

230B: Public Economics  
Taxable Income Elasticities

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## **TAXABLE INCOME ELASTICITIES**

Modern public finance literature focuses on taxable income elasticities instead of hours/participation elasticities

Two main reasons:

- 1) Convenient sufficient statistic for all distortions created by income tax system (Feldstein 1999) [labor supply, avoidance, and evasion]
- 2) Data availability: taxable income is precisely measured in tax return data

Recent overview of this literature: Saez-Slemrod-Giertz JEL'10

## FELDSTEIN RESTAT'99

Consider two sources of responses to tax rates:

1) Labor supply:  $u(c, z)$  model where  $z$  is earnings and is equal to reported income  $y$  with  $c = y \cdot (1 - \tau) + R$

Individual chooses  $y$  to maximize  $u(y(1 - \tau) + R, y)$

2) Avoidance:  $z$  earnings is fixed but reported income  $y = z - d$  where  $d$  is non-taxable compensation (health benefits or perks):  $u(c, d)$  with  $c = (1 - \tau)y + R$

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# FEDERAL US INCOME TAX CHANGES

Tax rates change frequently over time

Biggest tax rate changes have happened at the top

Key recent reforms:

Reagan I: ERTA'81: top rate ↓ 70% to 50% (1981-1982)

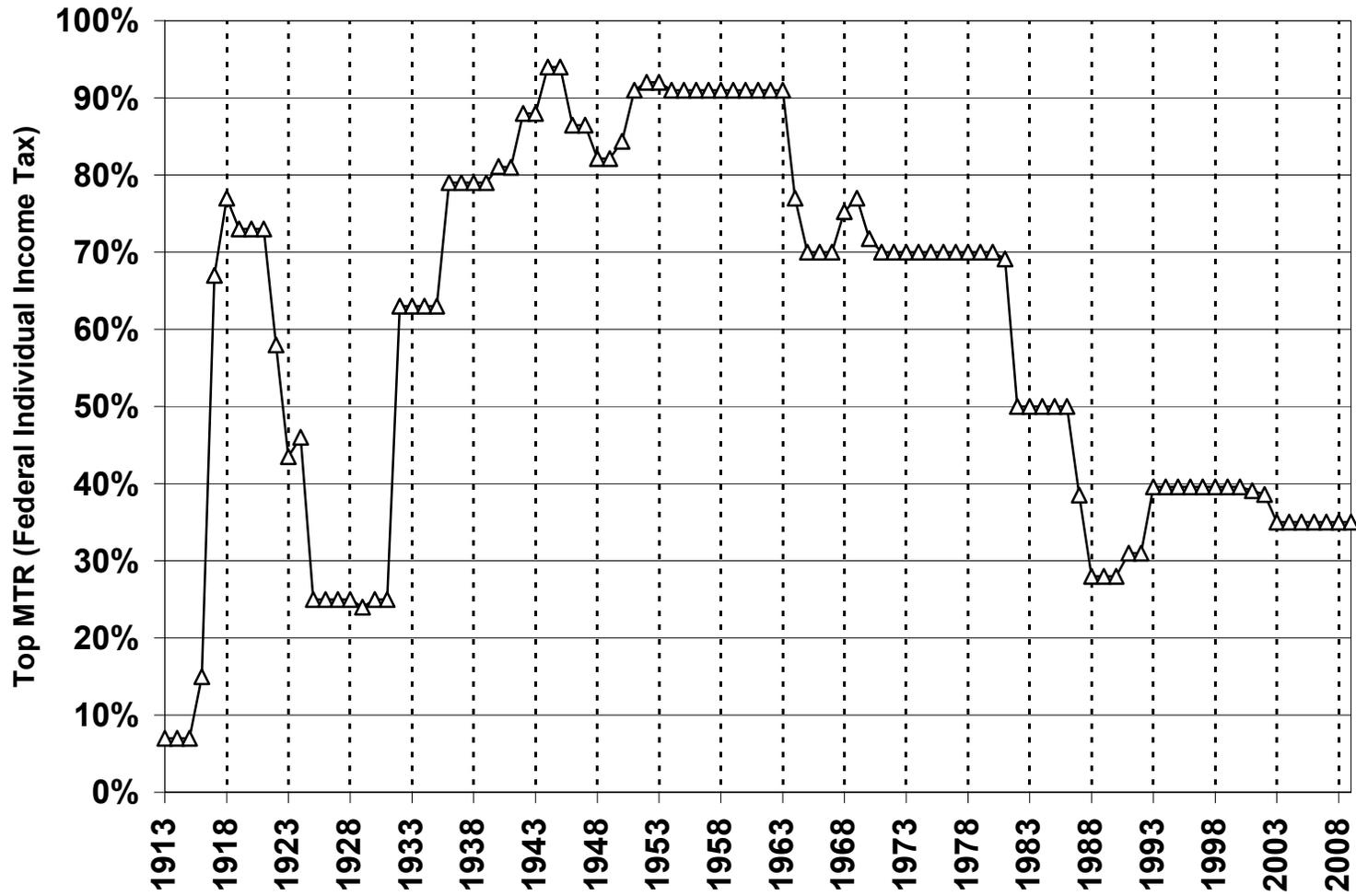
Reagan II: TRA'86: top rate ↓ 50% to 28% (1986-1988)

Clinton: OBRA'93: top rate ↑ 31% to 39.6% (1992-1993)

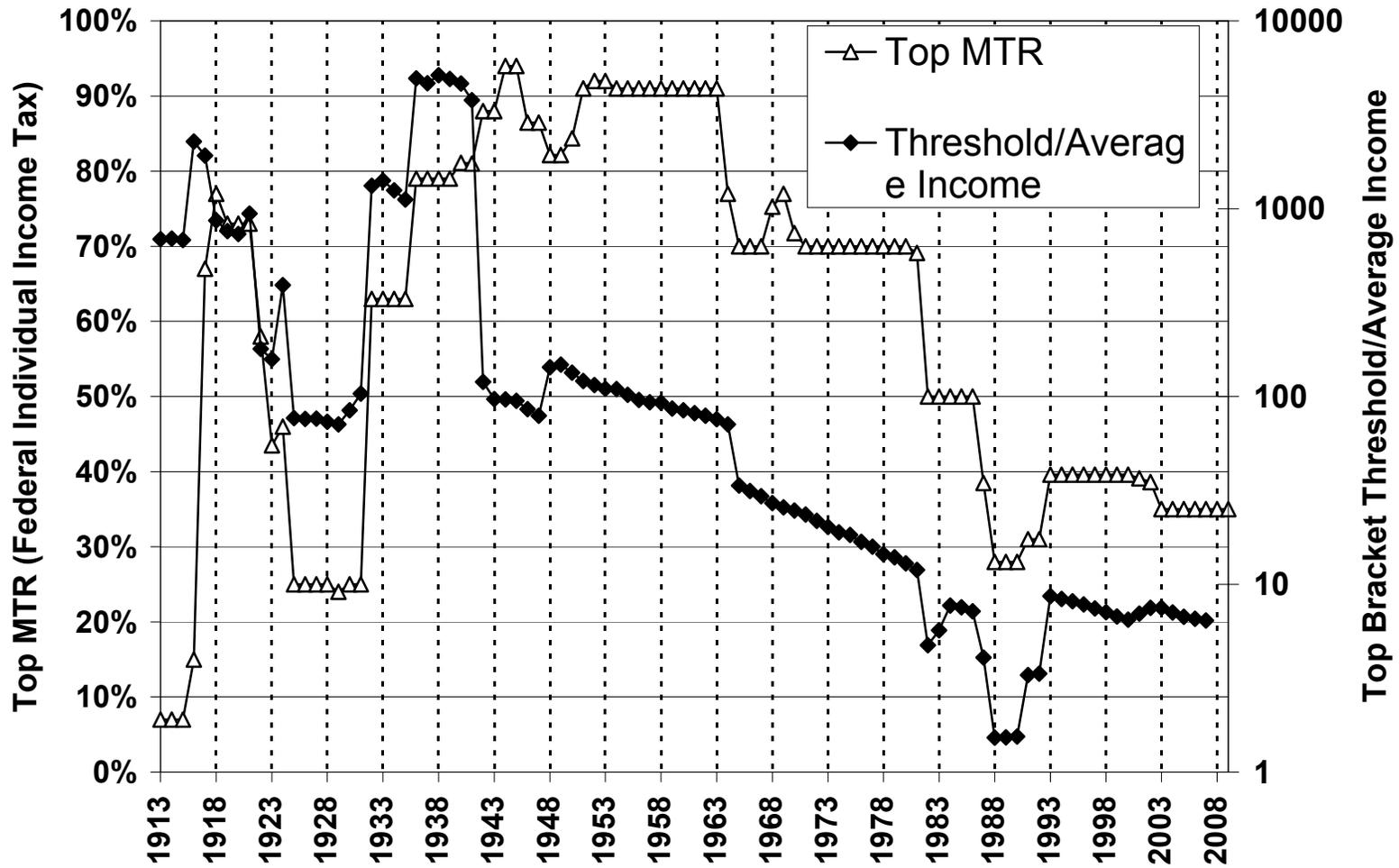
Bush: EGTRRA '01: top rate ↓ 39.6% to 35% (2001-2003)

Taxable Income = Ordinary Income + Realized Capital Gains  
- Deductions ⇒ Each component can respond to *MTRs*

