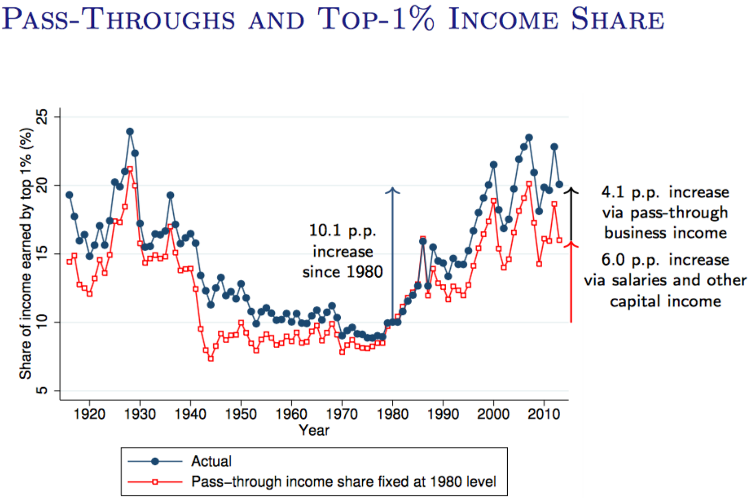
Source: Cooper et al (TPE, 2016). See section 3.1 of Smith, Yagan, Zidar, Zwick (2018) for an overview of business entity types and institutional detail

The Rise of Pass-throughs



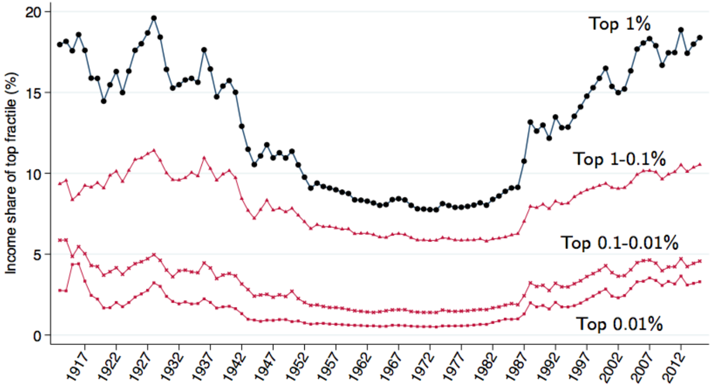
Source: Cooper et al (TPE, 2016).

Pass-throughs and the Top-1% Income share



Source: Cooper et al (TPE, 2016).

What is the nature of top incomes?

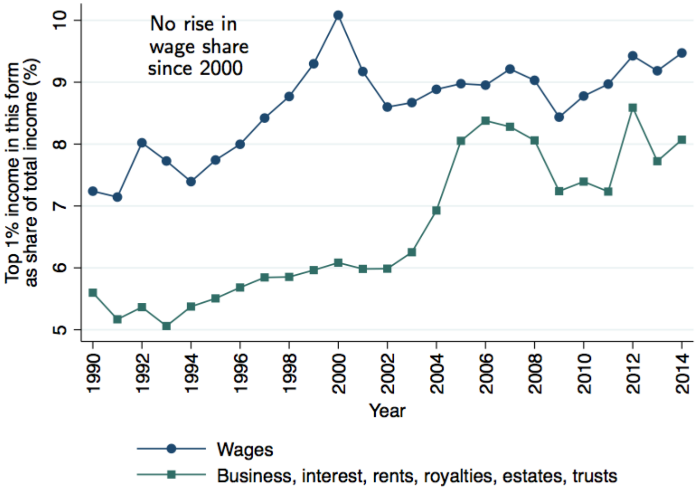


Thresholds: Top 1% ≈ \$400K. Top 0.1% ≈ \$1.5M. Top 0.01% ≈ \$6.8M.

Source: Piketty Saez (2003, 2016)

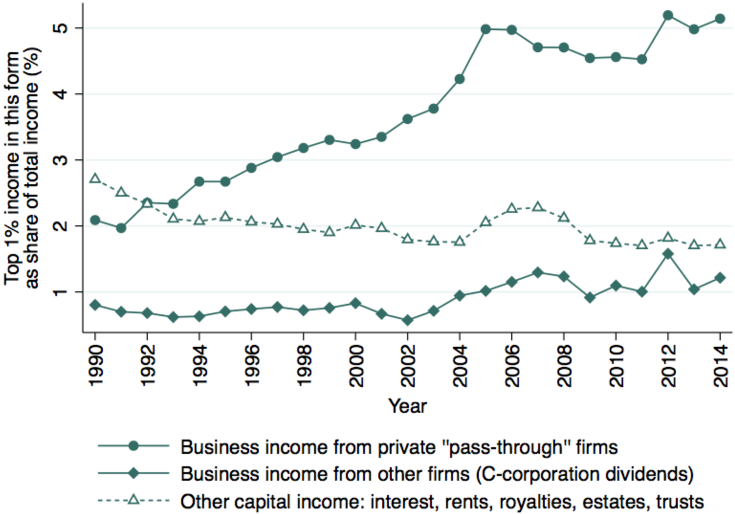
Source: Smith, Yagan, Zidar, Zwick (2018).

Have passive rentiers replaced the working rich?



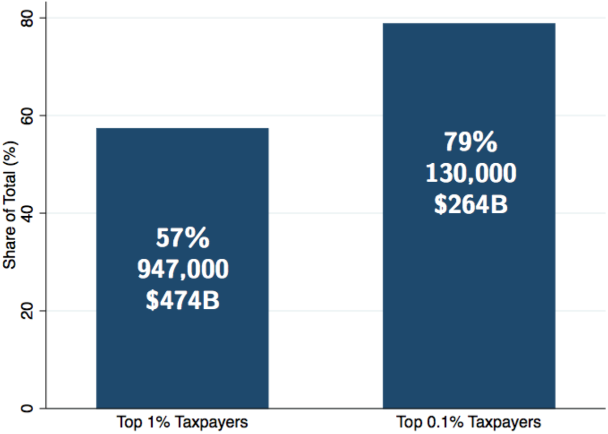
Source: Smith, Yagan, Zidar, Zwick (2018).

Rising top incomes is largely a private biz inc phenomenon



Source: Smith, Yagan, Zidar, Zwick (2018).

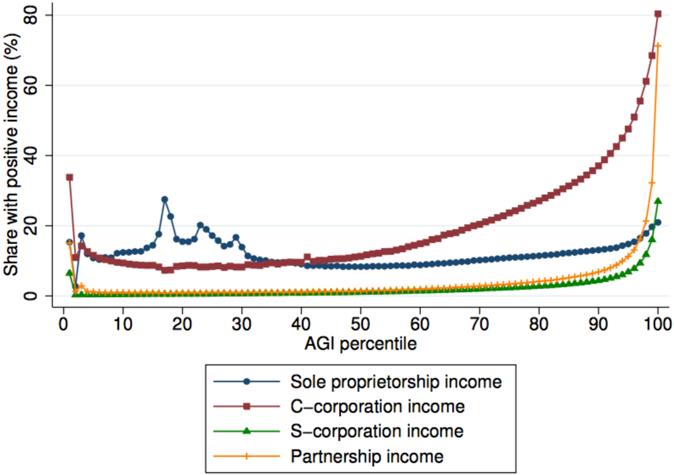
Most top earners own a private business



Compare: 9,900 S&P 1500 execs with total pay $\approx$ \$32B (Execucomp)

Source: Smith, Yagan, Zidar, Zwick (2018).

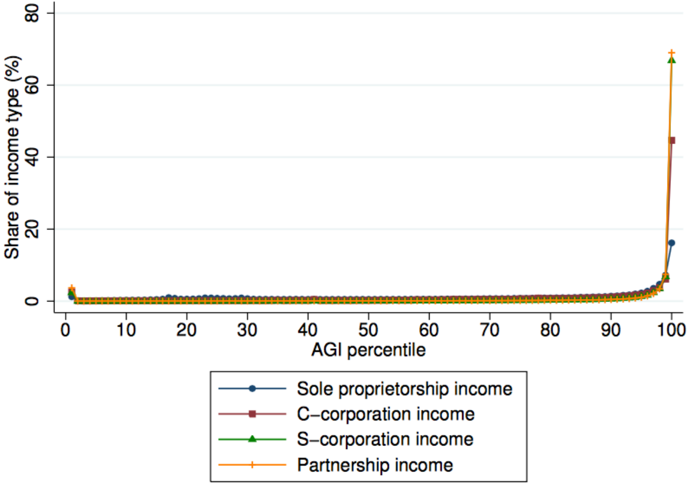
Private business ownership is concentrated



Source: Cooper et al (TPE, 2016).

Private business income is very concentrated

Roughly 70% of pass-through income goes to top 1%



Source: Cooper et al (TPE, 2016).

Industrial composition of S-corporation business income

Industries: Diverse, skill-intensive

2014 main sample. Statistics in millions of 2014 USD.

	Top 1-0.1%			Top 0.1%	
Industry (NAICS)	Rank	Profits	Industry (NAICS)	Rank	Profits
Offices of physicians (6211)	1	8980	Mmt of cos (5511)	1	12870
Othr prof/tech svc (5419)	2	4890	Othr fin invstmnt actvty (5239)	2	7815
Offices of dentists (6212)	3	4430	Auto dealers (4411)	3	6482
Othr spclty trade cntrctr (2389)	4	4300	Othr prof/tech svc (5419)	4	5157
Legal svc (5411)	5	3540	Oil/gas extraction (2111)	5	4359
Architects/engineer svc (5413)	6	2880	Offices of physicians (6211)	6	4266
Restaurants (7225)	7	2850	Durable goods whlsl (4239)	7	4244
Building equip cntrctr (2382)	8	2780	Mmt/tech consult svc (5416)	8	3889
Computer sys design svc (5415)	9	2680	Computer sys design svc (5415)	9	3861
Insurance agencies/brokers (5242)	10	2680	Othr heavy constr (2379)	10	3835
Mgmt/tech consult svc (5416)	11	2230	Othr spclty trade cntrctr (2389)	11	3815
Offices of health practit (6213)	12	1960	Othr fabric metal mfg. (3329)	12	3695
Nonres building constr (2362)	13	1920	Othr miscellaneous mfg. (3399)	13	3684
Durable goods whlsl (4239)	14	1720	Nondrbl gds whlsl (4249)	14	3240
Othr fabric metal mfg. (3329)	15	1680	Legal svc (5411)	15	3048

Top S-corporations are **diverse** and **skill-intensive**

- Representatives from all sectors, also geographically diverse
- Not just finance, technology, physical capital

Source: Smith, Yagan, Zidar, Zwick (2018).

Recent top income tax reforms

1) ACA (Obamacare) surtax rates (AGI above $250K):

+3.8 points on capital income

+0.9 points on labor income

S-corporation "active" profits and pensions are exempt

2) Individual income tax top bracket (above $450K):

Top ordinary tax rate increases from 35% to 39.6%

Divid./capital gains top tax rate increases from 15% to 20%

Increase was expected when Obama re-elected in early November 2012 (but actual increase enacted in early January 2013)

Source: Saez (TPE, 2017).

Recent top income tax reforms

Table 1
Effect of the 2013 Reform on Top Federal Marginal Tax Rates

	Top Federal Marginal Tax Rates			Income Thresholds		
	Pre-Reform (%)	Post-Reform (%)	Increase (%)	Married ($)	Heads ($)	Singles ($)
A. Health care tax					Labor Income	
Labor income (wages and self-employment)	2.9	3.8	0.9	250,000	200,000	200,000
					Modified Adjusted Gross Income	
Investment income	0.0	3.8	3.8	250,000	200,000	200,000
Other income (includes S corporation active profits, pensions, and other forms of income)	0.0	0.0	0.0			
B. Individual income tax						
Top income tax bracket:					Taxable Income (About 80% of AGI)	
Ordinary income	35.0	39.6	4.6	450,000	425,000	400,000
Long-term realized capital gains and dividends	15.0	20.0	5.0	450,000	425,000	400,000
Limitation on itemized deductions:					Adjusted Gross Income (AGI)	
All income forms	0.0	1.2	1.2	300,000	275,000	250,000
C. Total effect on top federal marginal tax rates by specific income components						
Labor income (wages and self-employment)	37.4	43.8	6.7			
Realized capital gains and dividends	15.0	25.0	10.0			
Other investment income	35.0	44.6	9.6			
S corporation active profits, pensions, other income	35.0	40.8	5.8			
Charitable giving (subsidy rate)	35.0	39.6	4.6			

Source: Saez (TPE, 2017).

