

Discussion of Chad Jones “Taxing Top Incomes in a World of Ideas”

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An Excellent Paper that Addresses An Important Question

How to **tax top incomes** when:

top incomes (partially) arise from creating successful innovations;

those innovations “trickle down” to others,

innovations are imperfectly targeted by separate research subsidies (precludes directly incentivizing innovation; need to do incentivize indirectly with lower taxes.)

A very simple, tractable model that nests all important effects.

A realistic calibration (given what we know so far) that shows that these growth effects can be important.

We have more and more empirical evidence that taxes affect innovation.

Basic Model

Output: $Y = A^\gamma M^\psi L^{1-\psi}$

A : applied ideas; M : managers; L : workers.

Applied ideas: $A = v_a \mathbb{E}[ez] S_a B^\beta$.

e : effort; z : talent; B stock of basic ideas; S_a : number of entrepreneurs.

Basic ideas: $B = v_b S_b$.

S_b : basic idea researchers (us!)

Output is endogenous to effort: $Y = \left(v \mathbb{E}[ez] S_a S_b^\beta \right)^\gamma M^\psi L^{1-\psi}$

Robust to a fully-fledged micro model (in the steady state).

Key Intuition for the Effects of Taxes in Words

Two bracket tax system: τ_0 for income below \bar{w} , τ for income above.

Typical top revenue maximizing tax formula:

$$\tau^* = \frac{1}{1 + (\text{Pareto parameter}) \cdot (\text{elasticity of top incomes to ret. rate})}$$

New tax formula:

$$\tau_{\text{growth}}^* = \frac{1 - \tau_0 \frac{\text{share of GDP paid to workers and researchers}}{\text{share of GDP in top bracket}} \text{elasticity of GDP to ret. rate}}{1 + \frac{\text{share of GDP to managers and entrepreneurs}}{\text{share of GDP in top bracket}} \text{elasticity of GDP to ret. rate}}$$

Numerator: spillovers on the workers below top bracket. Denominator: sufficient stat is elasticity of GDP to taxes.

Taxes will be lower all else equal because i) overall elasticity higher than we think; ii) spillovers.

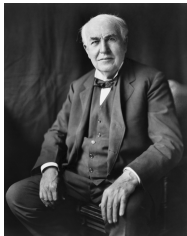
Numerical Results

Point is not to give precise optimal tax rate: rather to show that quantitatively, the growth effects could be large.

Table 1: Revenue-Maximizing Top Tax Rates

Case	Behavioral Elasticity	
	0.20	0.50
Diamond-Saez formula:	0.800	0.667
$\gamma = 0$ and $\tau_0 = 0$:	0.964	0.930
$\gamma = 0$ and $\tau_0 = 0.20$:	0.923	0.851
Degree of IRS, γ		
1/8	0.863	0.742
1/4	0.806	0.644
1/2	0.702	0.477
1	0.524	0.221

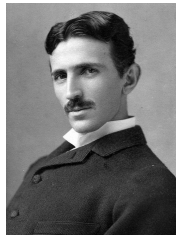
Do TOP Taxes affect Innovation and Inventors?



Thomas A. Edison
Light bulb.
Holds 1093 patents.

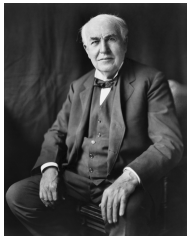


Melvin De Groot
Chocolate ice cream.
Holds 925 Patents.



Nikola Tesla
Alternating Current.
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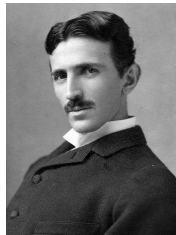
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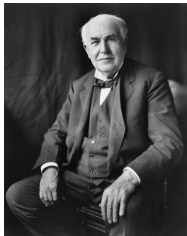
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Mad geniuses? Non responsive to net returns?