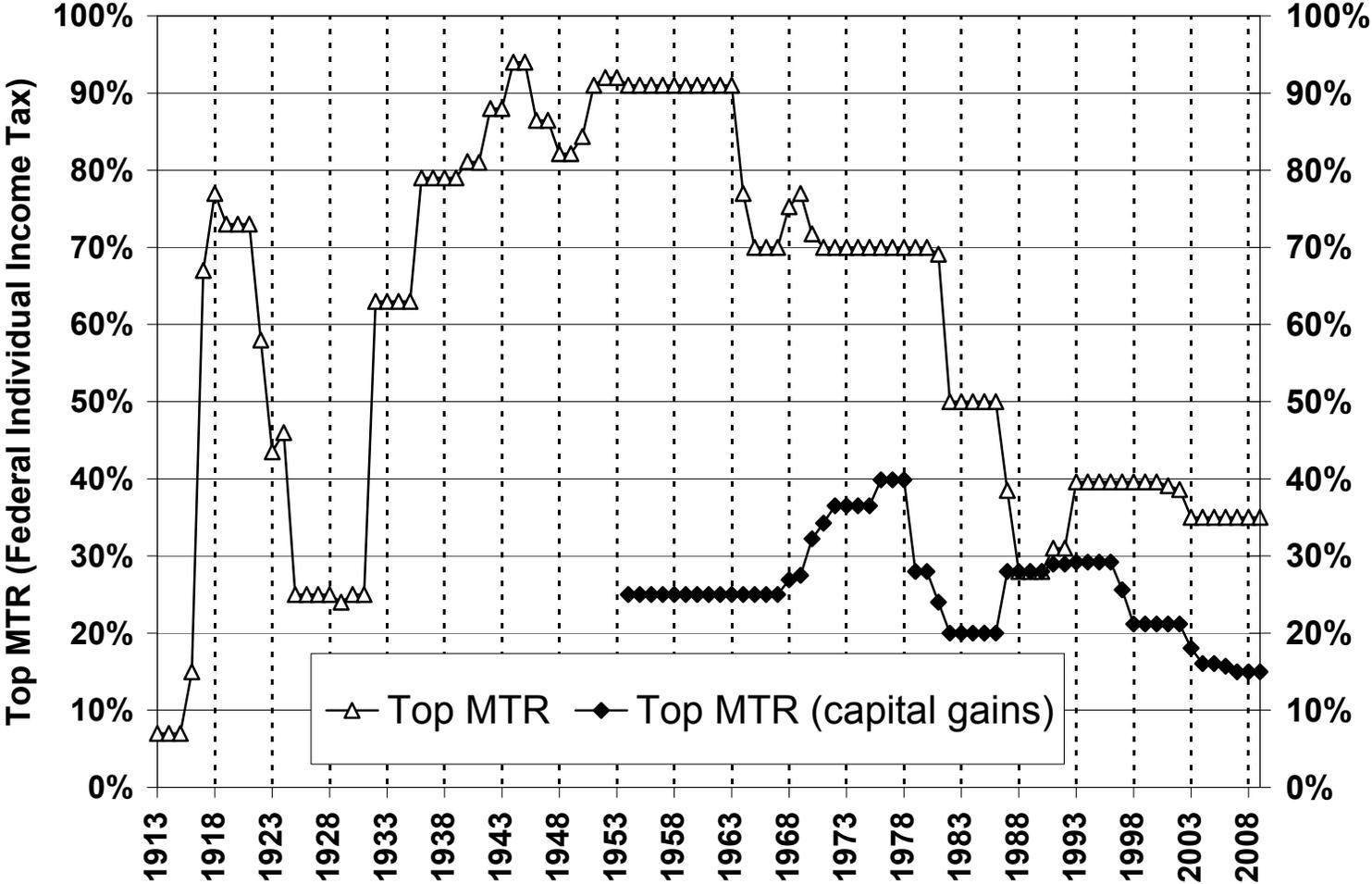
# US Top Marginal Tax Rate (Federal Individual Income Tax)



## US Top Marginal Tax Rate and Top Bracket Threshold



### US Top MTR ordinary income vs. capital gains



**Table A1.**  
**Top Federal Marginal Tax Rates**

Year	Ordinary Income (1)	Earned Income (2)	Capital Gains (3)	Corporate Income (4)
1952-1963	91.0	91.0	25.0	52
1964	77.0	77.0	25.0	50
1965-1967	70.0	70.0	25.0	48
1968	75.3	75.3	26.9	53
1969	77.0	77.0	27.9	53
1970	71.8	71.8	32.3	49
1971	70.0	60.0	34.3	48
1972-1975	70.0	50.0	36.5	48
1976-1978	70.0	50.0	39.9	48
1979-1980	70.0	50.0	28.0	46
1981	68.8	50.0	23.7	46
1982-1986	50.0	50.0	20.0	46
1987	38.5	38.5	28.0	40
1988-1990	28.0	28.0	28.0	34
1991-1992	31.0	31.0	28.0	34
1993	39.6	39.6	28.0	35
1994-2000	39.6	42.5	28.0	35
2001	39.1	42.0	20.0	35
2002	38.6	41.5	20.0	35
2003-2009	35.0	37.9	15.0	35

Notes: MTRs apply to top incomes. In some instances, lower income taxpayers may face higher MTRs because of income caps on payroll taxes or the so-called 33 percent "bubble" bracket following TRA 86. From 1952 to 1962, a 87% maximum average tax rate provision made the top marginal tax rate 87% instead of 91% for many very top income earners. From 1968 to 1970, rates include surtaxes. For earned income, MTRs include the Health Insurance portion of the payroll tax beginning with year 1994. Rates exclude the effect of phaseouts, which effectively raise top MTRs for many high-income filers. MTRs on realized capital gains are adjusted to reflect that, for some years, a fraction of realized gains were excluded from taxation. Since 2003, dividends are also tax favored with a maximum tax rate of 15%.

## LONG-RUN EVIDENCE IN THE US

Goal: evaluate whether top incomes respond to changes in one minus the marginal tax rate (=net-of-tax rate)

Focus is on Income before Deductions and excluding Realized Capital Gains

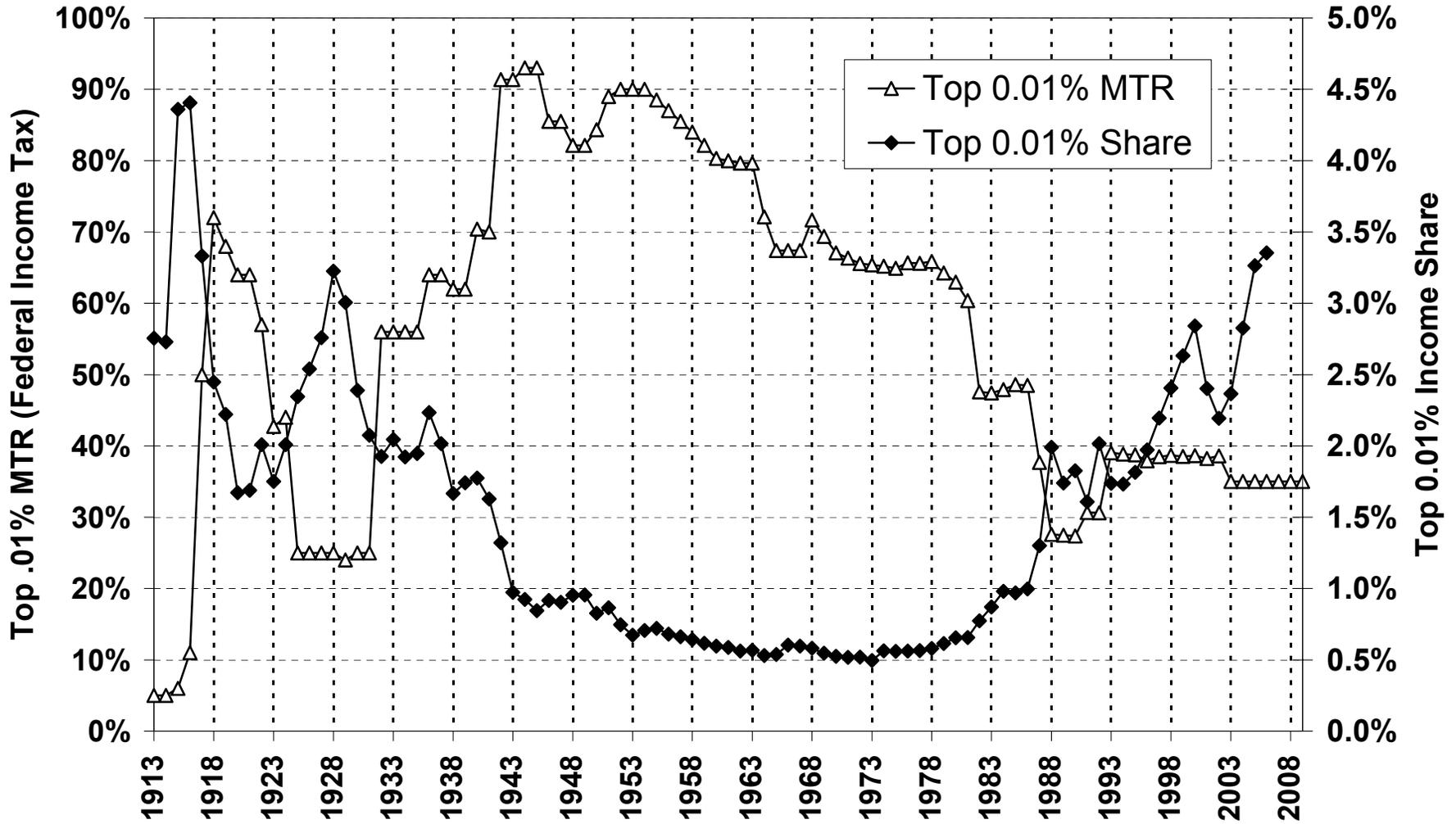
Pioneered by Feenberg-Poterba TPE'93 for period 1951-1990

Piketty-Saez QJE'03 estimate top income shares since 1913 [IRS tabulations for 1913-1959, IRS micro-files since 1960]