Individual Tax Changes in TCJA

- Lowered top rate from 39.6 to 37 (and changed other brackets)
- Doubled standard deduction
- Eliminated personal exemption
- Reduced the AMT
- Doubled the child tax credit from $1K to $2K
- Limited benefits
  - Cap SALT at $10K
  - Lowered cap on MID for new mortgages from $1.1M to $750K
- Sets shared responsibility payment to zero, which effectively repeals the individual mandate in the ACA
- Made pass-through changes (see next slide)

TCJA: Pass-through Provisions

1. **Deductions:** Same as pertinent "old school" provisions
2. **Rate cut:**
   - Allows 20% deduction of qualified business income
   - Reduces top rate from 37% to 29.6%
3. **Phase-out of deduction:**
   - Specified service businesses – health, law, consulting, etc.
   - Businesses with low wages AND low capital. Cap on the deduction is greater of (a) 50% of W2 comp or (b) 25% of W2 comp and 2.5% of purchase of tangible assets
   - Phase-out begins at $157,500 for individuals, $315,000 for joint filers

Score of major TCJA Changes for Individuals

Conventional Revenue Score of the 2017 Tax Law

	2027 Law		2019 Law Permanent	
	2027	2018-2027	2027	2018-2027
Individual and Estate (excluding passthrough)				
Gross Cuts				
Statutory Rates	$0	-$1,214	-$186	-$1,525
Standard Deduction	$0	-$720	-$106	-$899
Child Credit	$1	-$544	-$76	-$694
Alternative Minimum Tax	$0	-$637	-$108	-$777
Estate Tax	-$3	-$83	-$13	-$94
Subtotal, Gross Individual Cuts	*-$3*	*-$3,198*	*-$488*	*-$3,989*
Gross Increases				
Personal Exemption	$0	$1,212	$182	$1,517
Itemized Deductions	$0	$676	$112	$835
Shared Responsibility Payment	$53	$314	$53	$314
Chained CPI	$32	$134	$32	$134
Other	$2	$2	$2	$2
Subtotal, Gross Individual Increases	*$86*	*$2,337*	*$380*	*$2,801*
Subtotal, Individual	***$84***	***-$862***	***-$108***	***-$1,188***
Passthrough	***-$1***	***-$265***	***-$42***	***-$344***

Source: Barro and Furman (2018).

TCJA Changes for Individual Provisions (1/2)

TABLE 1

Prior Law vs. TCJA

2018

	Prior Law					Tax Cuts and Jobs Act				
Individual provisions										
	Taxable Income ($)					Taxable Income ($)				
	Single Filers		Married Couples Filing Jointly		Tax Rate (%)	Single Filers		Married Couples Filing Jointly		Tax Rate (%)
	Over	But not over	Over	But not over		Over	But not over	Over	But not over	
Individual income tax rates	0	9,525	0	19,050	10	0	9,525	0	19,050	10
	9,525	38,700	19,050	77,400	15	9,525	38,700	19,050	77,400	12
	38,700	93,700	77,400	156,150	25	38,700	82,500	77,400	165,000	22
	93,700	195,450	156,150	237,950	28	82,500	157,500	165,000	315,000	24
	195,450	424,950	237,950	424,950	33	157,500	200,000	315,000	400,000	32
	424,950	426,700	424,950	480,050	35	200,000	500,000	400,000	600,000	35
	426,700	and over	480,050	and over	40	500,000	and over	600,000	and over	37
Individual alternative minimum tax	AMT exemption equal to $55,400 (single), $86,200 (joint); Phases out above $123,100 (single), $164,100 (joint)					AMT exemption equal to $70,300 (single), $109,400 (joint); Phases out above $500,000 (single), $1,000,000 (joint)				
Standard deduction	$6,500 (single), $13,000 (joint), $9,550 (head of household); Indexed for inflation					$12,000 (single), $24,000 (joint), $18,000 (head of household); Indexed for inflation; Sunsets after 2025				
Personal and dependent exemptions	$4,150; Indexed for inflation					Repealed; Sunsets after 2025				
Child tax credit	Credit equal to $1,000 per qualifying child under 17; Phases out above $75,000 (single), $110,000 (joint); Refundable portion equals 15% of earnings in excess of $3,000					Credit equal to $2,000 per qualifying child under 17, $500 for other dependents; Phases out beginning at $400,000 for joint filers; Refundable portion equals 15% of earnings in excess of $2,500 up to $1,400 per qualifying child; Maximum refundable portion indexed for inflation; Requires Social Security Number to claim; Sunsets after 2025				
Higher education	American Opportunity Tax Credit; Lifetime Learning Credit; Tuition and Fees Deduction (expired after 2016); Student Loan Interest Deduction					No change				
State and local tax deduction	Real estate, personal property, and either income or sales taxes are deductible					Real estate, personal property and either income or sales taxes up to $10,000 (single and join) are deductible; Sunsets after 2025				
Mortgage interest deduction	Interest payments on up to $1.1 million of debt (including $100,000 of home equity debt) are deductible; Applicable to principle and one other residence					Interest payments on up to $750,000 of new acquisition debt are deductible; Applicable to principle and one other residence; Sunsets after 2025				

Source: Tax Policy Center

TCJA Changes for Individual Provisions (2/2)

	Prior Law	Tax Cuts and Jobs Act
Individual provisions		
Medical expense deduction	Out-of-pocket medical expenses in excess of 10% of AGI are deductible	Out-of-pocket medical expenses in excess of 7.5 percent of AGI are deductible in 2017 and 2018; Reverts to current law in 2019
Overall limit on itemized deductions	Itemized deduction phases out starting at AGI of $266,700 (single), $320,000 (joint); Amounts indexed for inflation	Repealed; Sunsets after 2025
Top capital gains rate	23.8% (20% plus 3.8% Net Investment Income Tax)	Rate unchanged, but based on income levels rather than brackets; Change in determination of applicable capital gains rate sunsets after 2025
Inflation index	Consumer Price Index (CPI)	Chain-weighted consumer price index (C-CPI)
Estate tax	Top rate of 40% on estates above $5.6 million (single), $11.2 million (joint); Indexed for inflation	Top rate of 40% on estates above $11.2 million (single), $22.4 million (joint); Indexed for inflation; Sunsets after 2025
ACA individual mandate penalty	Individuals without adequate health insurance coverage must pay a tax penalty or claim a coverage exemption	Penalty set to zero
Business Provisions		
Income from pass-through businesses	Taxed at ordinary income rates (maximum rate of 39.6%)	Provides 20% deduction (maximum rate of 29.6%); Deduction limited above $157,500 (single), $315,000 (joint) for personal service income and based on compensation paid or investment property; Sunsets after 2025
Top corporate income tax rate	35%	21%
Corporate alternative minimum tax	Yes	Repealed
New investment purchases	2018: 40% bonus depreciation for qualified property; 2019: 30% bonus depreciation for qualified property; 2020: 20% bonus depreciation for qualified property; Small business (section 179) expensing up to $500,000	2018: 40% bonus depreciation for qualified property; 2019: 30% bonus depreciation for qualified property; 2020: 20% bonus depreciation for qualified property; Small business (section 179) expensing up to $500,000
Business interest deduction	Fully deductible (generally)	Disallowed for net interest in excess of 30% of business income (excluding depreciation after 2022); Exemption for businesses with gross receipts of $25 million or less
Taxation of US multinational companies	Worldwide system with deferral and foreign tax credit	Modified territorial system with base erosion provisions; Anti-abuse tax on certain payments to foreign corporations; One-time tax on unrepatriated foreign earnings at 8% (15.5% for liquid assets)

Source: H. R. 1—a Bill to Provide for Reconciliation Pursuant to Titles II and V of the Concurrent Resolution on the Budget for Fiscal Year 2018.
(a) Provisions revert to current law in 2026. Inflation-indexed tax parameters are computed using chain-weighted consumer price index.
TCJA = Tax Cuts and Jobs Act; ACA = Affordable Care Act; AGI = Adjusted Gross Income

Source: Tax Policy Center.

Future Individual Tax Reform

Some options to raise revenue:

- Raising revenue outside of tax expenditures
- Raising revenue via limiting specific tax expenditures
- Raising revenue via limiting tax expenditures across the board
- A new tax on imputed income from wealth?
- Changes to capital gains + dividend taxes
- Other steps

How much revenue from raising rates by group?

Cash Income Percentile (2019 Income Threshold)	Average Federal Tax Rate (2019)	Total Income (2019-28) (Billions $)	Revenue Raised by 5pp Increase in ATR (2019-28) (Billions $)
Lowest Quintile	3.0	8,280	414
Second Quintile ($25,500)	7.6	17,625	881
Middle Quintile ($50,000)	12.4	29,198	1,460
Fourth Quintile ($87,300)	15.7	42,693	2,135
Top Quintile ($157,900)	23.4	108,883	5,444
80-90 ($157,900)	18.7	29,488	1,474
90-95 ($229,900)	20.2	20,518	1,026
95-99 ($334,900)	22.6	26,716	**1,336**
Top 1 Percent ($738,300)	30.2	32,231	**1,612**
Top 0.1 Percent ($3,452,300)	31.3	15,712	786
All	**18.2**	**206,789**	**10,339**

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0718-1). Table T18-0060.

Source: Lily Batchelder.

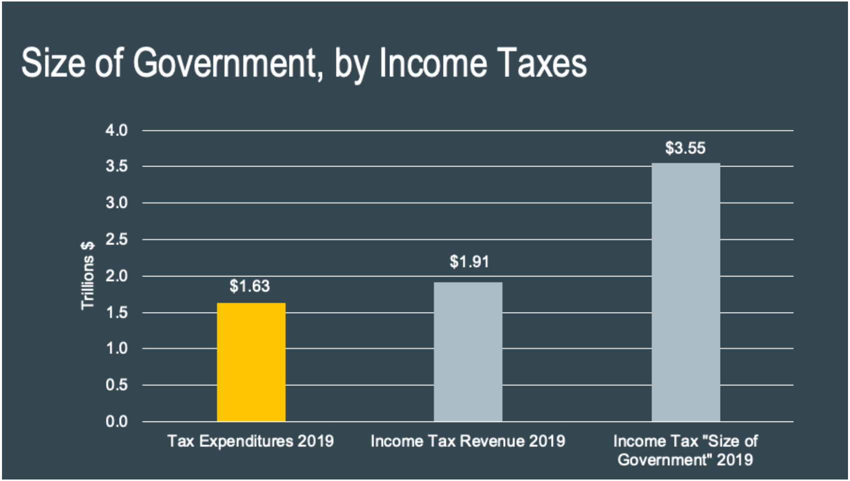
Other options

Option	Revenue Raised / 10 Years (Billions $)
Raise ordinary rates by 2 percentage points	
All	$1,468
Above $90K / 150K	$302
Above $415K	$186
Raise capital gain and dividend rates by 2 percentage points	$57
30% minimum tax above $1 million in AGI	$66
Increase payroll tax	
Increase Medicare HI tax by 2 percentage points	$1,646
Apply Social Security tax above $250K	$1,010
Repeal NIIT/SECA gaming	
Apply NIIT to all active participants	$160
Apply SECA to all material participants	$137
Increase funding for IRS enforcement (including indirect effects)	$18 per $1 increase

Source: CBO, Options for Reducing the Deficit: 2017 to 2026 (2016); President's Budget, FY2017.

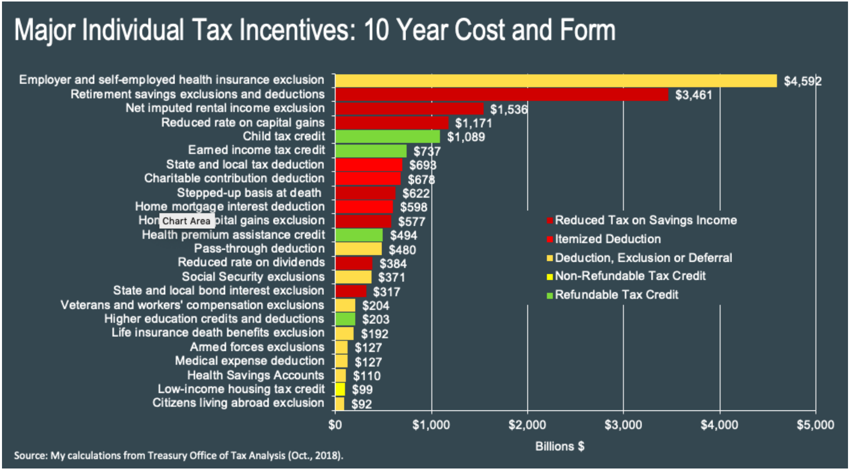
Source: Lily Batchelder.