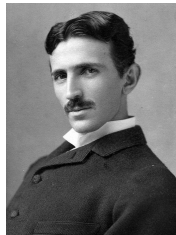
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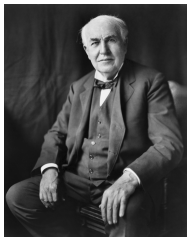
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Or were these inventors affected by taxes?

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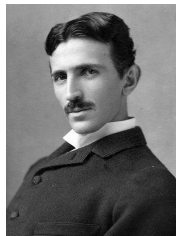
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Personal taxes? Corporate taxes? In terms of patents produced? Quality of patents produced? Where they move? What firms they work for? Where they open research labs?

Macro Effects of Personal Income Taxes 1940-2000

Log Patents & MTR at median

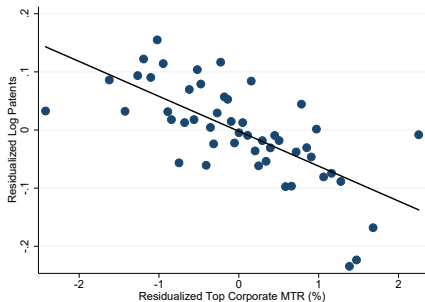


Log Inventors & MTR at median

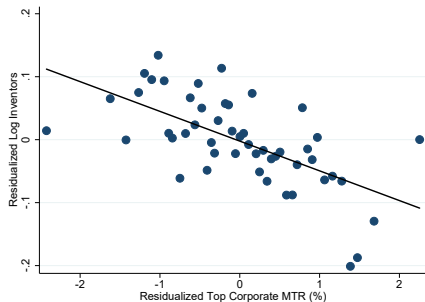


Macro Effects of Corporate Income Taxes 1940-2000

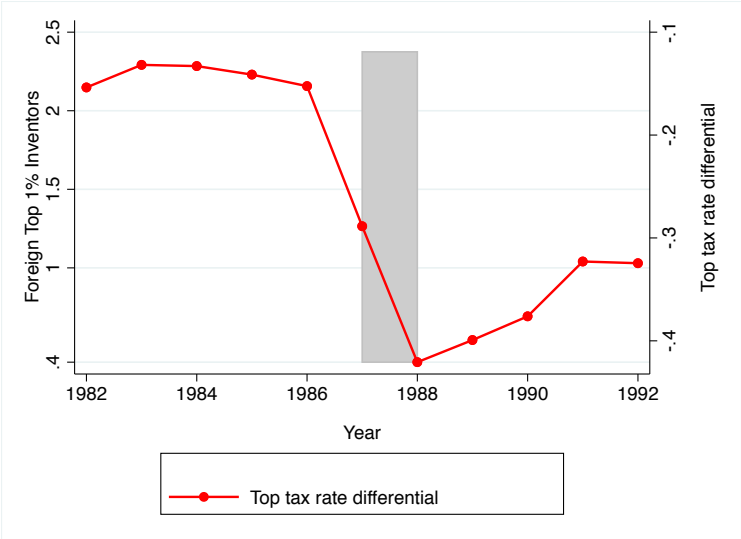
Log Patents & Top Corporate Tax



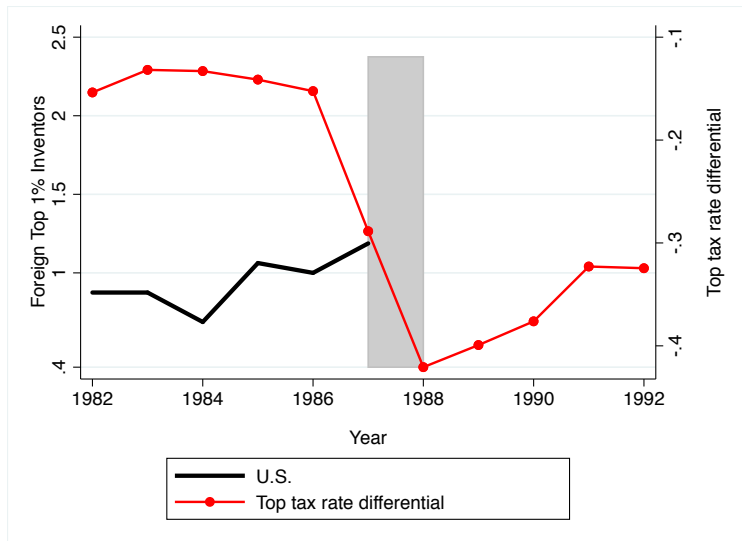
Log Inventors & Top Corporate Tax



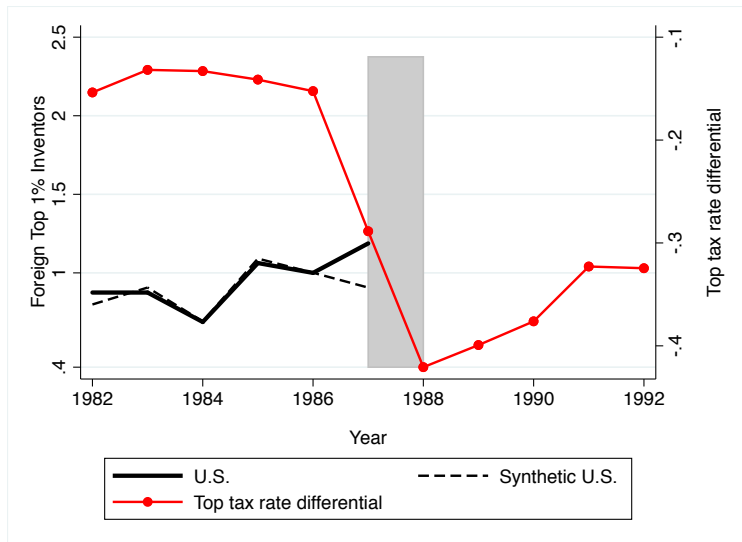
Case Study: U.S. TRA 1986



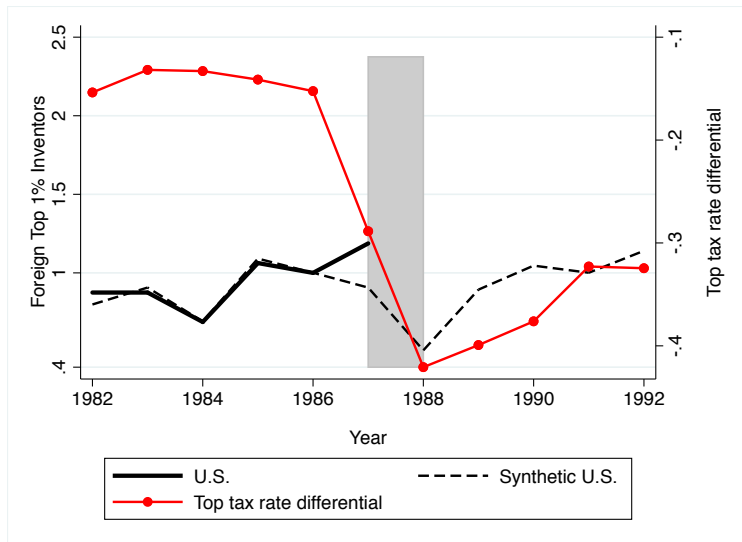
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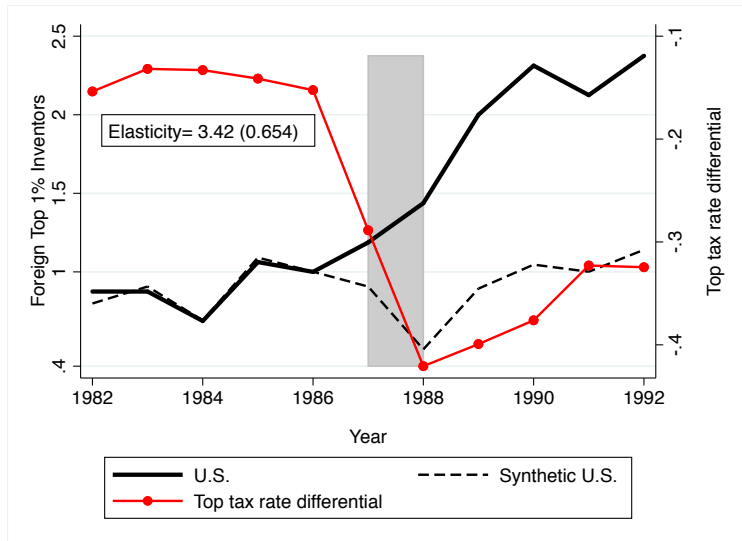
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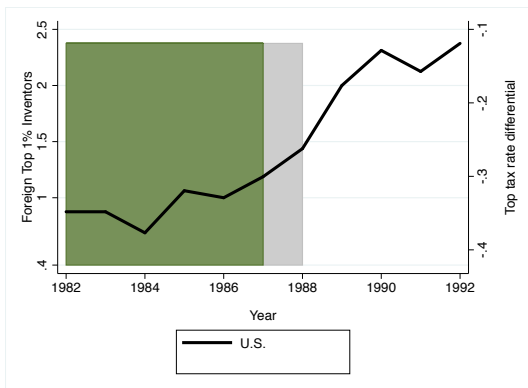
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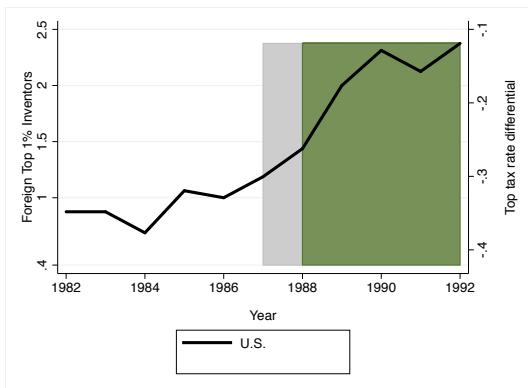