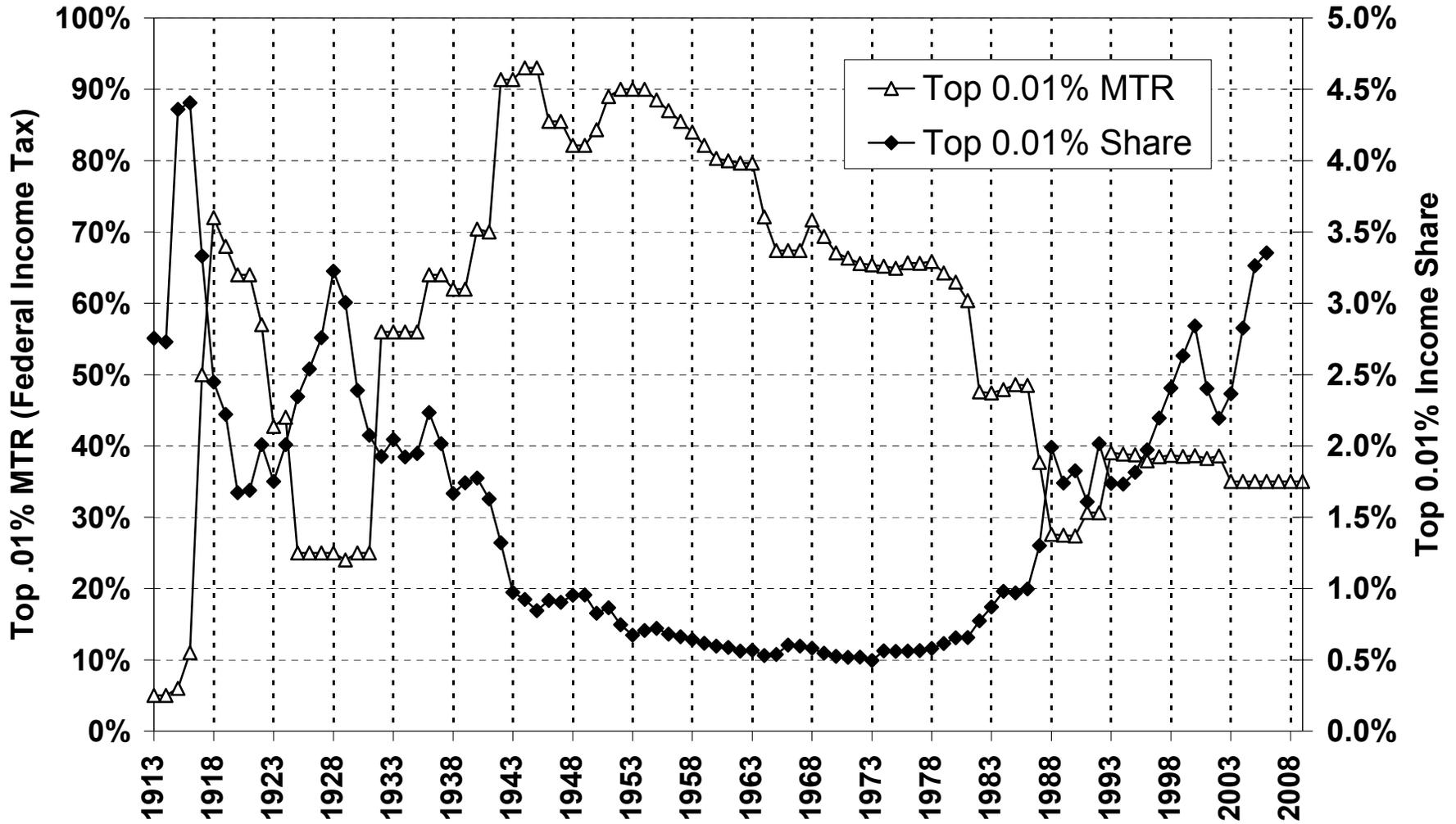
Landais '09 estimates MTRs by income groups since 1913

Saez TPE'04 proposes detailed analysis for 1960-2000 period using TAXSIM calculator at NBER linked to IRS micro-files

### US Top 0.01% Income Share and MTR (Piketty-Saez and Landais)



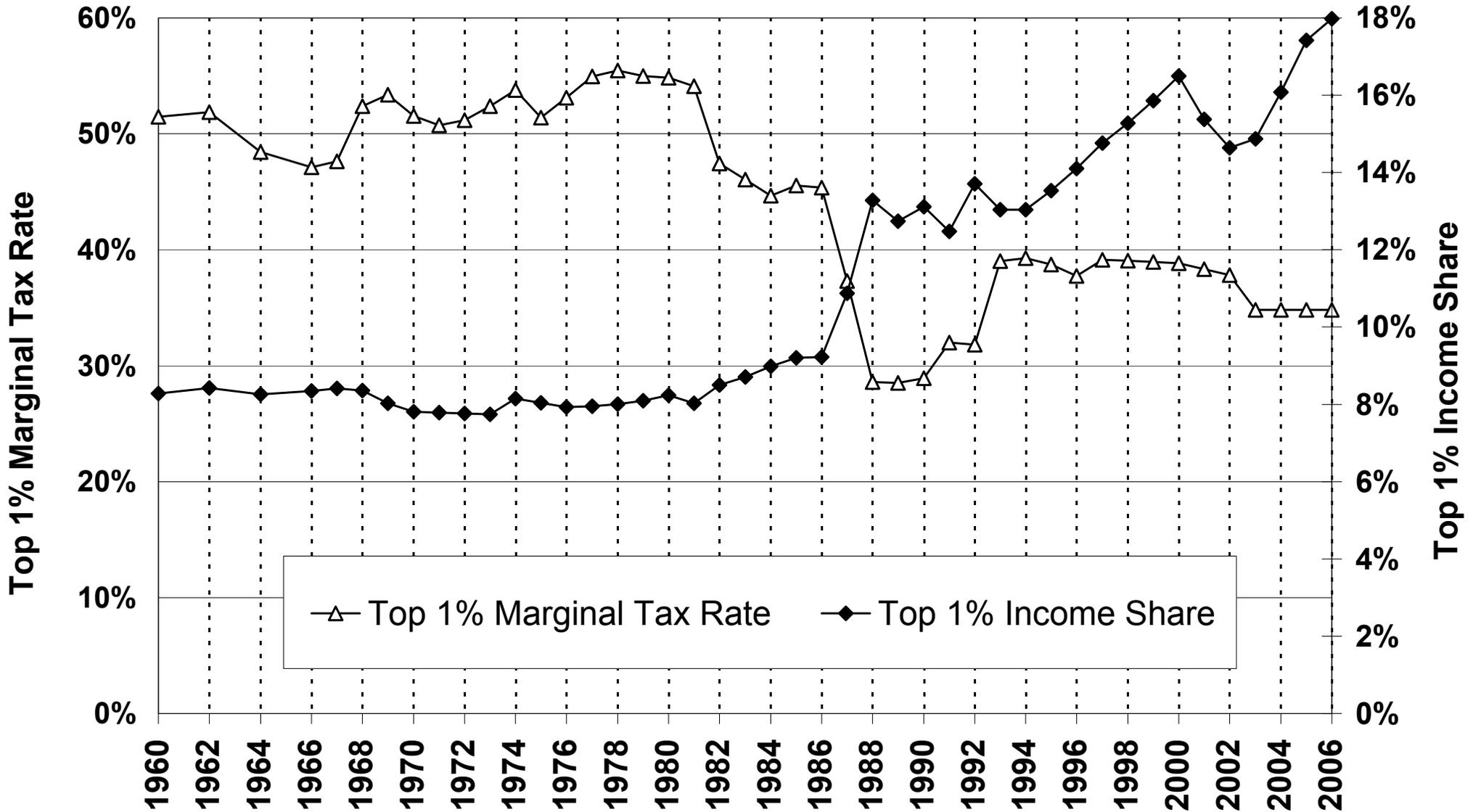
## US Top 0.01% Income Share and MTR (Piketty-Saez and Landais)



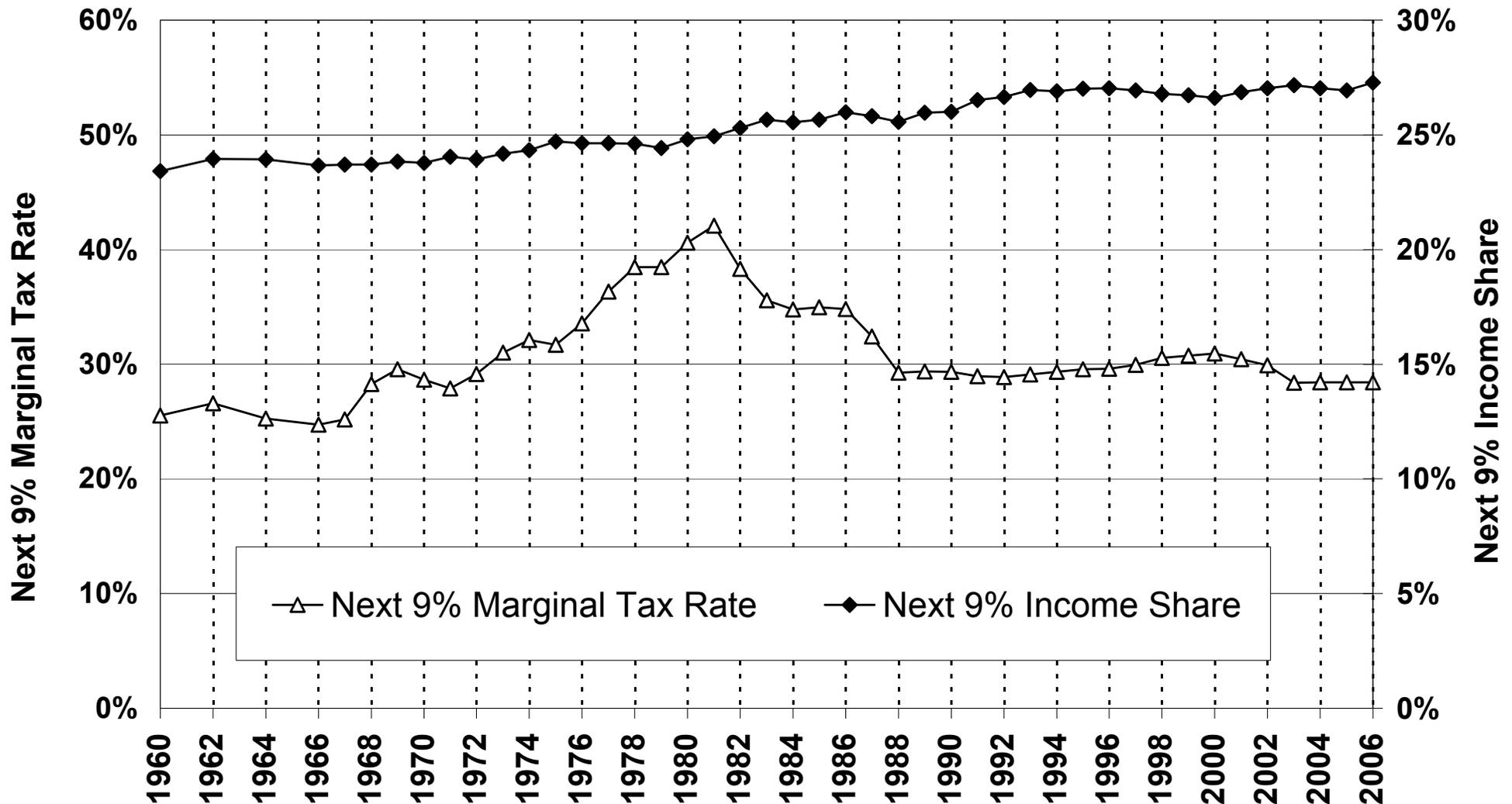
$$\log(\text{share}) = a + 0.617 (0.077) * \log(1 - \text{MTR}) + e$$

$$\log(\text{share}) = a + b * t + 0.666 (0.071) * \log(1 - \text{MTR}) + e$$

# A. Top 1% Income Share and Marginal Tax Rate



## B. Next 9% Income Share and Marginal Tax Rate



**FIGURE 1**

### Top Income Shares and Marginal Tax Rates, 1960-2006

Source: Updated version of Figure 8 in Saez (2004). Computations based on income tax return data. Income excludes realized capital gains, as well as Social Security and unemployment insurance benefits. The figure displays the income share (right y-axis) and the average marginal tax rate (left y-axis) (weighed by income) for the top 1% (Panel A) and for the next 9% (Panel B) income earners.