Tax expenditures



Source: Lily Batchelder.

Tax expenditures by type



Source: Lily Batchelder.

Capping Tax Expenditures Globally

- TCJA limited specific expenditures: e.g., state and local tax, mortgage interest
- Globally capping expenditures may generate less pushback than cutting individual tax expenditures
  - Capping the level of tax expenditures
  - Capping expenditures as a share of income (e.g., Feldstein, Feenberg, & MacGuineas, 2011)
  - Capping the marginal tax rate at deductions and exclusions are claimed (e.g. 24%)
- Global caps do less to decrease tax complexity than outright removal of tax expenditures

What about a wealth tax?

A PROGRESSIVE WEALTH TAX ON INDIVIDUALS

Tax on wealthiest 1% with progressive rates

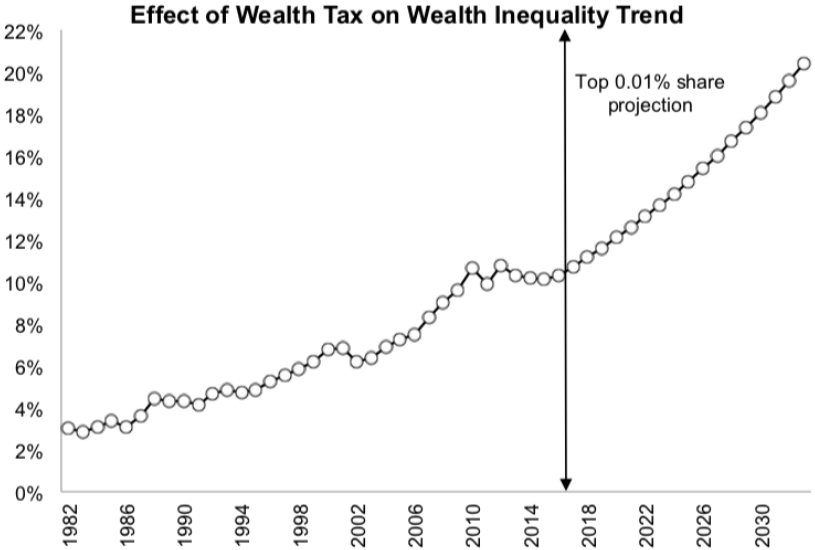
Fairness: Tax ensures that individuals with large wealth but low realized incomes pay significant taxes (e.g. Bezos, Buffett)

Bending the inequality curve: Top .01% wealth has grown 6.7%/year while average wealth has grown 2.5%/year in 1980-2016 $\Rightarrow$ Progressive wealth tax can help close this gap

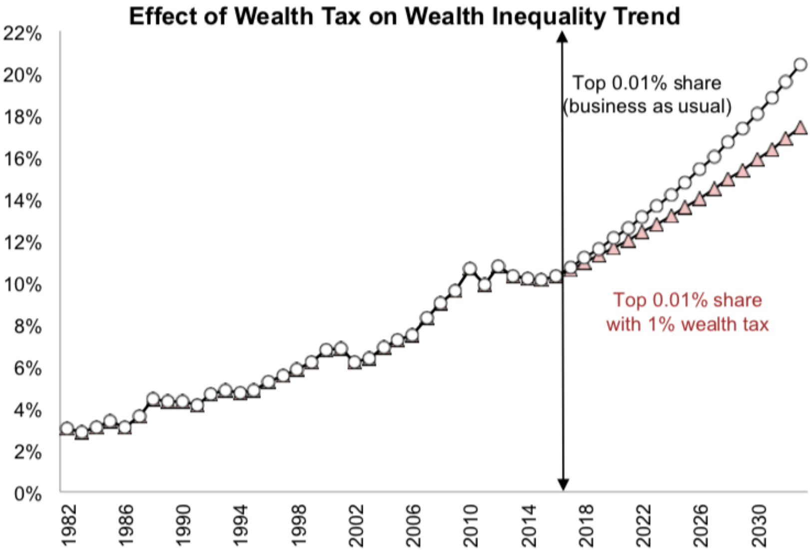
Short-term Revenue: A moderate wealth tax closing 1/4 of wealth growth gap would raise $113bn/year

Administration: Modern information and financial technologies make it possible to value all assets at low cost

What about a wealth tax?



What about a wealth tax?



What are some limitations?

1) Impact on savings and aggregate K stock:

$\Rightarrow$ Middle class savings should be encouraged (financial regulation, retirement savings incentives, sovereign fund) to maintain aggregate capital stock

2) Impact on entrepreneurship:

$\Rightarrow$ Tax on capital happens late after success: better to provide incentives early on when entrepreneurs are not yet wealthy

3) Impact on top talent migration:

$\Rightarrow$ Immigration policy (students and high skill visas) likely much more powerful

Source: Emmanuel Saez.

Taxing capital gains and dividends

Static Tax Benefit of Rate Preference for Capital Gains + Dividends

Static Tax Benefit of Preferential Rates on Capital Gains and Dividends (Billions of $, 2018)			
	Capital Gains	Dividends	Total
Lowest Quintile	$0	$0	$0
Second Quintile	$0	$0	$1
Middle Quintile	$2	$1	$3
Fourth Quintile	$3	$3	$6
Top Quintile	$102	$30	$132
All	$107	$34	$141
Addendum			
80-90	$3	$2	$4
90-95	$4	$2	$5
95-99	$11	$5	$16
Top 1 Percent	$85	$21	$106
Top 0.1 Percent	$69	$15	$84

Source: Author's calculations based on Tax Policy Center Tables T18-0183; T17-0082.

This is not even including benefit of step up in basis and deferral under realization rule.

Source: David Kamin.

Issue with taxing capital gains and dividends

Elasticities and Revenue Maximizing Capital Gains Rate

Revenue Maximizing Rates and Revenue Gain Under JCT/Treasury Assumptions
(Very Approximate)

	Approx. Elasticity of Realizations at Current Top Rate	Revenue Maximizing Rate	Rev Gain in 2018 from Move to Rev Maximizing Rate for Top 1% on Cap Gain
Joint Committee on Taxation	0.74	32.3%	$5
Treasury	0.77	30.8%	$4
Static Gain from Increasing to 37% on Top 1%	N/A	N/A	$85

Note: These calculations are done based on reports of the semi-elasticity used by Treasury and JCT (to Jane Gravelle) of capital gains realizations. The coefficient is a fixed estimate that, multiplied by the tax rate, equals the elasticity of capital gains realizations. Gravelle reported a semi-elasticity of 3.1 for JCT and 3.25 for Treasury.

Source: Author's calculations based on TPC Table T18-0183 and T17-0082 and and Jane Gravelle, CRS, "Capital Gains Tax Options: Behavioral Responses and Revenues," 2010.

- *These behavioral responses are taken into account in traditional scoring ("microdynamic").*
- *Conclusion that ordinary rates above rev maximizing point and raising rates would generate little additional revenue has had significant influence on policy debate in Washington.*

Source: David Kamin.

Other options

Some other options to raise revenue:

- Step up in basis: Either carryover or realization at death.
- Mark-to-market (at least for publicly traded).
- Realization based system with deferral charge (can be combined with mark-to-market).

Outline

1. Motivation
2. Policy
   - Federal US income tax policy (pre-TCJA)
   - State and local tax deduction
   - Mortgage interest deduction
   - Pass-throughs, taxes, and inequality
   - Recent top income tax reforms (pre-TCJA)
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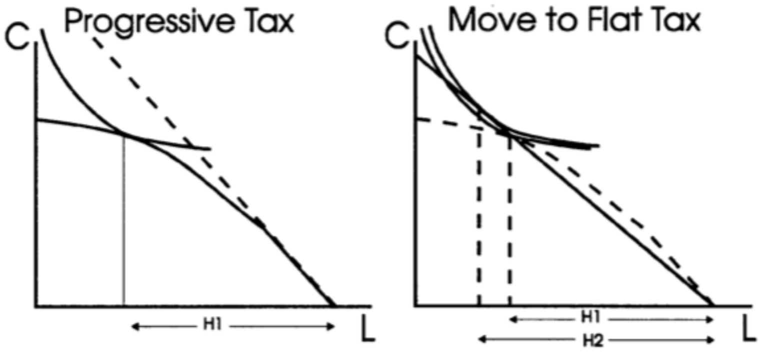
4. Evidence
   - Empirical estimation of e and identification issues
   - Evidence from Zidar (2018) "Tax cuts for whom?"

Progressive income tax distorts consumption-leisure choices



A key question: how much do hours of work (H_2 vs H_1) increase when tax schedule becomes flatter?

How progressive should labor income tax be?

What is the optimal degree of tax progressivity when households economic outcomes are determined by their initial ability, partially insurable wage shocks, taste for work, and human capital investment?

- Argument in favor of progressivity: missing markets
  - Social insurance of privately-uninsurable lifecycle shocks
  - Redistribution with respect to unequal initial conditions
- Argument against progressivity: distortions
  - Labor supply
  - Human capital investment
- Another consideration - fiscal externality
  - Financing of public good provision

Source: Heathcote Storesletten Violante (QJE, forthcoming)

An answer from Heathcote Storesletten Violante

Three lessons on optimal progressivity

1. The endogeneity of the skill distribution limits optimal progressivity
   - Key: skill-complementarity in production (θ), price-elasticity of skill investment (ψ), alterability of past skill choices
2. The externality in the provision of public goods limits progressivity
   - Low progressivity induces higher labor supply, output, and G
3. Age-dependent progressivity delivers large welfare gains
   - Low progressivity at young ages induces skill investment
   - High progressivity at old ages redistributes against shocks

Source: Heathcote Storesletten Violante (QJE, forthcoming)

Saez and Diamond JEP 2011

OPTIMAL TOP INCOME TAX RATE
(Diamond and Saez JEP'11)

In practice, individual income tax is progressive with brackets with increasing marginal tax rates. What is the optimal top tax rate?

Consider constant MTR τ above fixed z^*. Goal is to derive optimal τ

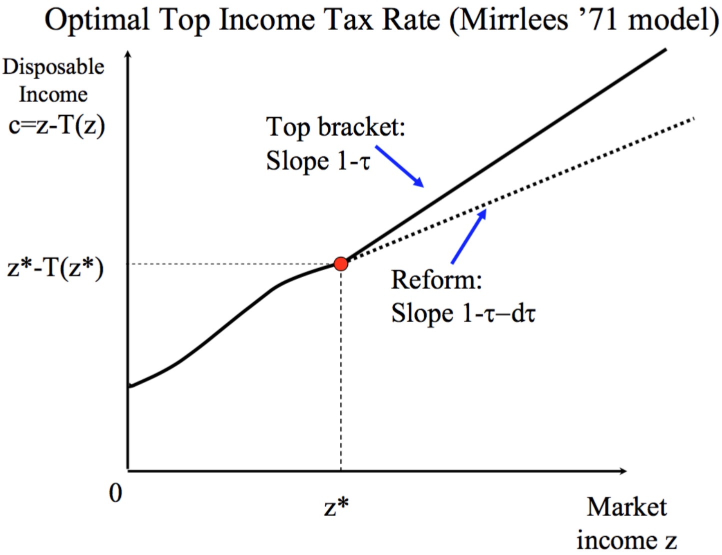
In the US in 2016, $\tau = 39.6\%$ and $z^* \simeq \$500,000$ ($\simeq$ top 1%).

Denote by z average income of top bracket earners [depends on net-of-tax rate $1-\tau$], with elasticity $e = [(1-\tau)/z] \cdot dz/d(1-\tau)$

Suppose the government wants to maximize tax revenue collected from top bracket taxpayers (marginal utility of consumption of top 1% earners is small)

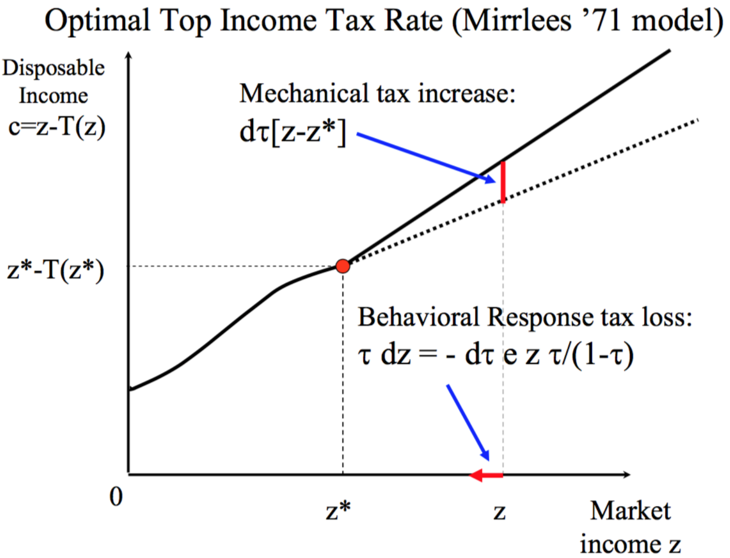
Source: Saez and Diamond (JEP, 2011).