# INCOME SHARE BASED ELASTICITY ESTIMATION

1) **Tax Reform Episode:** Compare top income shares at  $t_0$  (before reform) and  $t_1$  (after reform)

$$e = \frac{\log sh_{t_1} - \log sh_{t_0}}{\log(1 - \tau_{t_1}) - \log(1 - \tau_{t_0})}$$

where  $sh_t$  is top income share and  $\tau_t$  is the average MTR for top group

Identification assumption: absent tax change,  $sh_{t_0} = sh_{t_1}$

2) **Full Time Series:** Run regression:

$$\log sh_t = \alpha + e \cdot \log(1 - \tau_t) + \varepsilon_t$$

and adding time controls to capture non-tax related top income share trends

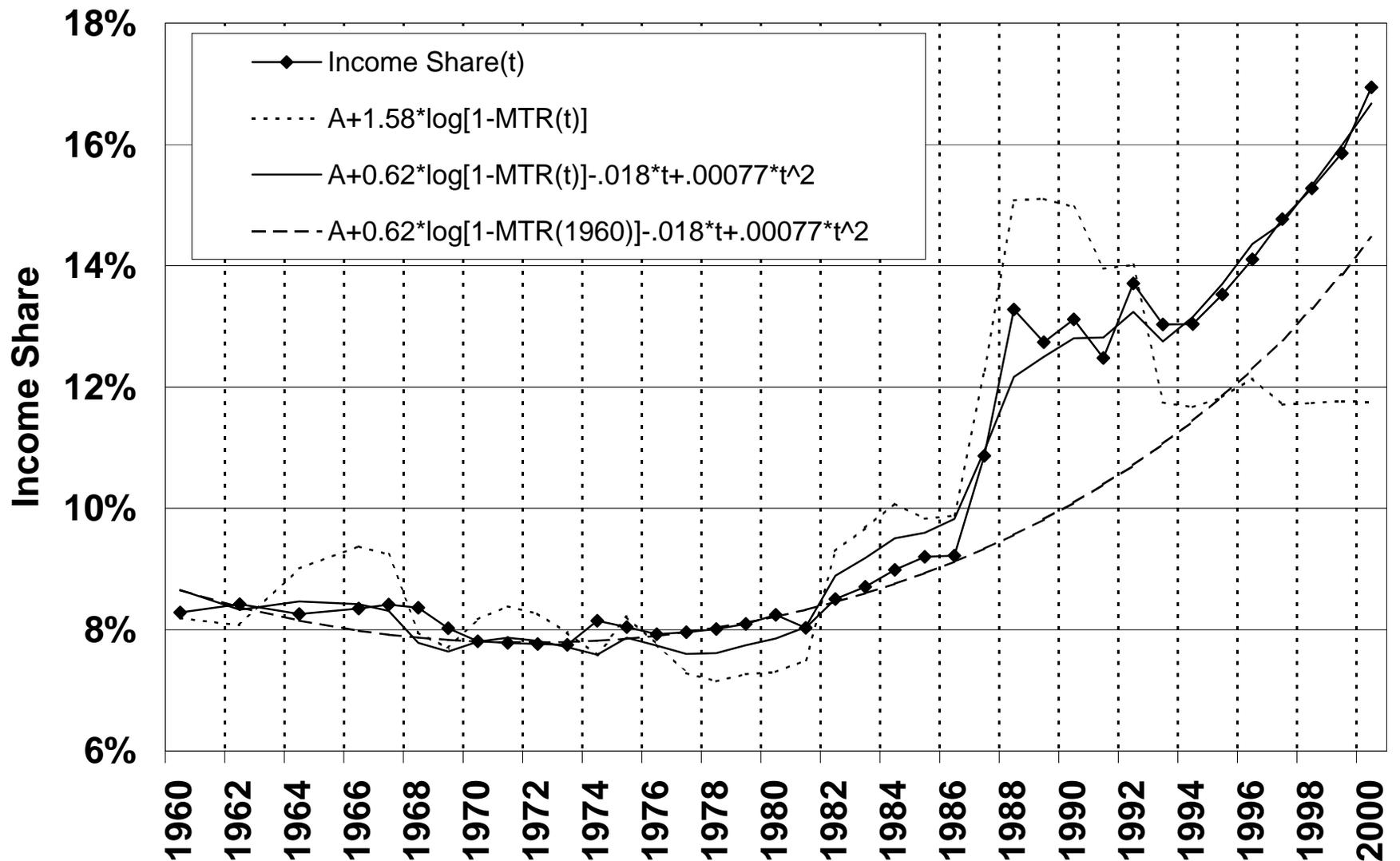
ID assumption: non-tax related changes in  $sh_t \perp \tau_t$

**Table 1.**  
**Elasticity estimates using top income share time series**

	Top 1%	Next 9%
	(1)	(2)
<b>A. Tax Reform Episodes</b>		
1981 vs. 1984 (ERTA 1981)	0.60	0.21
1986 vs. 1988 (TRA 1986)	1.36	-0.20
1992 vs. 1993 (OBRA 1993)	0.45	
1991 vs. 1994 (OBRA 1993)	-0.39	
<b>B. Full Time Series 1960-2006</b>		
No time trends	1.71 (0.31)	0.01 (0.13)
Linear time trend	0.82 (0.20)	-0.02 (0.02)
Linear and square time trends	0.74 (0.06)	-0.05 (0.03)
Linear, square, and cube time trends	0.58 (0.11)	-0.02 (0.02)

Notes: Estimates in panel A are obtained using series from Figure 1 and using the formula  $e = [\log(\text{income share after reform}) - \log(\text{income share before reform})] / [\log(1 - \text{MTR after reform}) - \log(1 - \text{MTR before reform})]$

Estimates in Panel B are obtained by time-series regression of  $\log(\text{top 1\% income share})$  on a constant,  $\log(1 - \text{average marginal tax rate})$ , and polynomials time controls from 1960 to 2006 (44 observations). OLS regression. Standard Errors from Newey-West with 8 lags.



**FIGURE 5.**

The Top 1% Income Share and fitted Values from Elasticity Regressions

Source: Series based on regression analysis presented in Table 3, columns (1) and (5). The diamond line is the top 1% income share. The dotted line is the fitted regression curve including only the net-of-tax rate. The solid line is the fitted regression curve including time controls. The dashed line is the same fitted regression curve but freezes the marginal tax rate at the 1960 value.

## LONG-RUN EVIDENCE IN THE US

- 1) Clear correlation between top incomes and top income rates both in several short-run tax reform episodes and in the long-run [but hard to assess long-run tax causality]
- 2) Correlation largely absent below the top 1% (such as the next 9%)
- 3) Top income shares sometimes do not respond to large tax rate cuts [e.g., Kennedy Tax Cuts of early 1960s]
- 4) Top income shares can change substantially for non-tax related reasons: (a) Great Depression 1928-1931 (MTR stable and top income shares ↓, (b) 1990s: MTR ↑ and top income shares ↑

## SPECIFIC TAX REFORM STUDIES

Lindsey JpubE'87 analyzes ERTA'81 using **repeated cross-section** tax data and finds large elasticities

Feldstein JPE'95 uses **panel** tax data to study TRA'86

Goolsbee JPE'00 uses **executive compensation** data to study OBRA'93

Gruber-Saez JpubE'02 uses 1979-1990 **panel** tax data to study full period

Many other studies (see Saez-Slemrod-Giertz JEL'10)

## FELDSTEIN JPE'95: METHODOLOGY

Feldstein (1995) estimates the effect of TRA86 on taxable income for top earners using **panel** tax data

1) Constructs three income groups  $M$ ,  $H$ ,  $HH$  based on before reform income in 1985

2) Looks at how incomes and MTRs evolve from 1985 to 1988 for individuals in each group using panel: forms DD estimates

$$\hat{e} = \frac{\Delta \log(z^H) - \Delta \log(z^M)}{\Delta \log(1 - \tau^H) - \Delta \log(1 - \tau^M)}$$

where  $z^H$ ,  $z^M$  and  $\tau^H$ ,  $\tau^M$  are income and MTRs of the  $H$  and  $M$  groups

TABLE 1

## RESPONSE OF TAXABLE INCOME OF NONAGED MARRIED TAXPAYERS TO CHANGES IN MARGINAL TAX RATES BETWEEN 1985 AND 1988

1985 MARGINAL TAX RATE	1985 AGI (\$000) (1)	OBSERVATIONS (2)	PERCENTAGE CHANGES OF				
			Net of Tax Rate (3)	Adjusted Full AGI (4)	Adjusted AGI Excluding Capital Gains (5)	Adjusted Taxable Income (6)	Adjusted Taxable Income Plus Gross Loss (7)
22	30.7	800	9.0	9.4	8.4	13.6	13.4
25	36.1	909	13.3	4.5	2.4	3.5	3.7
28	42.7	713	16.3	3.9	4.7	6.0	5.0
33	51.5	771	8.7	2.2	2.2	2.5	2.5
38	67.5	345	16.1	8.0	8.1	9.6	8.8
42	94.3	152	24.1	18.8	14.7	22.0	22.3
45	126.9	45	30.9	12.4	14.8	18.5	15.3
49	177.7	35	41.2	27.1	29.6	42.7	33.9
50	479.0	22	44.0	18.4	70.6	92.4	51.1
22-38		3,538	12.2	5.1	4.6	6.2	6.4
42-45		197	25.6	17.0	14.7	21.0	20.3
49-50		57	42.2	21.3	53.7	71.6	44.8

NOTE.—All observations pertain to married taxpayers under age 65 who filed joint tax returns for 1985 and 1988 with no age exemption in 1988. Taxpayers who created a subchapter S corporation between 1985 and 1988 are eliminated from the sample.

**TABLE 2**  
**ESTIMATED ELASTICITIES OF TAXABLE INCOME WITH RESPECT TO NET-OF-TAX RATES**

Taxpayer Groups Classified by 1985 Marginal Rate	Net of Tax Rate (1)	Adjusted Taxable Income (2)	Adjusted Taxable Income Plus Gross Loss (3)
Percentage Changes, 1985–88			
1. Medium (22–38)	12.2	6.2	6.4
2. High (42–45)	25.6	21.0	20.3
3. Highest (49–50)	42.2	71.6	44.8
Differences of Differences			
4. High minus medium	13.4	14.8	13.9
5. Highest minus high	16.6	50.6	24.5
6. Highest minus medium	30.0	65.4	38.4
Implied Elasticity Estimates			
7. High minus medium		1.10	1.04
8. Highest minus high		3.05	1.48
9. Highest minus medium		2.14	1.25

NOTE.—The calculations in this table are based on observations for married taxpayers under age 65 who filed joint tax returns for 1985 and 1988 with no age exemption in 1988. Taxpayers who created a subchapter S corporation between 1985 and 1988 are eliminated from the sample.