Saez and Diamond JEP 2011



Source: Diamond and Saez JEP'11

Saez and Diamond JEP 2011



OPTIMAL TOP INCOME TAX RATE

Consider small $d\tau > 0$ reform above z^*.

1) **Mechanical increase** in tax revenue:

$$dM = [z - z^*]d\tau$$

2) **Behavioral response** reduces tax revenue:

$$dB = \tau dz = -\tau \frac{dz}{d(1-\tau)} d\tau = -\frac{\tau}{1-\tau} \cdot e \cdot z \cdot d\tau$$

$$dM + dB = d\tau \left\{ [z - z^*] - e\frac{\tau}{1-\tau} z \right\}$$

Optimal τ such that $dM + dB = 0$

$$\Rightarrow \quad \frac{\tau}{1-\tau} = \frac{1}{e} \cdot \frac{z - z^*}{z} \Rightarrow \tau = \frac{1}{1 + a \cdot e} \quad \text{with} \quad a = \frac{z}{z - z^*}$$

Source: Saez and Diamond (JEP, 2011).

Saez and Diamond JEP 2011

OPTIMAL TOP INCOME TAX RATE

Optimal top tax rate: $\tau = \dfrac{1}{1 + a \cdot e}$ with $a = \dfrac{z}{z - z^*}$

Optimal τ decreases with e [efficiency]

Optimal τ decrease with a [thinness of top tail]

Empirically $a \simeq 1.5$, easy to estimate using distributional data

Empirically e is harder to estimate [controversial]

Example: If $e = .25$ then $\tau = 1/(1{+}1.5{\cdot}0.25) = 1/1.75 = 73\%$

Source: Saez and Diamond (JEP, 2011).

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Basic empirical strategy

- Assume:
  - No income effects on reported income
  - Immediate and permanent response to tax rates
  - e constant over time and uniform across individuals at all income levels
  - Individuals have perfect knowledge of the tax structure and choose z_{it} after they know z_{it}^0 exactly
- In year t, i individual reports income z_{it} and faces $\tau_{it} = T'(z_{it})$. Reported income $z_{it} = z_{it}^0(1 - \tau_{it})^e$, where e is ETI and z_{it}^0 is income reported when $\tau_{it} = 0$ (i.e., potential income)
- We can estimate e using

$$\log z_{it} = e \log(1 - \tau_{it}) + \log z_{it}^0$$

- The last equation cannot be identified using OLS if τ is correlated with income z_{it}^0, so need to instrument τ_{it}

Share Analysis

Estimating ETI using 2+ years/periods of data

- Assume that no tax change for individuals outside the top groups
- Estimate elasticity of reported income around a tax reform episode, where t_0 and t_1 are pre- and post-reform years

$$e = \frac{\log s_{t_1} - \log s_{t_0}}{\log(1 - \tau_{s,t_1}) - \log(1 - \tau_{s,t_0})}$$

  - s_t: share of income accruing to the top 1% earners in t
  - $\tau_{s,t}$: income-weighted avg marginal tax rate faced by taxpayers in this income group in t
- Identification assumption: Absent the tax change, the share would have remained constant from year t_0 to t_1 (on average)
- Using full time series: estimate a time-series regression of the form

$$\log s_t = e \log(1 - \tau_{s,t}) + \varepsilon_t$$

Saez (TPE, 2017) "Taxing the Rich More"

METHODOLOGY

Question: How are top incomes affected by the 2013 reform?

Simplest and most transparent method is to analyze top income shares and their composition (Saez TPE '04)

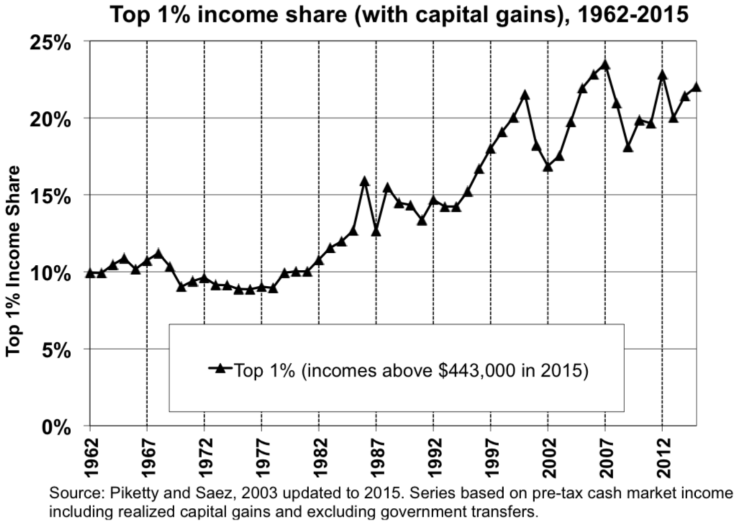
Analysis can be done with timely public SOI tabulated data

My view: panel methods of Feldstein JPE'95, Gruber-Saez JpubE'02 are much less transparent and robust

Micro-data useful to refine analysis along specific dimensions

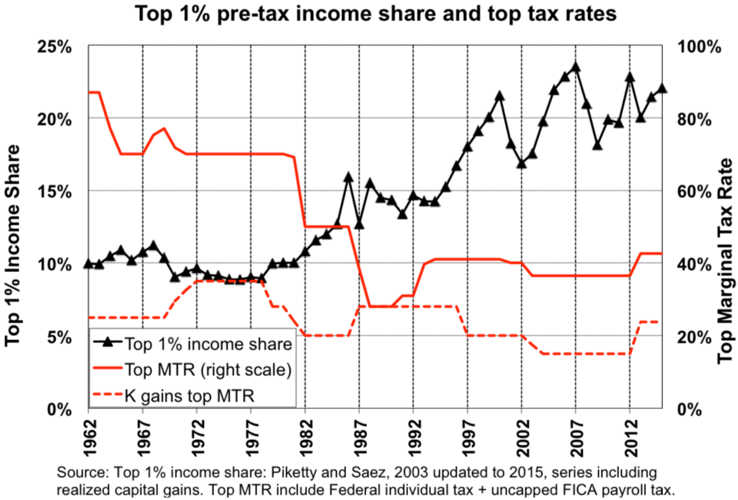
Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Use a share analysis



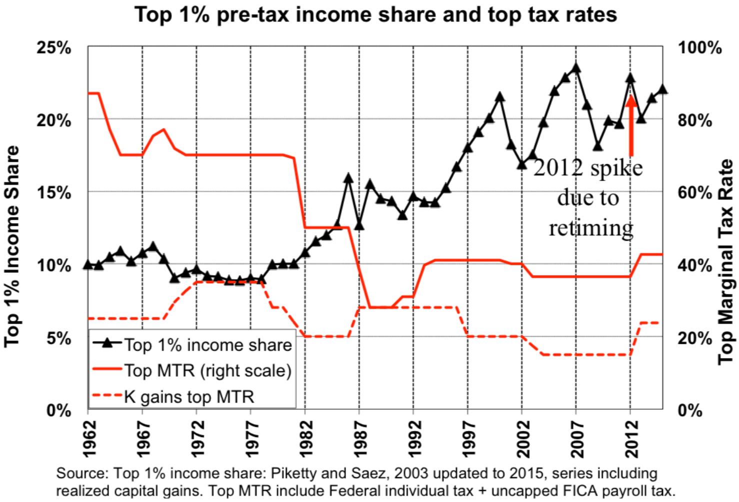
Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Relate share changes to 2013 tax rate changes



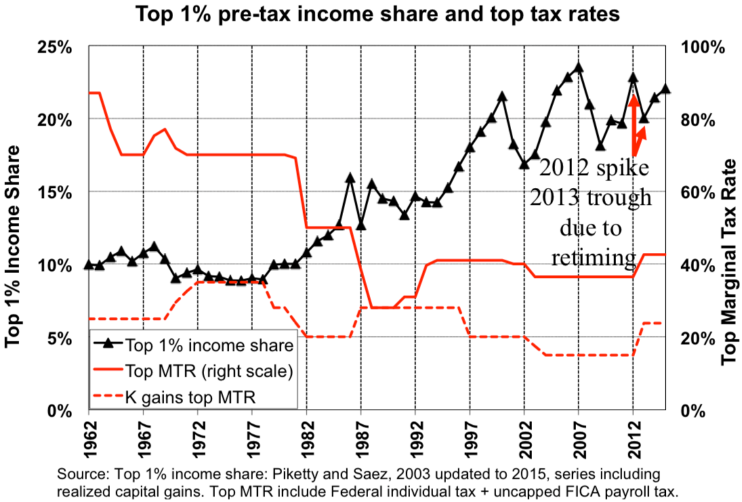
Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Shifting

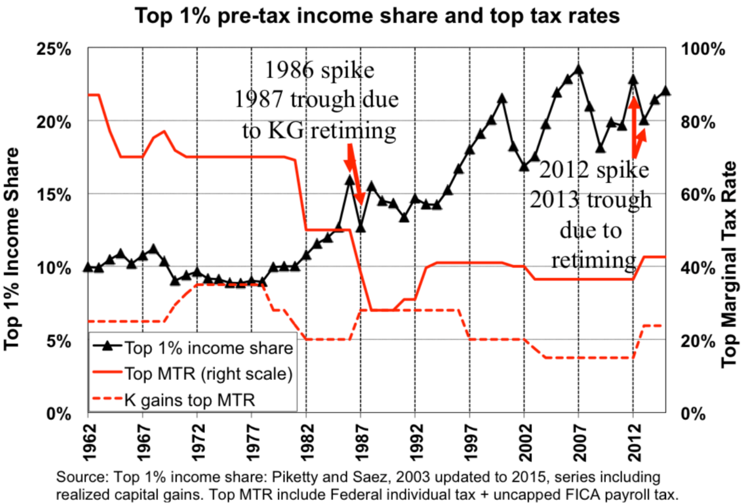


Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Shifting

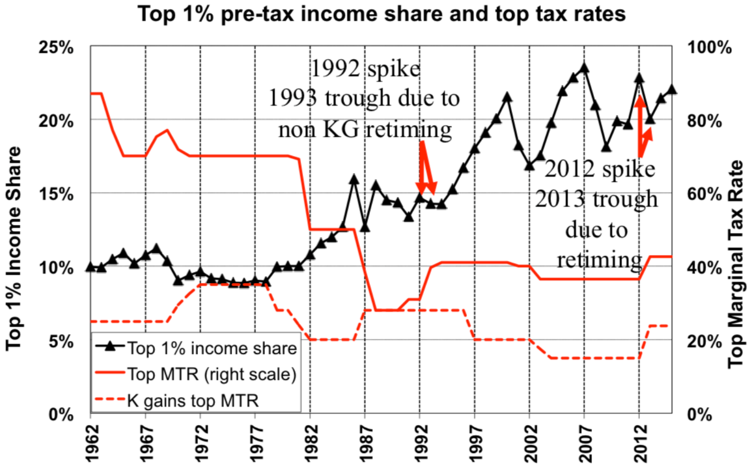


Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"



Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

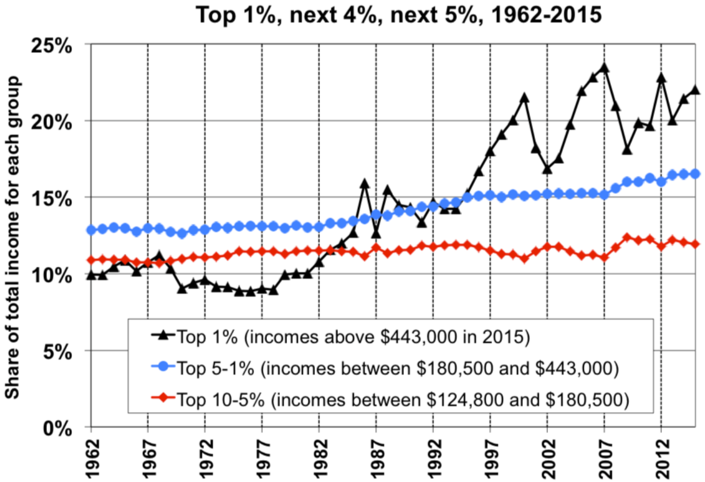
Shifting



Source: Top 1% income share: Piketty and Saez, 2003 updated to 2015, series including realized capital gains. Top MTR include Federal individual tax + uncapped FICA payroll tax.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

A control group?



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Standard share analysis

SHORT-TERM ELASTICITY ESTIMATION

$$e_S = \frac{\Delta \log sh}{\Delta \log(1 - MTR)} = \frac{\log sh_{2013} - \log sh_{2012}}{\log(1 - MTR_{2013}) - \log(1 - MTR_{2012})}$$

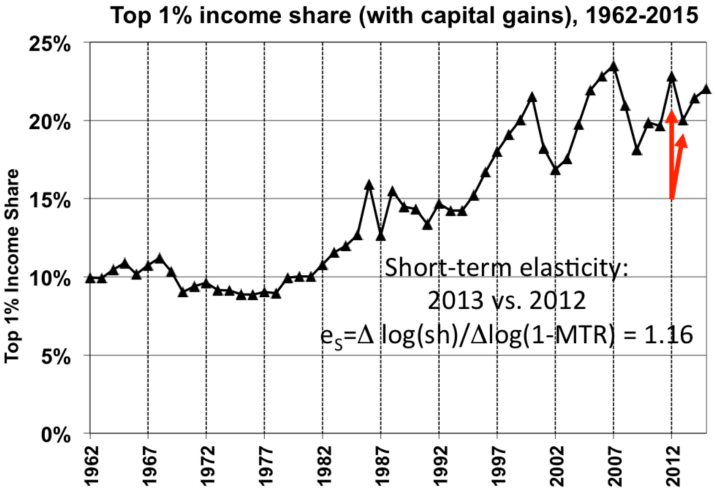
where sh_t is top income share and MTR_t is the average MTR for top group in year t

Identification assumption: absent tax change, $sh_{2013} = sh_{2012}$ [retiming spike is big relative to top income share trend]

This slightly underestimates e_S as there is an overall upward trend in top income shares (in opposite direction to retiming)

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

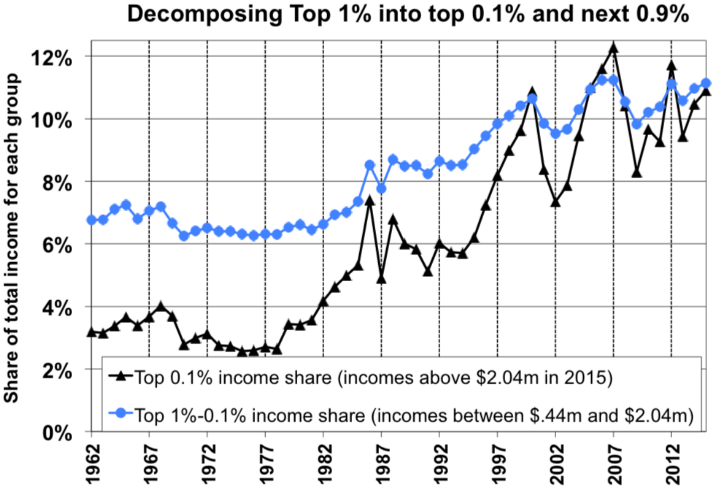
Elasticity estimate with shifting



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

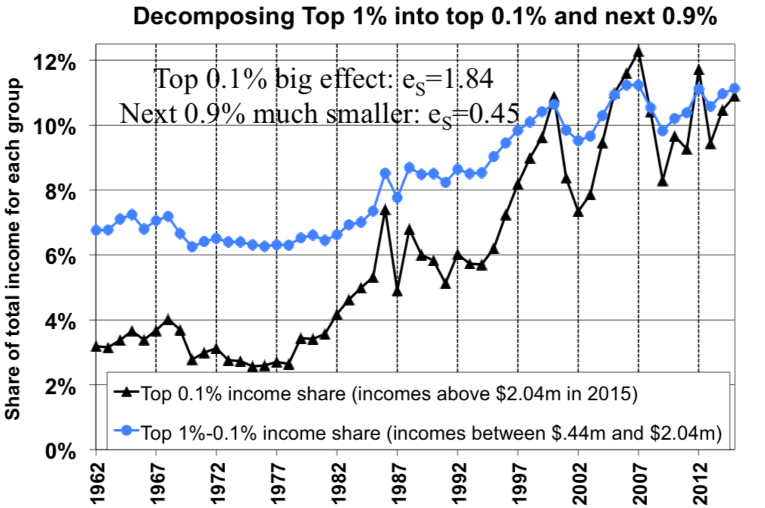
Shares by income group



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Elasticity estimate with shifting for top 1% to top 0.1%



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Elasticity estimate with shifting by income group

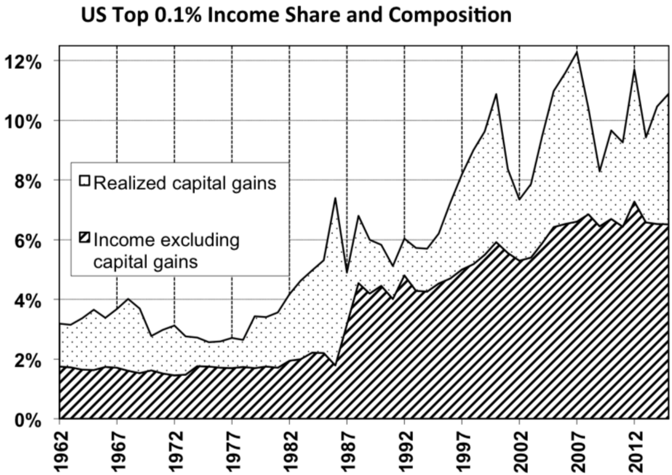
2. Short-run Elasticity e_S Comparing 2012 and 2013 Top Incomes

	Top Income Groups		
	Top 1%	Top 1-.1%	Top .1%
A. Elasticity Computation			
Top income share in 2012	22.8%	11.1%	11.7%
Top income share in 2013	20.0%	10.6%	9.4%
Log change in top income shares 2012 to 2013	-13.2%	-5.0%	-21.7%
Net-of-tax rate in 2012	67.8%	65.2%	70.7%
Net-of-tax rate in 2013	60.5%	58.4%	62.9%
Log change in net-of-tax rate 2012 to 2013	-11.4%	-11.1%	-11.8%
Elasticity of income wrt net-of-tax rate	1.16	0.45	1.84

This table presents the short-run elasticity estimates e_S of reported income with respect to one minus the marginal tax rate comparing 2012 and 2013 top incomes.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Income composition



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains, and always excluding government transfers.

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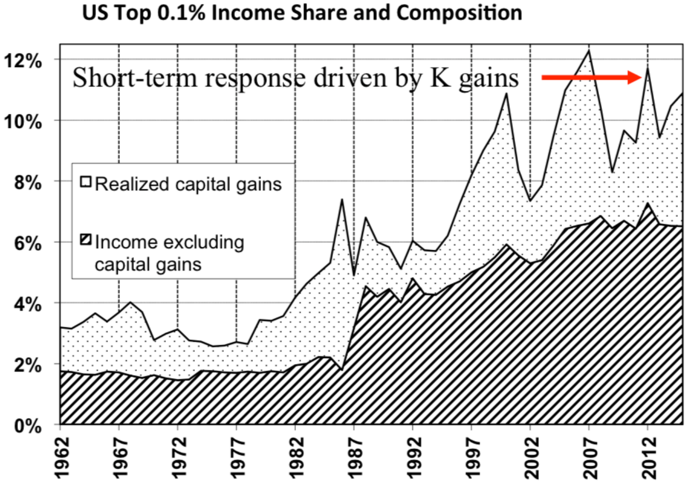

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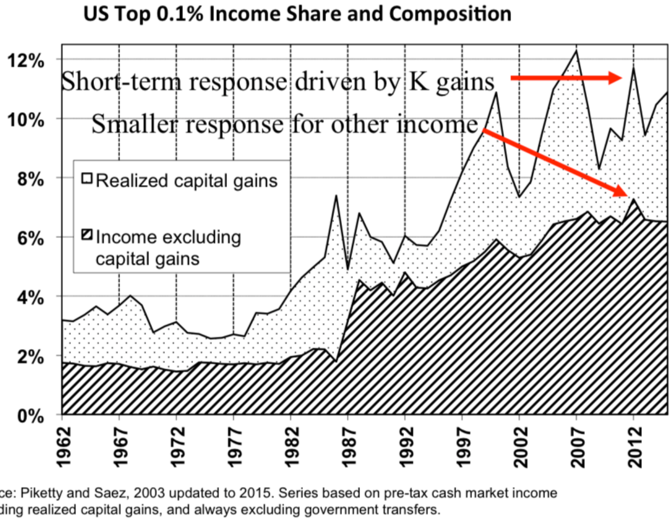

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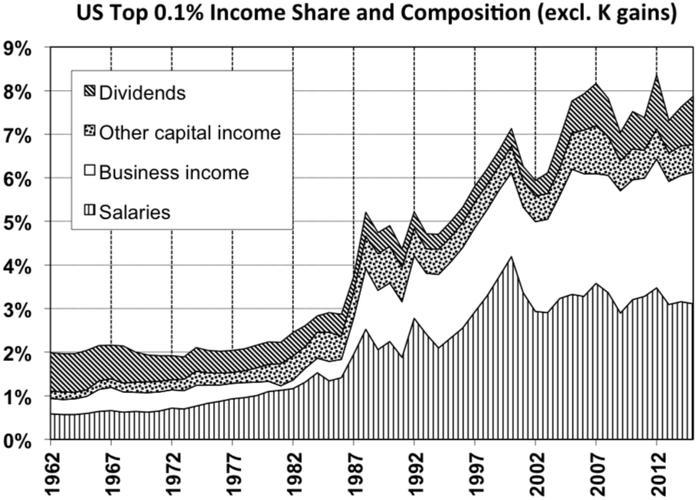

Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income ex cluding realized capital gains, and always excluding government transfers.

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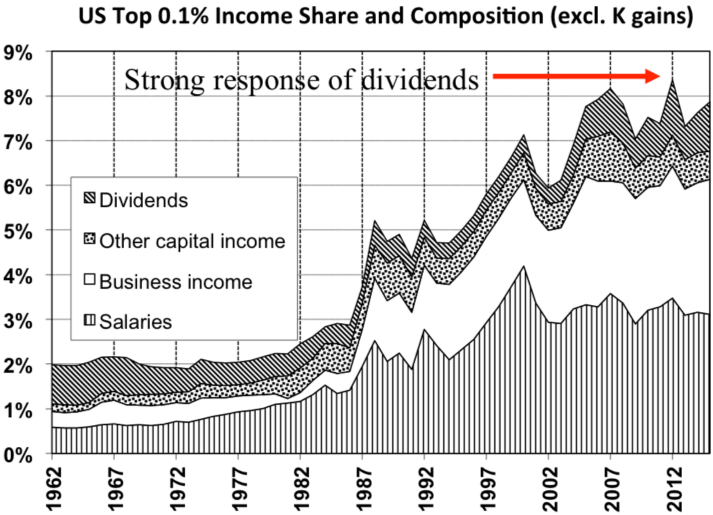

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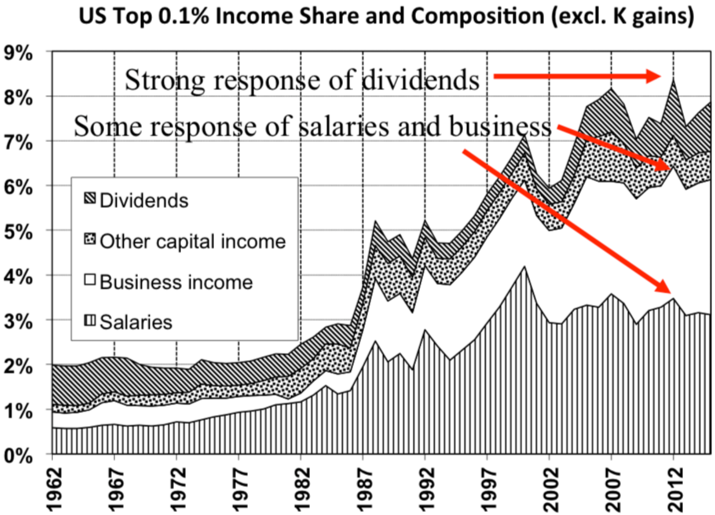

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Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Income composition