## FELDSTEIN JPE'95: RESULTS

**Results:** Feldstein obtains very high elasticities (above 1) for top earners

⇒ US was on the wrong side of the Laffer curve for the rich

⇒ Laffer rate  $\tau = 1/(1 + a \cdot e) = 1/(1 + 2 \cdot 1) = 33\%$  Cutting top tax rate from 50% to 28% raised revenue

## FELDSTEIN JPE'95: ISSUES

- 1) Non-tax related **changes in inequality** [same criticism as top share analysis]: panel helps only if inequality changes due to arrival of new people
- 2) Short-term vs. Long-term response [same criticism as top share analysis]
- 3) **Mean reversion**: rich people in year  $t$  tend to revert to the mean in year  $t + 1 \Rightarrow$  Panel analysis introduces downward bias in  $e$  [when  $\tau \downarrow$  for rich]
- 4) **Very small sample** in panel data [57 tax filers in  $HH$  group] [Auten-Carroll RESTAT'99 uses larger Treasury panel data and finds smaller elasticity 0.65]

In net, not clear panel data adds value relative to repeated-cross-section

## FELDSTEIN JPE'95: ISSUES

5) DD can give very biased results when elasticity differs across groups:

Example: (a)  $M$  group has  $e^M = 0$  so that  $\Delta \log(z^M) = 0$  and that  $H$  group has  $e^H = e > 0$  so that  $\Delta \log(z^H) = e \Delta \log(1 - \tau^H)$ .

Suppose that  $\Delta \log(1 - \tau^M) = 0.5 \cdot \Delta \log(1 - \tau^H)$ .

Then, the estimated elasticity  $\hat{e}^{DD} = e \Delta \log(1 - \tau^H) / [\Delta \log(1 - \tau^H) - \Delta \log(1 - \tau^M)] = 2e$

In Feldstein JPE'95: Simple Difference  $\Delta \log(z) / \Delta \log(1 - \tau)$  uniformly smaller than DD

⇒ Better to focus on a single group as in top share analysis than on the comparison with lower income group control

## GRUBER AND SAEZ JPUBE'02

Generalization of Feldstein JPE'95 using IV regression analysis

Use panel data from 1979-1990 on all tax changes available rather than a single reform

**Model:**  $z_{it} = z_{it}^0 \cdot (1 - \tau_{it})^e$  where  $z_{it}^0$  is potential income (if MTR=0),  $e$  is elasticity

$$\log(z_{it+3}/z_{it}) = \alpha + e \cdot \log(1 - \tau_{it+3}) / (1 - \tau_{it}) + \varepsilon_{it}$$

$\tau_{it+3}$  and  $\varepsilon_{it}$  are correlated [because  $\tau_{it+3} = T'_{t+3}(z_{it+3})$ ]

**Instrument:** predicted change in MTR assuming income stays constant:  $\log(1 - \tau_{it+3}^p) / (1 - \tau_{it})$  where  $\tau_{it+3}^p = T'_{t+3}(z_{it})$

Isolates changes in tax law ( $T_t(\cdot)$ ) as the only source of variation in tax rates

Table 4  
 Basic elasticity results<sup>a</sup>

Income controls	None		Log income		Log income 10-piece spline	
	Broad income (1)	Taxable income (2)	Broad income (3)	Taxable income (4)	Broad income (5)	Taxable income (6)
Elasticity	-0.300 (0.120)	-0.462 (0.194)	0.170 (0.106)	0.611 (0.144)	0.120 (0.106)	0.400 (0.144)
Dummy for marrieds	-0.008 (0.010)	-0.062 (0.018)	0.045 (0.014)	0.049 (0.023)	0.050 (0.012)	0.055 (0.021)
Dummy for singles	-0.037 (0.012)	-0.053 (0.019)	-0.034 (0.013)	-0.032 (0.022)	-0.036 (0.013)	-0.027 (0.021)
Log(income) control			-0.083 (0.015)	-0.167 (0.021)		

Source: Gruber and Saez 2002

## GRUBER AND SAEZ JPUBE'02

Find an elasticity of roughly 0.3-0.4 BUT results are very fragile [Saez-Slemrod-Giertz JEL'10]

- 1) Sensitive to exclusion of low incomes (min income threshold)
- 2) Sensitive to controls for mean reversion
- 3) Subsequent studies find smaller elasticities using data from other countries
- 4) Bundles together small tax changes and large tax changes: if individuals respond only to large changes in short-medium run, then estimated elasticity is too low [Chetty '09]

## FISCAL EXTERNALITIES

Feldstein RESTAT'99: nature of behavioral response (labor supply, avoidance, etc.) does not matter AS LONG AS the behavioral response does not generate a **fiscal externality**

A **Fiscal externality** is a change in tax revenue that occurs in any tax base  $z^B$  other than  $z$  due to the behavioral response to the tax change in the initial base  $z$

(1)  $z^B$  can be a different tax base in the same time period (such as corporate income tax base)  $\Rightarrow$  **Income shifting**

(2)  $z^B$  can be the same tax base in a different time period (such as future income)  $\Rightarrow$  **Inter-temporal Substitution**

Efficiency and optimal tax analysis depend on effect on **total** tax revenue

## INTER-TEMPORAL SUBSTITUTION: REALIZED CAPITAL GAINS

Realized capital gains occur when individual sells asset at a higher price than buying price

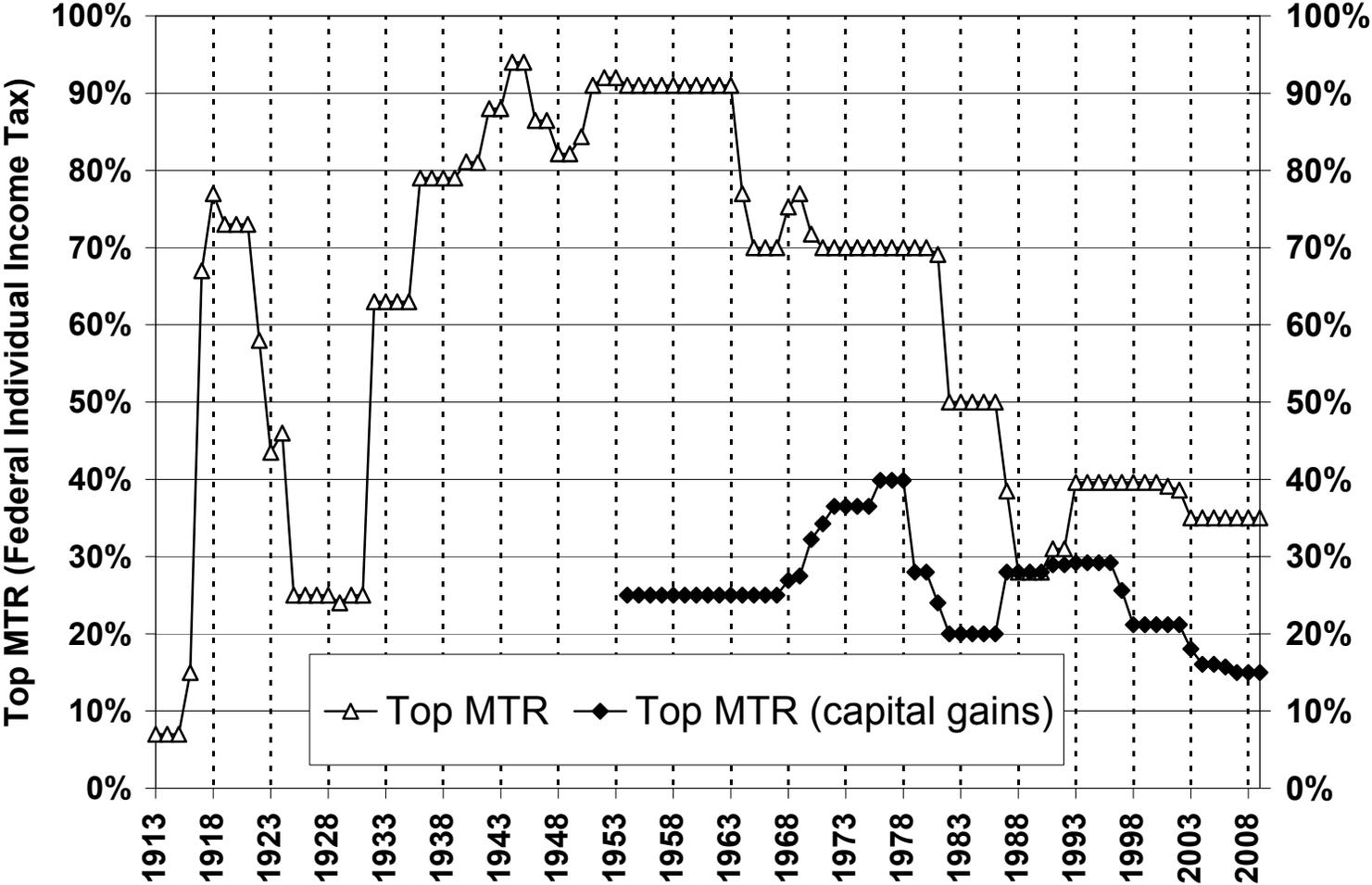
Individuals have flexibility in the timing of asset sales and capital gains realizations

TRA'86 lowered the top tax rate on ordinary income from 50% to 28% but increased the top tax rate on realized capital gains from 20% to 28%