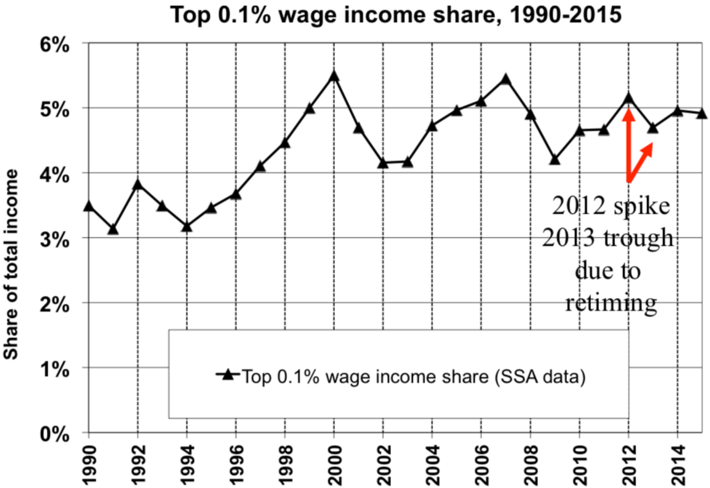
2. Short-run Elasticity e_S Comparing 2012 and 2013 Top Incomes

	Top Income Groups		
	Top 1%	Top 1-.1%	Top .1%
C. Elasticity of Each Income Component			
Total income including realized capital gains	1.16	0.45	1.84
Realized capital gains	3.16	1.96	3.53
Income excluding realized capital gains	0.73	0.37	1.19
Wages, Salaries, and Pensions	0.44	0.13	1.09
Business income	0.55	0.71	0.41
Ordinary capital income	1.59	0.85	1.99
Dividends	3.19	1.46	4.01
Interest, rents, royalties, fiduciaries	0.42	0.54	0.34

This table presents the short-run elasticity estimates e_S comparing 2012 and 2013 for each income component. Computations are based on the composition of top incomes from Piketty-Saez series.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

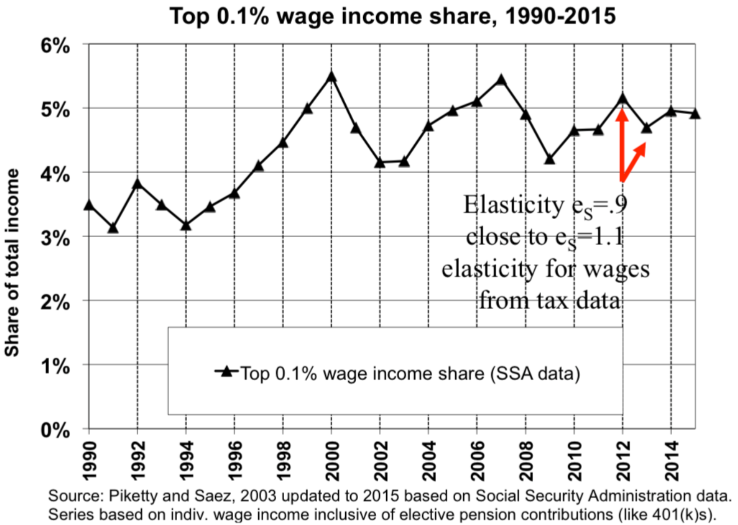
Income composition



Source: Piketty and Saez, 2003 updated to 2015 based on Social Security Administration data.
Series based on indiv. wage income inclusive of elective pension contributions (like 401(k)s).

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Income composition



Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Medium-term elasticity

MEDIUM-TERM ELASTICITY ESTIMATION

$$e_M = \frac{\Delta \log sh}{\Delta \log(1 - MTR)} = \frac{\log sh_{2015} - \log sh^c_{2015}}{\log(1 - MTR_{2015}) - \log(1 - MTR_{2011})}$$

where sh^c_{2015} is counterfactual top share absent the reform

Difficult identification assumption: Is $sh^c_{2015} = sh_{2011}$?

Upward trend in top income share absent tax change likely:

a) secular increase [top 1% ↑ 0.32 pts/year in 1978-2011]

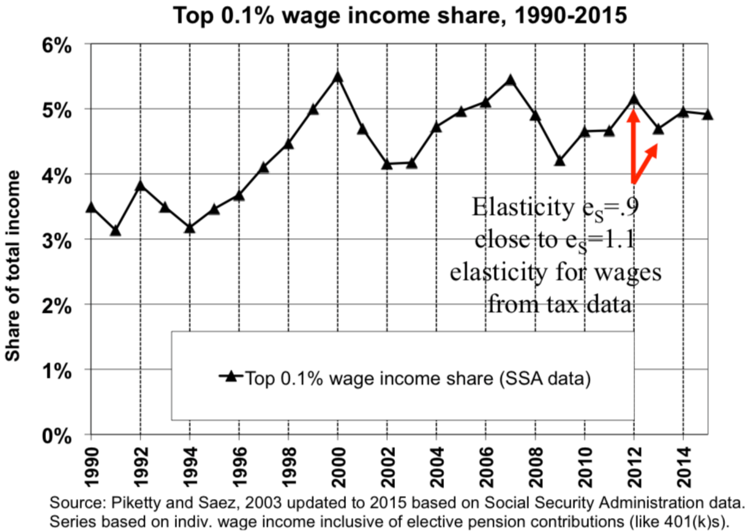
b) fast recovery trend after Great Recession [top 1% ↑ 0.76 pts/year in 2009-2011]

Assumption: assume same trend over 2011-5 as over 2009-11

$$\Rightarrow sh^c_{2015} = sh_{2011} + (2015 - 2011) \times (sh_{2011} - sh_{2009})/2$$

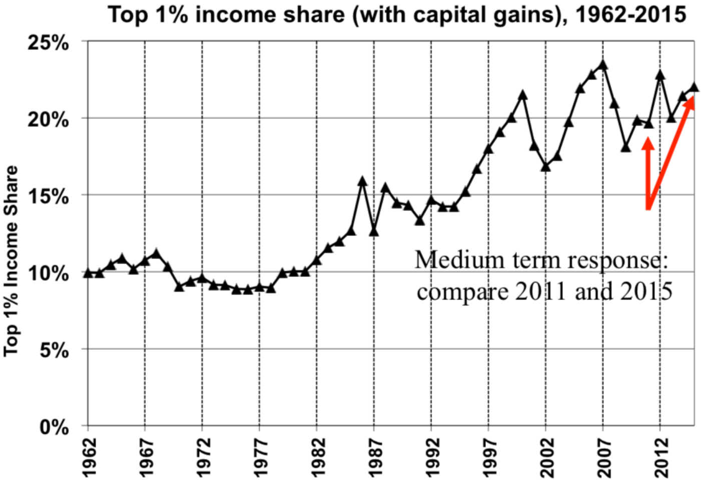
Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Income composition



Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Which trend?



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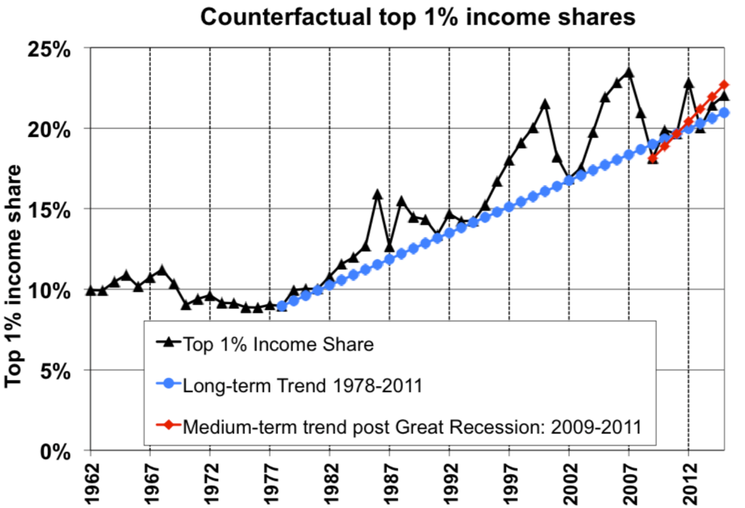
Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Which trend?



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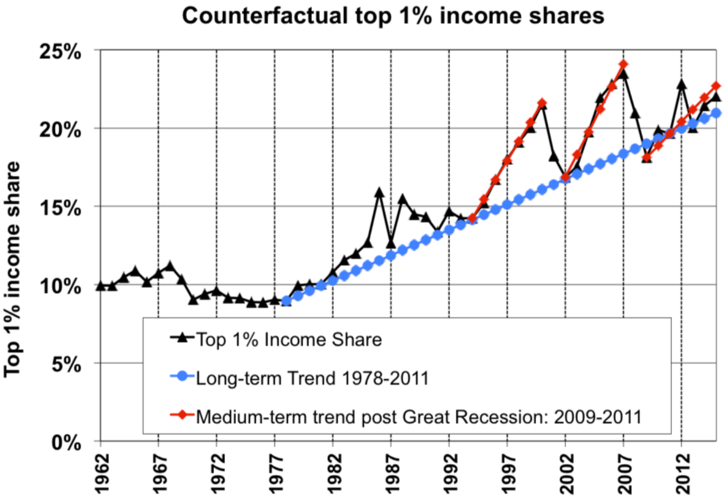

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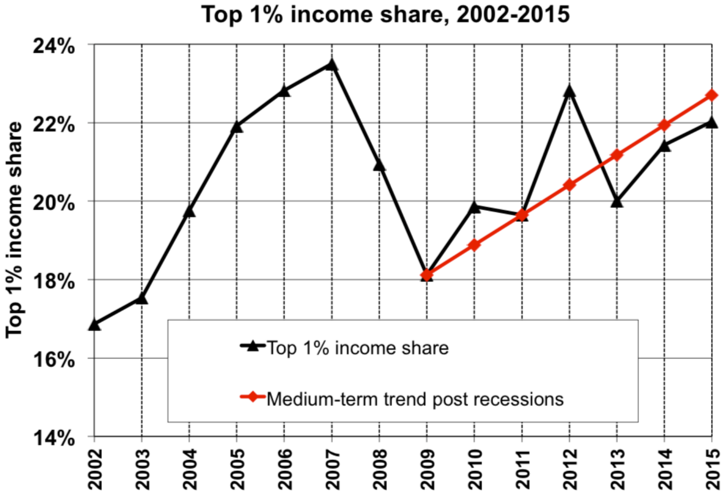
Which trend?



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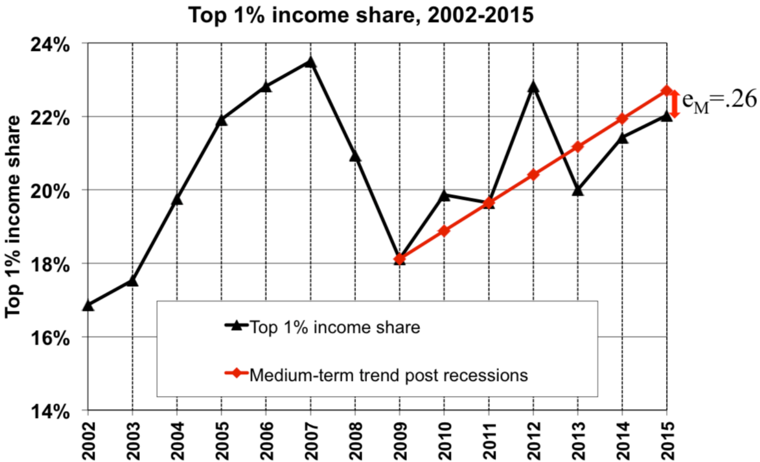
Implied elasticity depends on trend



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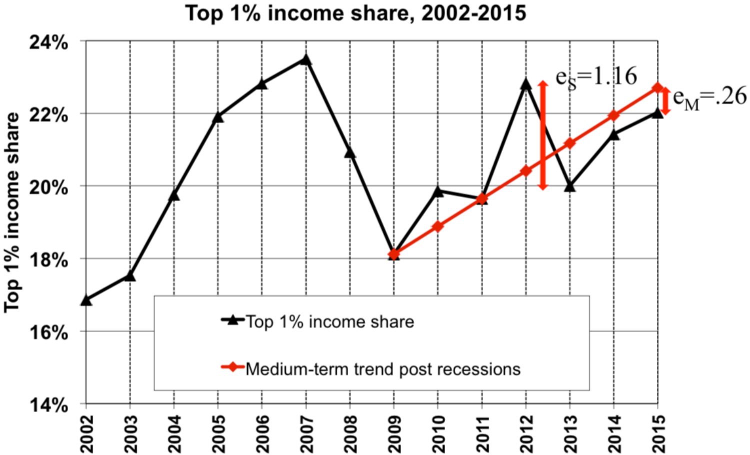
Implied elasticity depends on trend



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Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Medium-term elasticity estimates

3. Estimates for the Medium-run Elasticity e_M

	Top Income Groups		
	Top 1%	Top 1-.1%	Top .1%
A. Comparing 2011 and 2015 Top Incomes			
Elasticity for income incl. K gains	0.26	0.29	0.24
Elasticity for income excl. K gains	0.32	0.39	0.22
B. Comparing 2011 and 2014 Top Incomes			
Elasticity for income incl. K gains	0.21	0.21	0.20
Elasticity for income excl. K gains	0.33	0.34	0.31

This table presents the medium-run elasticity estimates e_M comparing 2011 and 2015 incomes in Panel A and 2011 and 2014 incomes in Panel B. We assume that, absent the tax change, top income shares would have increased at the same rate as the medium-term post Great Recession increase from 2009 to 2011.