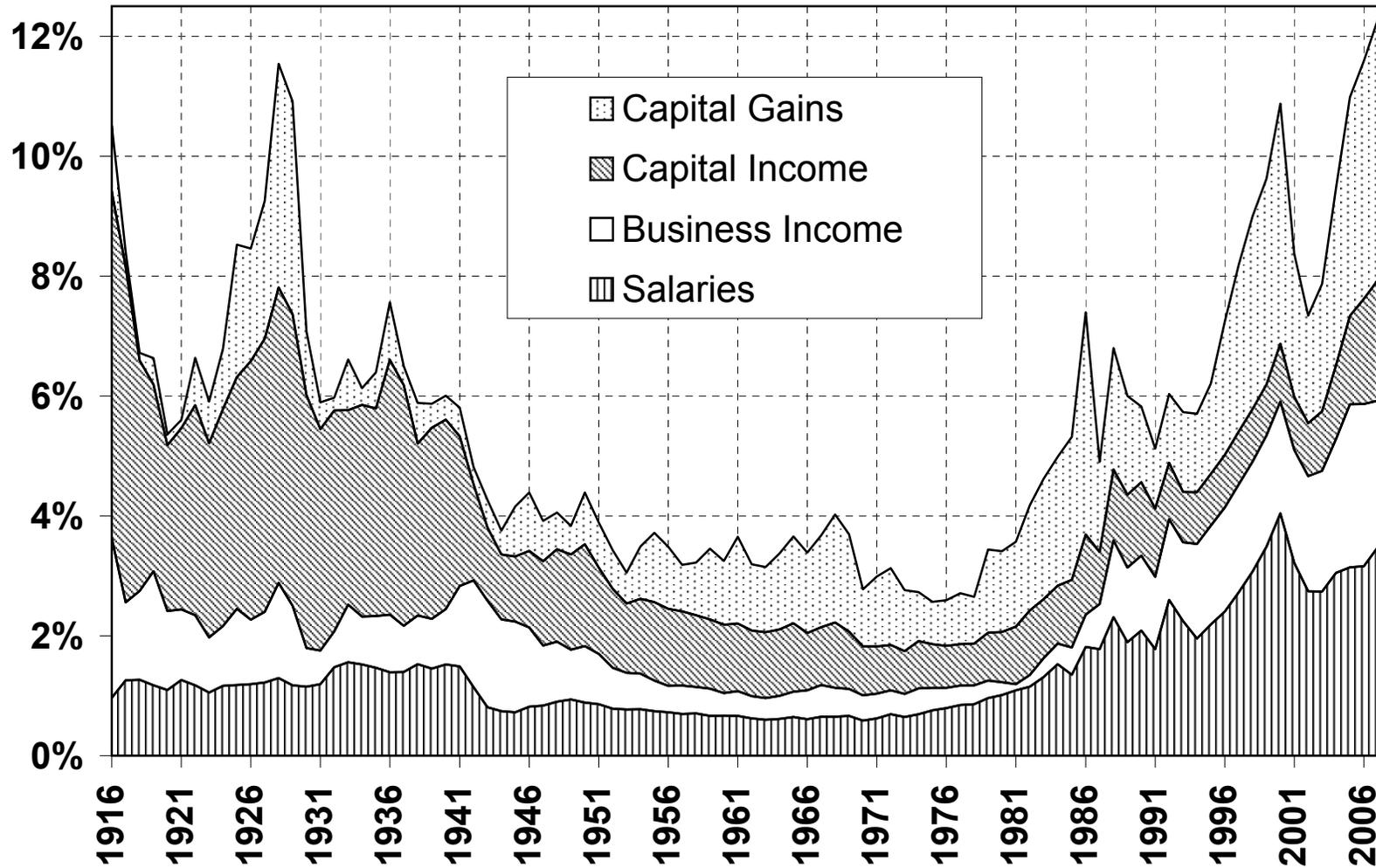
⇒ Surge in capital gains realizations in 1986 [and depressed capital gains in 1987] to take advantage of low 20% rate before 28% tax rate applies

⇒ Short-term elasticity is very large but long-term elasticity is certainly much smaller

### US Top MTR ordinary income vs. capital gains



## US Top 0.1% Income Share and Composition



Source: Piketty and Saez QJE'03, updated to 2007

## INTER-TEMPORAL SUBSTITUTION: STOCK-OPTIONS

Goolsbee JPE'00 hypothesizes that top earners' ability to re-time income drives much of observed responses [Frisch elasticity instead of compensated elasticity]

Fixed effects regression specification:

$$TLLI_{it} = e_1 \log(1 - MTR_{it}) + e_2 \log(1 - MTR_{it+1}) + \alpha_i + \beta_t$$

Short-run elasticity is  $e_1$

$e_2 < 0$  is future MTR increase shifts income to present

Long run elasticity is  $e_1 + e_2$

Uses ExecuComp panel data to study effects of the 1993 Clinton top tax rate  $\uparrow$  [from 31% in 1992 to 39.6% in 1993 announced in late 1992] on executive pay

TABLE 2  
 AVERAGE COMPENSATION BY TYPE FOR HIGH-INCOME EXECUTIVES  
 (in Thousands)

	1991	1992	1993	1994	1995
Taxable income	911	1,153	974	965	1,173
Salary	347	336	336	351	373
Bonus	198	207	241	284	330
LTIP payout	57	72	57	64	89
Options exercised	268	496	293	235	381
Other income (nontaxed)	36	37	66	54	78

SOURCE.—Author's calculations for executives with permanent income greater than \$275,000 per year.

## STOCK OPTIONS

Major form of compensation of US top executives. Theoretical goal is to motivate executives to increase the value of the company (stock price  $P(t)$ )

Stock-option is granted at date  $t_0$  allow executives to buy  $N$  company shares at price  $P(t_0)$  on or after  $t_1$  (in general  $t_1 - t_0 \simeq 3 - 5$  years = vesting period)

Executive exercise option at (chosen) time  $t_2 \geq t_1$ : pays  $N \cdot P(t_0)$  to get shares valued  $N \cdot P(t_2)$ . Exercise profit  $N[P(t_2) - P(t_0)]$  (considered and taxed as wage income in the US)

After  $t_2$ , executive owns  $N$  shares, eventually sold at time  $t_3 \geq t_2$ : realized capital gain  $N[P(t_3) - P(t_2)]$  (taxed as capital gains)

TABLE 3  
RESPONSE OF TAXABLE INCOME

	FIRST DIFFERENCE						
	No (1)	No (2)	No (2A)	Yes (3)	No (4)	No (5)	Yes (6)
$\ln(1 - \text{tax}_t)$	1.288 (.126)	1.159 (.119)	1.113 (.123)	1.224 (.107)	.873 (.324)	1.152 (.316)	1.427 (.338)
$\ln(1 - \text{tax}_{t+1})$		-.763 (.106)	-.893 (.109)	-.887 (.118)		-1.325 (.350)	-1.356 (.385)
$\ln(1 - \text{tax}_c) \times [I > 0]$		.282 (.140)	.314 (.139)	.123 (.198)		.322 (.133)	.189 (.187)
$\ln(\text{market value})$		.610 (.014)	.592 (.014)	.261 (.010)		.212 (.022)	.094 (.017)
Earnings/assets		.510 (.056)	.549 (.058)	.191 (.062)		.132 (.120)	-.048 (.128)
Time	.169 (.007)	.077 (.008)	.071 (.008)	.084 (.009)		...	...
[Top-bracket] $\times$ time					.055 (.010)	-.008 (.010)	.008 (.015)
[Top-bracket] $\times$ market value						.408 (.025)	.174 (.019)
[Top-bracket] $\times$ earnings						.345 (.131)	.202 (.140)
Year dummies	no	no	no	no	yes	yes	yes
Observations	16,895	16,477	13,835	11,493	21,807	21,299	14,429
$R^2$	.73	.77	.77	.07	.82	.84	.07

NOTE.—The sample in each regression pertains to 1991–95. The dependent variable is either the log of taxable income or the first difference of log taxable income. Cols. 1–3 look at executives with permanent income greater than \$275,000 per year. Cols. 4–6 look at all executives. Col. 2A uses tax rates calculated with permanent income including perquisites. All regressions in levels include individual fixed effects. The term  $\ln(1 - \text{tax}_c) \times [I > 0]$  gives the net-of-corporate-tax share for individuals with more than \$1 million in salary in a year previous to the nondeductibility rule. The other variables are defined in the text and are first-differenced in cols. 3 and 6. The time variable is a time trend in the levels regressions and a constant in the first-difference regressions. The top-bracket terms are the variables interacted with a dummy indicating that the executive has permanent income greater than \$275,000. Standard errors are in parentheses.

## GOOLSBEE JPE'00: INTER-TEMPORAL SUBSTITUTION

Executives had a surge in income in 1992 (when reform was announced) relative to 1991 followed by a sharp drop in 1993

1) Simple DD estimate for '92 vs '93 would find a large effect here, but it would be picking up pure re-timing

2) Concludes that long run effect  $e_1 + e_2$  is much smaller than substitution effect  $e_1$  [long-run elasticity is the relevant parameter for policy]

3) Effects driven almost entirely by re-timing exercise of stock-options [executives knew tax rate would  $\uparrow$  in '93 when Clinton elected in Nov. '92  $\Rightarrow$  Exercise stock options]

## INCOME SHIFTING: CORPORATE AND INDIVIDUAL TAX BASE

Businesses can be organized as **corporations** or **unincorporated businesses** [also called **pass-through** entities]

Corporate profits are first taxed by corporate income tax [rate  $\tau_c$  ]

Net-of-tax profits are taxed again when finally distributed to shareholders. 2 distribution options:

a) dividends [tax rate  $\tau_d$ ]

b) retained profits increase stock price: shareholders realize capital gains when finally selling the stock [tax rate  $\tau_{cg}$ ]

For **unincorporated businesses** (sole proprietorships, partnerships, S-corporations) profits are taxed directly and solely as individual income (rate  $\tau_i$ )

## CORPORATE AND INDIVIDUAL TAX BASE

Corporate form best if  $(1 - \tau_c)(1 - \tau_{cg}) > 1 - \tau_i$

US fed taxes in 2009:  $\tau_c = 35\%$ ,  $\tau_{cg} = 15\%$  (less because of deferral value),  $\tau_d = 15\%$  (since 2003)  $\tau_i = 35\%$ , (top rate)

Today, individual form is best

Before TRA'86 (and especially before ERTA'81), top individual rate  $\tau_i$  was much higher so corporate form was best

Shifts from corporate to individual base increases business profits at the expense of dividends and realized capital gains

Large part of TRA'86 response is due to such shifting



## **BOTTOM LINE ON US BEHAVIORAL RESPONSES TO TAXES**

- 1) Clear evidence of strong responses to tax changes due to re-timing or income shifting
- 2) Heterogeneity in tax responses due to heterogeneity in shifting opportunities [e.g., Kennedy tax cuts of '61 vs. TRA'86]
- 3) Top income shares can change drastically without changes in tax rates [Great Depression, 1993-2000]
- 4) Difficult to know from single country time series the role played by top tax rate cuts in the surge of top incomes ⇒ International evidence can cast further useful evidence

## INTERNATIONAL EVIDENCE ON TOP INCOMES AND TAX RATES

Atkinson-Piketty-Saez JEL '10 summarize recent effort to construct top income share series [and MTR series in some cases]