Source: Saez (TPE, 2017) "Taxing the Rich More: Evidence from the 2013 Tax Increase"

Medium-term elasticity estimates

These estimates have implications for top rate

$$\tau^* = \frac{1}{1 + ae}$$

When $a = 1.5$,

- If $e = .25$, then $\tau^* = .73$
- If $e = .5$, then $\tau^* = .57$
- If $e = 1$, then $\tau^* = .40$

Differences-in-Differences estimation

- Let T be the group affected by the tax change (e.g., the top 1%) and C the control group
- Estimate the equation

$$\log z_{it} = \alpha_0 1(Post_{it}) + \beta_0 1(i \in T) + \beta_1 1(Post_{it} \times 1(i \in T)) + \varepsilon_{it}$$

- Control, pre: 0
- Control, post: α_0
- Difference: α_0
- Treat, pre: β_0
- Treat, post: $\alpha_0 + \beta_0 + \beta_1$
- Difference: $\alpha_0 + \beta_1$
- Difference in difference: β_1

Then need to relate β_1 to size of tax change to get e

Summary of empirical evidence of ETI

	e	Estimation
Feldstein (1995)	1-3	Tabulated diff-in-diff, OLS. The difference in the % change in taxable income between T and C is divided by the difference in the % change in the average net-of-tax-rate between T and C.
Auten and Carroll (1999)	0.55	2SLS, regress change in log AGI between 1985 and 1989 against change in log net-of-tax rate. Instrument for change in net-of-tax rate by inflating adjusted 1985 incomes by the CPI to 1989 levels and then applying 1989 law to these incomes.
Moffitt and Wilhelm (2000)	0.35-0.97	Moffitt and Wilhelm calculate e using Feldstein's (1995) approach, which yields e rom 1.76 to 1.99, and a 2SLS regression approach, employing alternative instruments for the change in the net-of-tax rate. Those instruments that are successful yield $e \in [0.35, 0.97]$.
Gruber and Saez (2002)	0.17 (broad income of top earners)	2SLS. Instrument for the change in the net-of-tax rate using an instrument very similar to that used by Auten and Carroll (1999). They also construct an analogous instrument for capturing the income effect, the log change in after-tax income assuming that base year income grows at the same rate as total income.
Kopczuk (2005)	0.12 (no deductions) and 1.06 (deductible-share interaction term)	Investigates the hypothesis that the ETI is not a structural parameter. Includes instrumented changes in marginal tax rates and an interaction term between the change in tax rate and change in tax base.
Giertz (2007)	0.12-0.30, depending on years included	Methods of Gruber and Saez (2002) to larger panel data sets of tax returns from 1979 to 2001. Results vary if using taxable vs. broad income.

Explaining empirical findings

- No reason to expect a universal parameter:
  - Kopczuk (2002) argues that the ETI is a function of preferences and the breadth of the tax base and tax enforcement)
  - Giertz (2007): elasticity w.r.t. taxable income varies much more by decade than the elasticity w.r.t. broad income $\rightarrow$ changing rules for deductions affects the taxable income elasticity
- Methodological issues drive the differences between decades:
  - Model is unable to adequately control for exogenous income trends $\rightarrow$ non-tax-related aspects of income inequality trend could bias ETI estimates upward when top tax rates fall and downward when they rise
  - Models fail to capture important types of income shifting, such as the shifting between the corporate and individual income tax base

A classic debate

There are two ideas of government. There are those who believe that if you just legislate to make the well-to-do prosperous, that their prosperity will leak through on those below. The Democratic idea has been that if you legislate to make the masses prosperous their prosperity will find its way up and through every class that rests upon it.

—William Jennings Bryan (July, 1896)

Two views

Consequences of changing tax policy for different groups are fiercely debated

1. Tax changes for high income earners "trickle down" and are the most effective way to affect prosperity
   - Higher marginal tax rates for top-income taxpayers lead to large distortions in labor supply, investment, and hiring, so tax cuts for top-income taxpayers most effectively increase aggregate economic activity.

2. Others contend the opposite
   - Lower-income groups have higher marginal propensities to consume and disincentives to work from means-tested benefits, so tax cuts for lower-income groups generate sizable consumption and labor supply responses, and thereby, more overall activity

Source: Zidar (2018)

Research Question

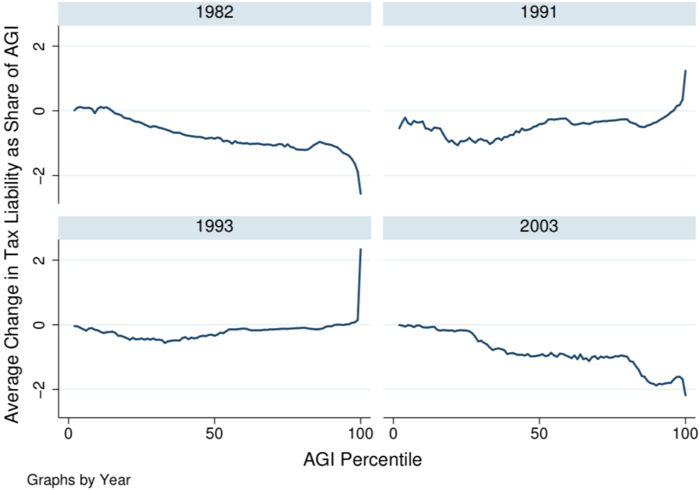
Question:

- Do tax changes for high-income earners "trickle down?"
- Would these effects be larger if the tax changes were less targeted at the top?

Variation in income tax policy in the U.S. can help us answer these questions and inform this debate

Source: Zidar (2018)

Tax changes for each income percentile



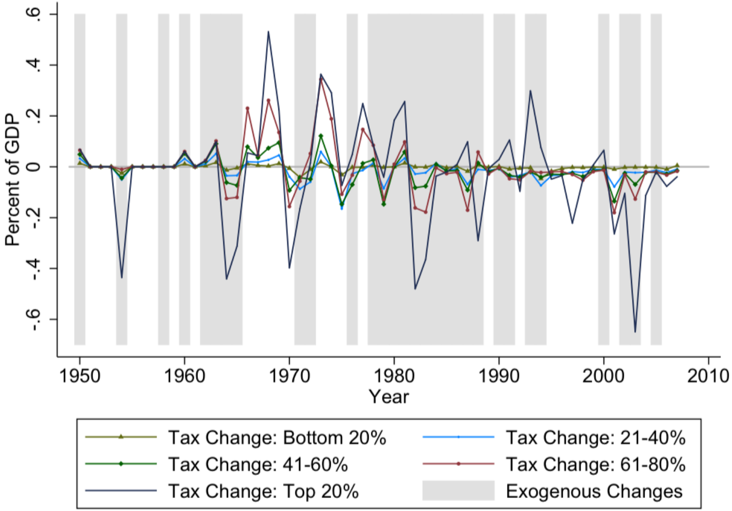
Source: Zidar (2018)

Zidar (2018)

Quantifies the **importance of the distribution** of tax changes for their overall impact on economic activity

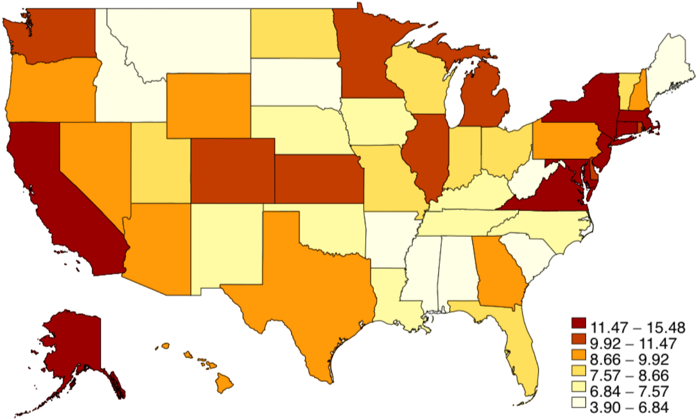
- **New data** using tax returns from NBER TAXSIM
- **New variation** from federal tax shocks $\times$ variation in income distribution across states

Federal tax changes by income group



Source: Zidar (2018)

Geographic variation in top income shares

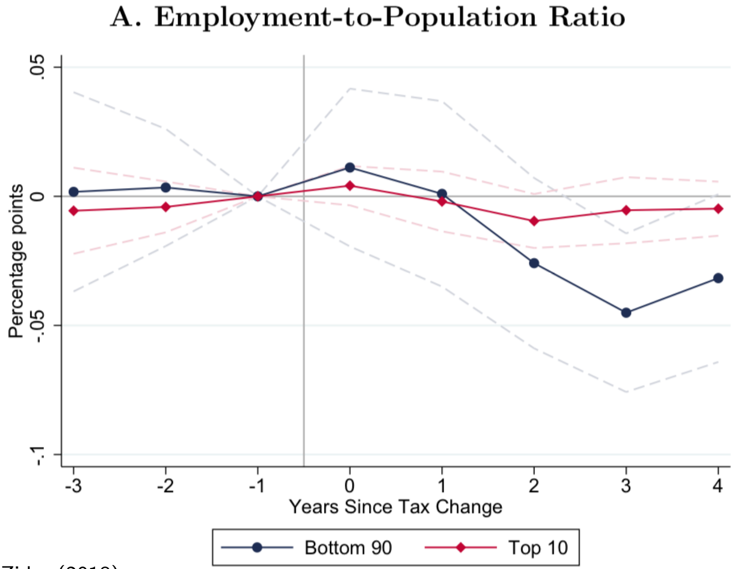


Source: Zidar (2018)

Findings

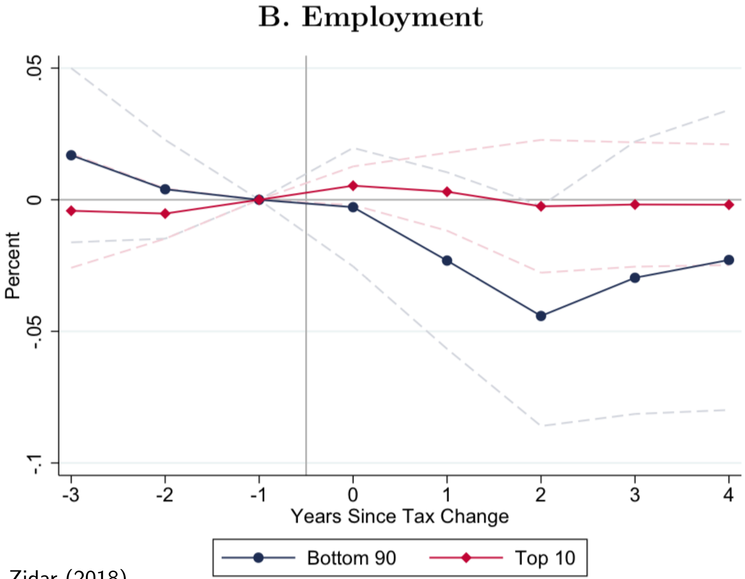
1. The positive relationship between tax cuts and employment growth is largely driven by tax cuts for lower-income groups
2. The effect of tax cuts for the top 10% on employment growth is small
    - Holds at both the state and federal level
    - Not confounded by changes in progressive spending, state trends, prior economic conditions

State: employment to population



Source: Zidar (2018)

State: employment

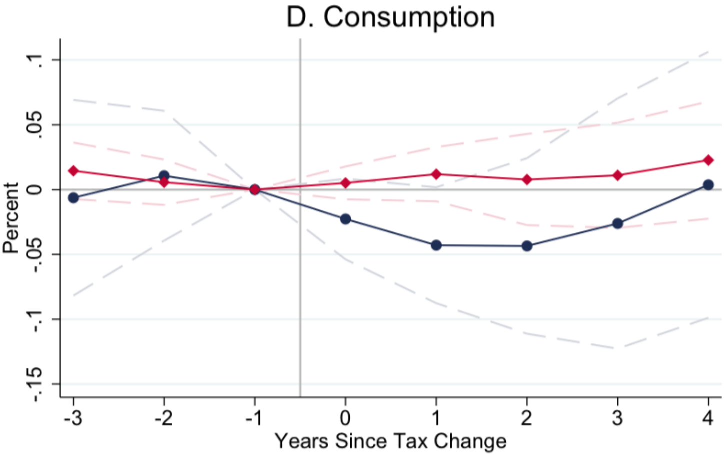


Source: Zidar (2018)

State: real wage increase $\Rightarrow L^S$ response

Source: Zidar (2018)

State: consumption effects ⇒ demand response



Source: Zidar (2018)

Appendix

Labor Supply Theory

Labor Supply Theory

Individual has utility over labor supply l and consumption c: $u(c,l)$ **increasing** in c and **decreasing** in l [= increasing in leisure]

$$\max_{c,l} u(c,l) \quad \text{subject to} \quad c = w \cdot l + R$$

with $w = \bar{w} \cdot (1-\tau)$ the net-of-tax wage ($\bar{w}$ is before tax wage rate and τ is tax rate), and R non-labor income

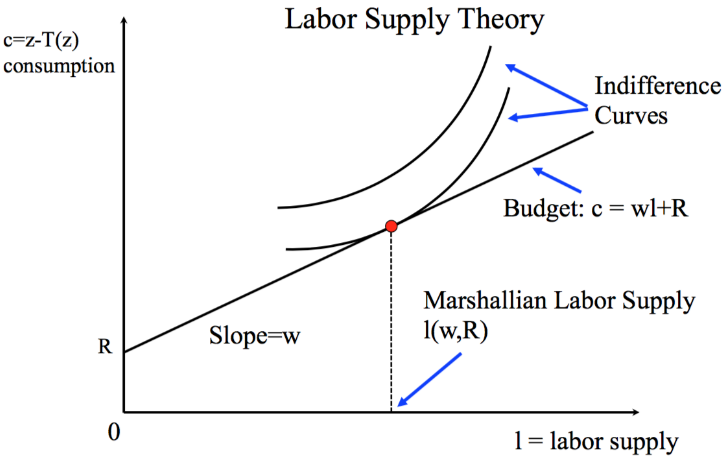
FOC $w\frac{\partial u}{\partial c} + \frac{\partial u}{\partial l} = 0$ defines Marshallian labor supply $l = l(w,R)$

Uncompensated labor supply elasticity: $\varepsilon^u = \dfrac{w}{l} \cdot \dfrac{\partial l}{\partial w}$

Income effects: $\eta = w\dfrac{\partial l}{\partial R} \leq 0$

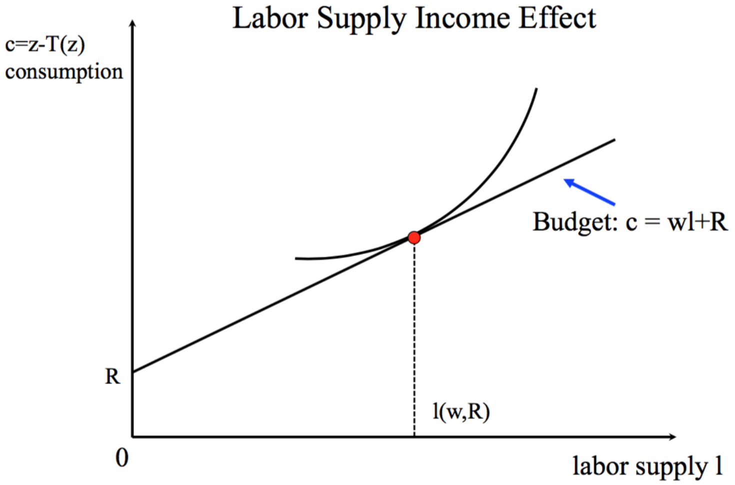
Source: Saez.

Labor Supply Theory



Source: Saez.

Labor Supply Theory



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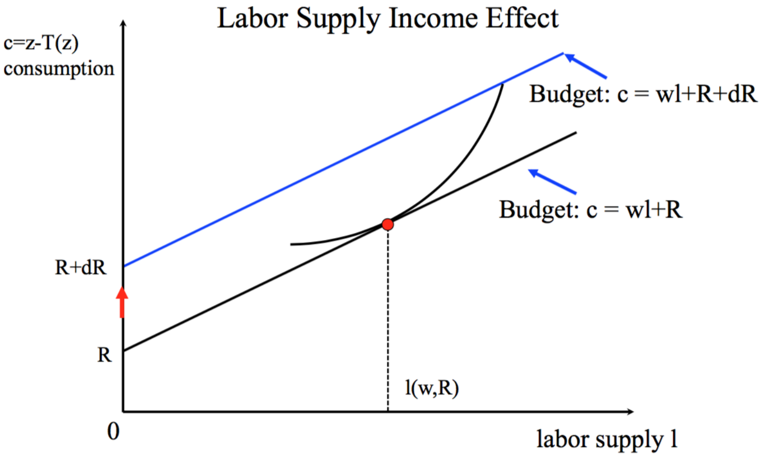
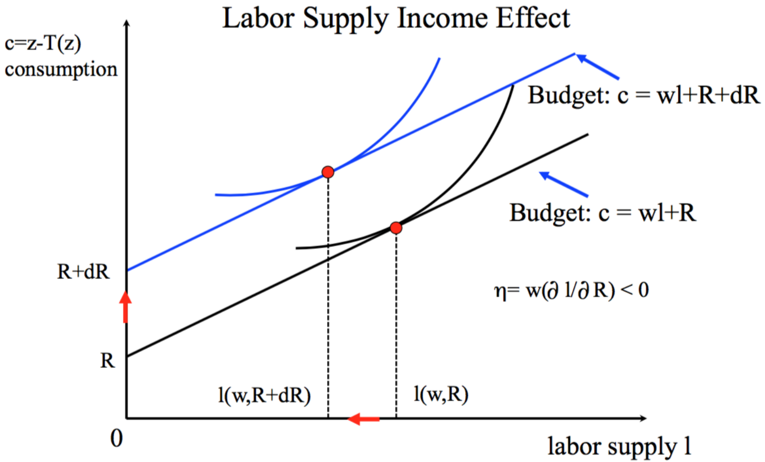


Source: Saez.

Labor Supply Theory



Source: Saez.

Labor Supply Theory

Substitution effects: Hicksian labor supply: $l^c(w, u)$ minimizes cost needed to reach u given slope $w \Rightarrow$

Compensated elasticity $\quad \varepsilon^c = \frac{w}{l} \cdot \frac{\partial l^c}{\partial w} > 0$

Slutsky equation $\quad \frac{\partial l}{\partial w} = \frac{\partial l^c}{\partial w} + l \frac{\partial l}{\partial R} \Rightarrow \varepsilon^u = \varepsilon^c + \eta$

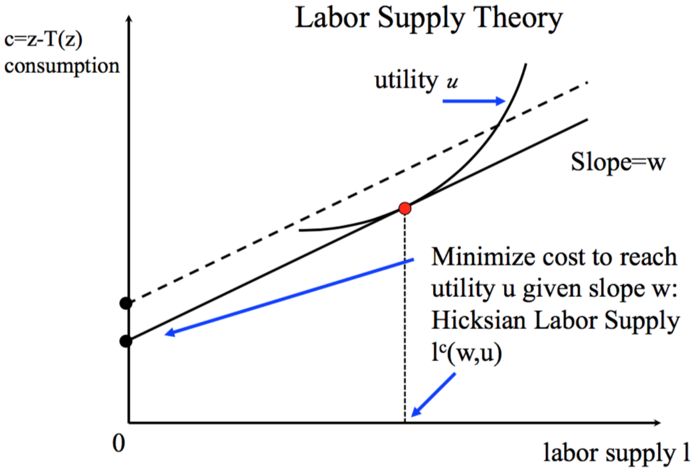
Tax rate τ discourages work through substitution effects (work pays less at the margin)

Tax rate τ encourages work through income effects (taxes make you poorer and hence in more need of income)

Net effect ambiguous (captured by sign of ε^u)

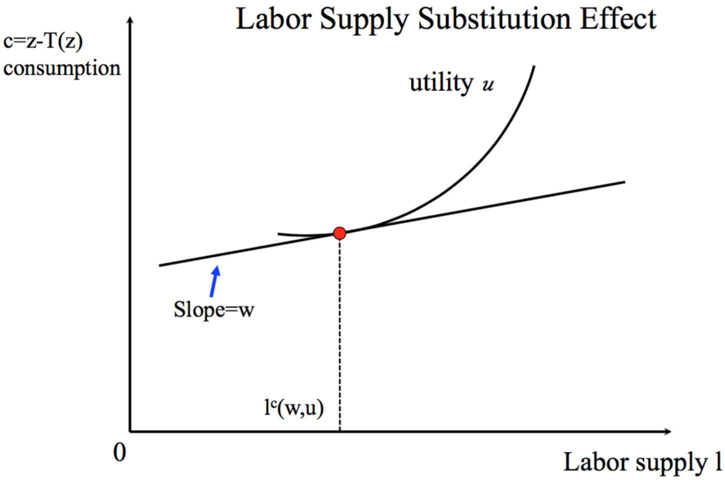
Source: Saez.

Labor Supply Theory



Source: Saez.

Labor Supply Theory



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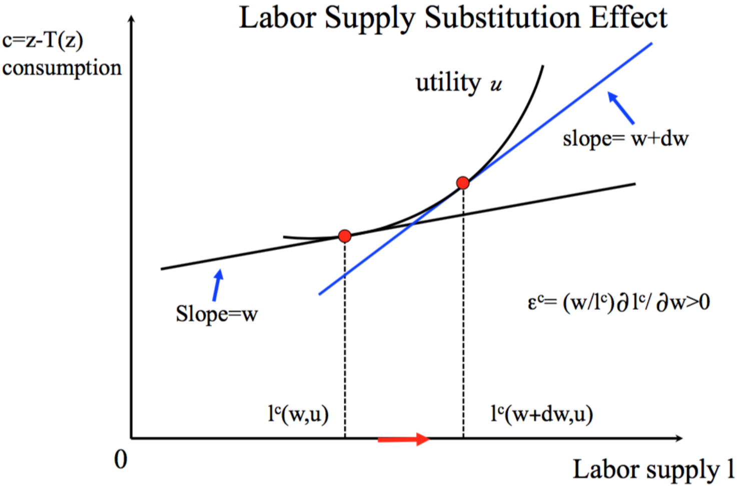

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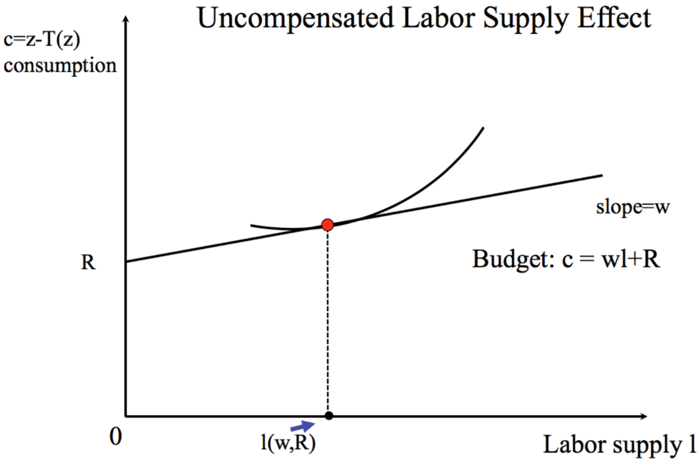

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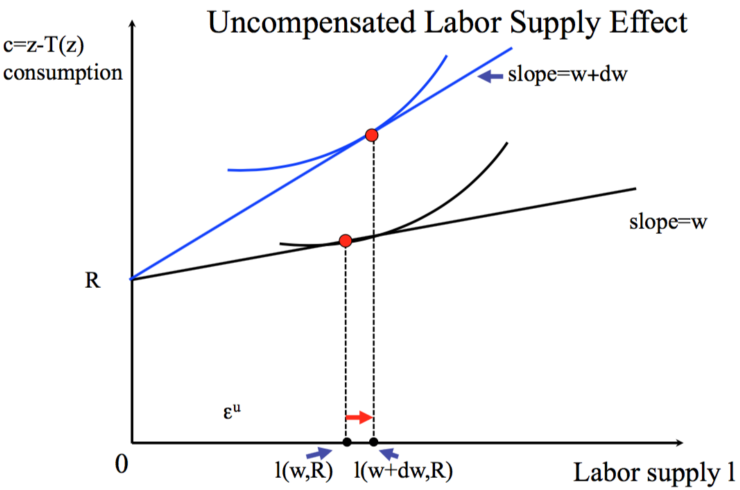

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