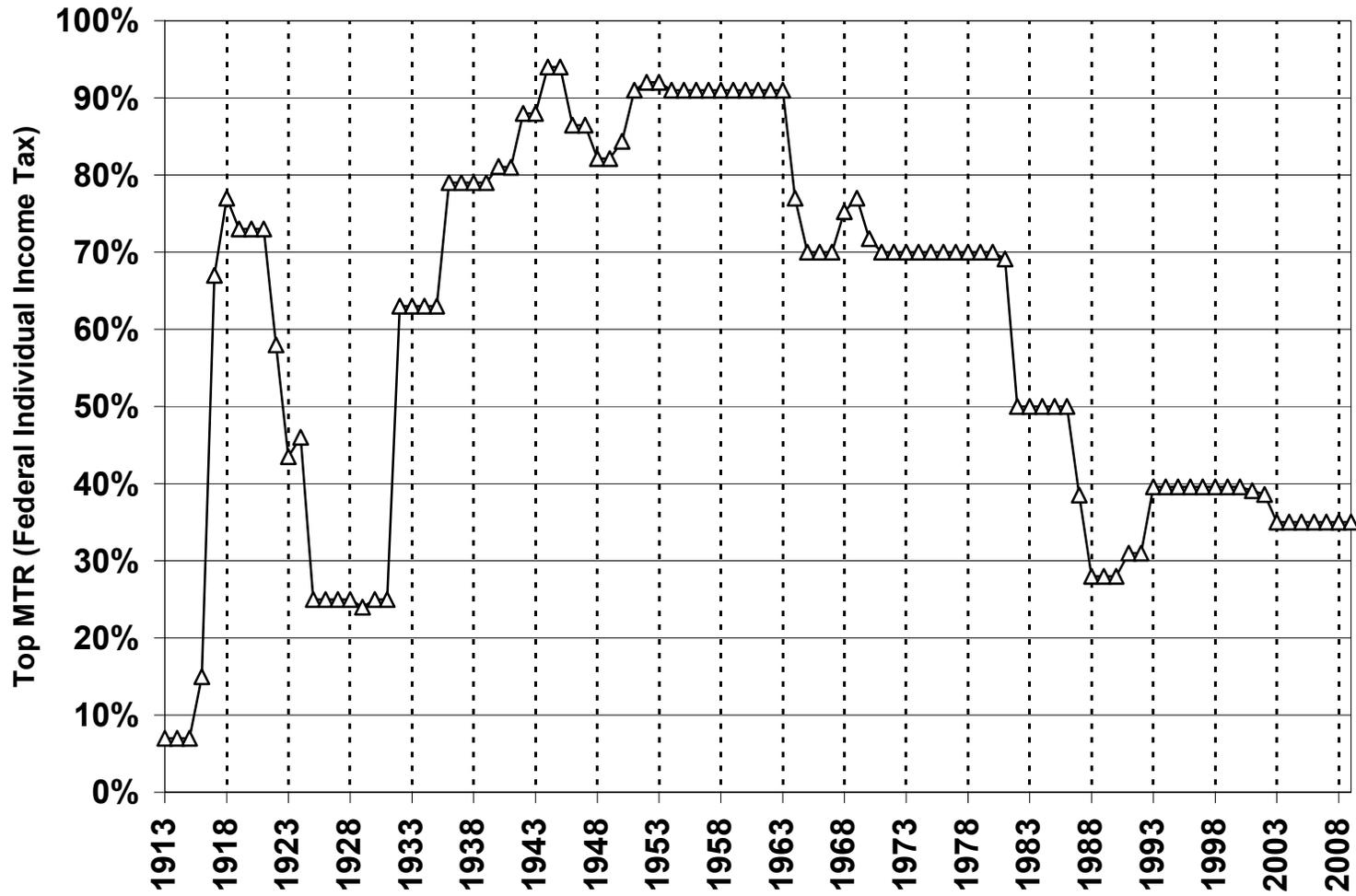
Two empirical regularities from those top income studies:

(1) 1900-1950: Most Western countries experience substantial drop in top income shares due to fall in top capital incomes

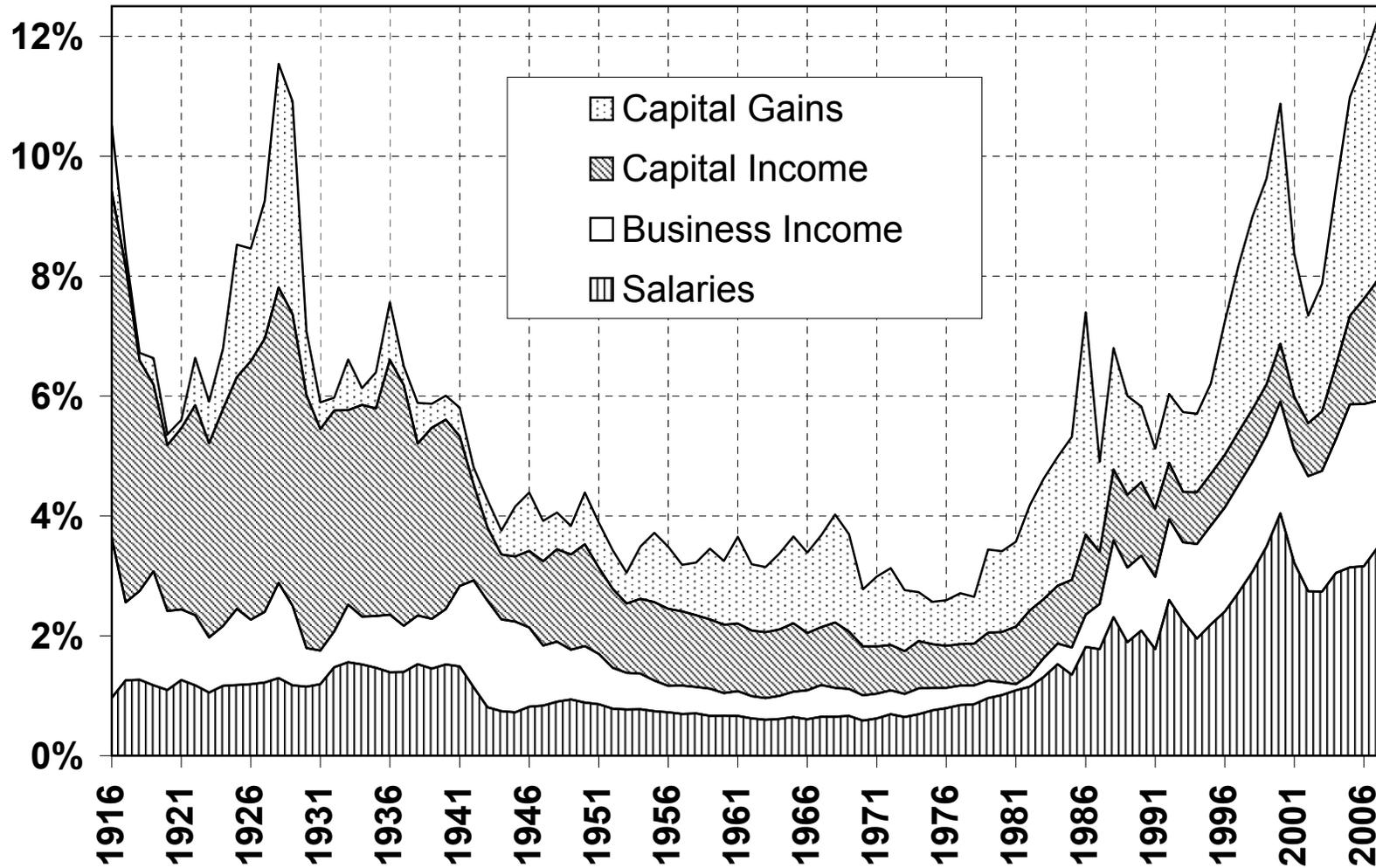
possibly long run consequence of high tax rates which reduce ability to accumulate wealth  $W_t$

$W_{t+1} = W_t \cdot (1 + r_t(1 - \tau_t)) + Savings_t \Rightarrow$  High  $\tau$  makes accumulating wealth  $W_t$  harder

# US Top Marginal Tax Rate (Federal Individual Income Tax)



## US Top 0.1% Income Share and Composition



Source: Piketty and Saez QJE'03, updated to 2007

## INTERNATIONAL EVIDENCE ON TOP INCOMES AND TAX RATES

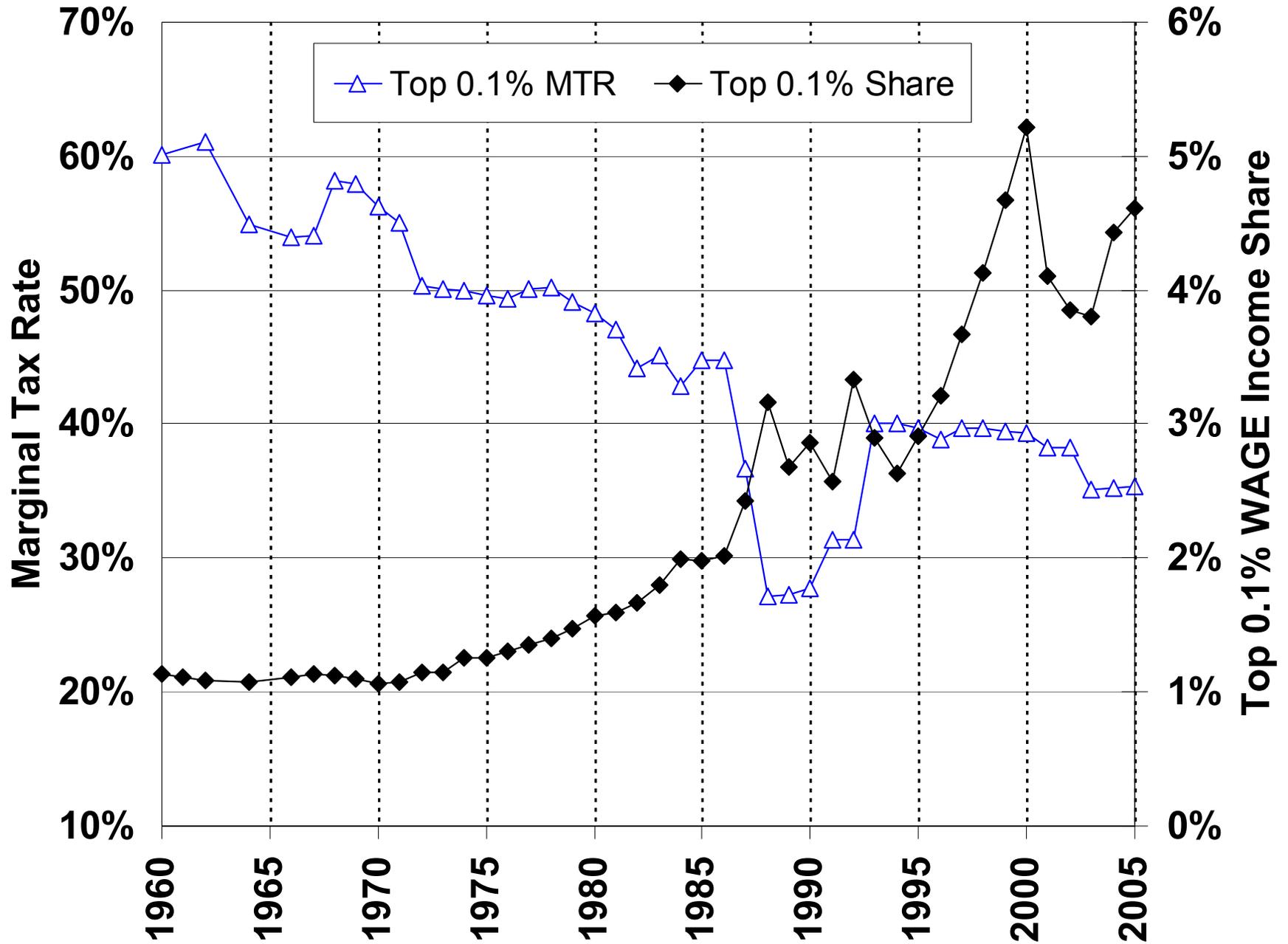
(2) 1970-present: Moderate ( $\leq 50\%$ ) top tax rates is a **necessary** but not sufficient condition for experiencing a surge in top incomes

(a) In the US and UK, top tax rates have fallen and top incomes have increased

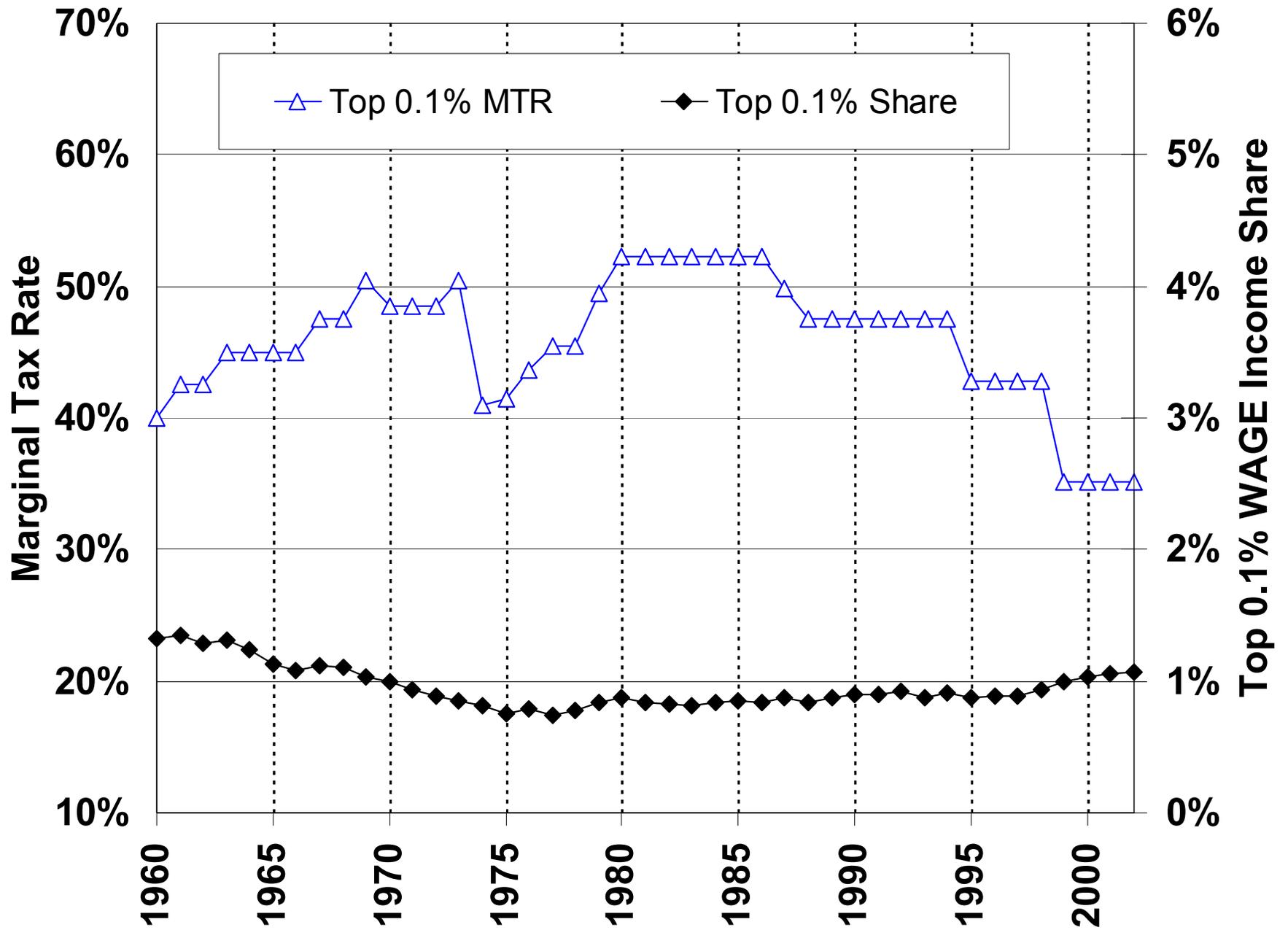
(b) In Japan, top tax rates have also fallen but top incomes have not increased Tax Rates cannot be unique explanation for top income levels

⇒ Technology and top tax rates are not sole determinant of top incomes [and especially top wage incomes]

# Top 0.1% WAGE Share and Marginal Tax Rate in US



# Top 0.1% WAGE income Share and MTR in Japan



## WHAT SHARE OF TOP 1% INCREASE IS DUE TO TAX MANIPULATION? POLITICAL DEBATE

1) **Initially:** (a) Conservative supply-siders happy to claim that surge in top incomes was real economic response to top rate tax cuts (Lindsey '87, Feldstein '95)

(b) Left was claiming that it was partly income shifting (Slemrod '94, Gordon-Slemrod '00)

2) **Today:** (a) Surge in reported top incomes is creating political backlash against the rich  $\Rightarrow$  Conservatives want to downplay increase by insisting it is tax manipulation [Reynolds in Heritage think-tank]

(b) Left wants it to be a real inequality increase to justify progressive tax reforms

## RESPONSE OF TAX EXPENDITURES TO MTRs

Taxable Income = Ordinary Income + Realized Capital Gains  
- Deductions

Deductions include mortgage interest payments, charitable contributions, state and local taxes

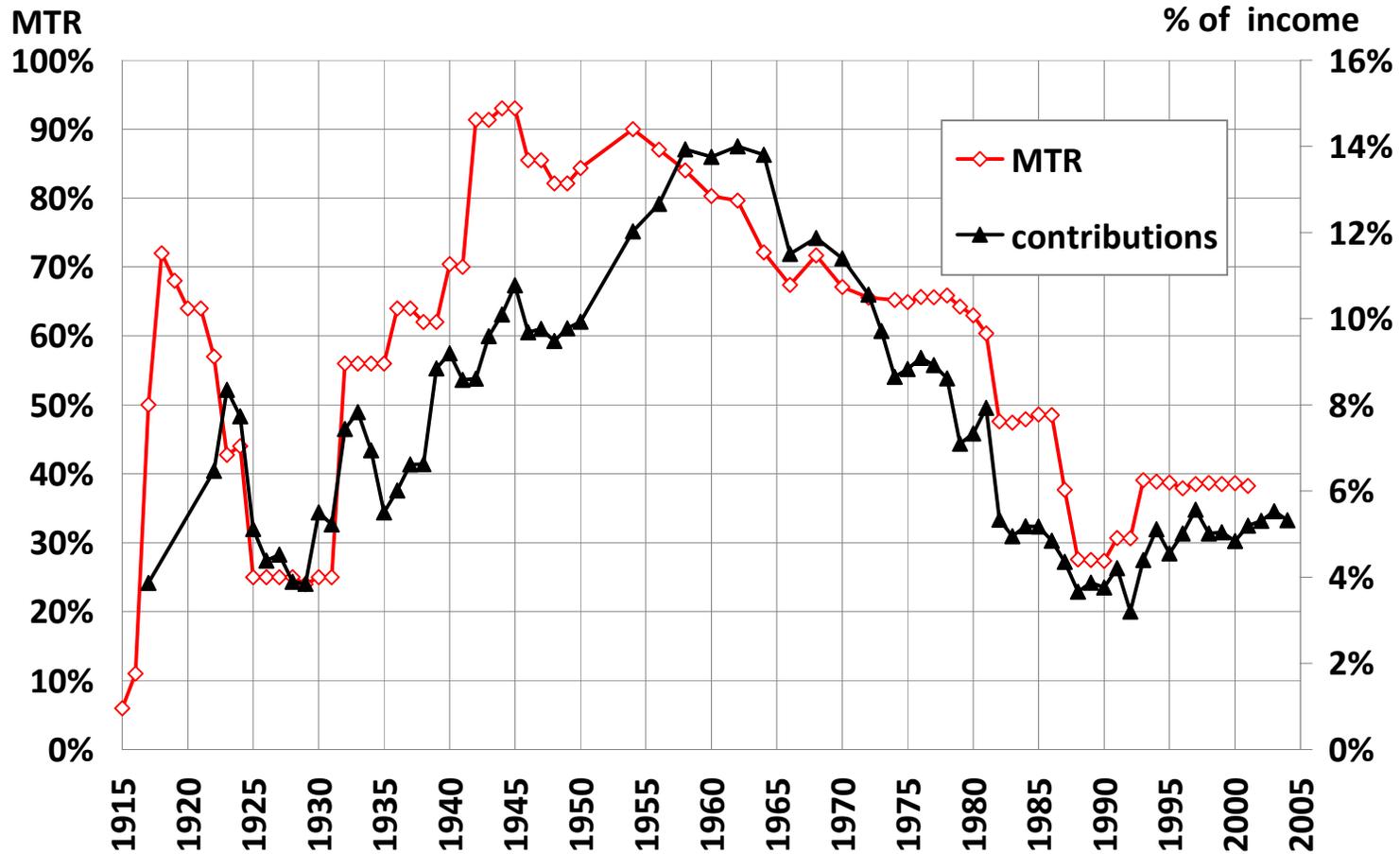
Deductions could also respond to MTRs: MTRs  $\uparrow$   $\Rightarrow$  Deductions more attractive

This response is captured in taxable income response but not ordinary income response

Harder to construct long time series of taxable income because definition changes overtime

Large literature has analyzed response of charitable contributions to tax rates [Andreoni Handbook Chapter, Fack-Landais '09]

**SOURCE IS LANDAIS '09**  
**Charitable contributions as a % of total income and MTR on ordinary income**  
**Top .01% tax units, United States, 1915-2005**  
**(fractiles computed by total income excluding capital gains)**



Note: MTR is for Federal Income Tax only