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Structural break in growth of foreign top 1% relative to lower quality inventors.

Inventor quality	Pre T.R.A 1986	Post T.R.A 1986
Top 1%	6.8%	16.4%
Top 10-25%	13%	11.4%

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But do TOP Taxes Affect Growth as well?

There are several additional steps to be able to answer that question.

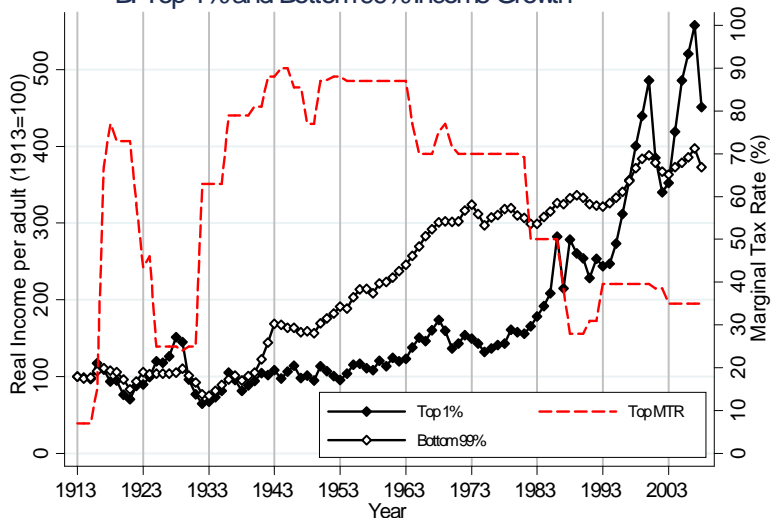
What is tax revenue used for (cannot “hold it constant” easily as in previous studies).

Are we increasing taxes on others (lower-incomes) and doing less transfers as a result? Where in the income distribution are inventors?

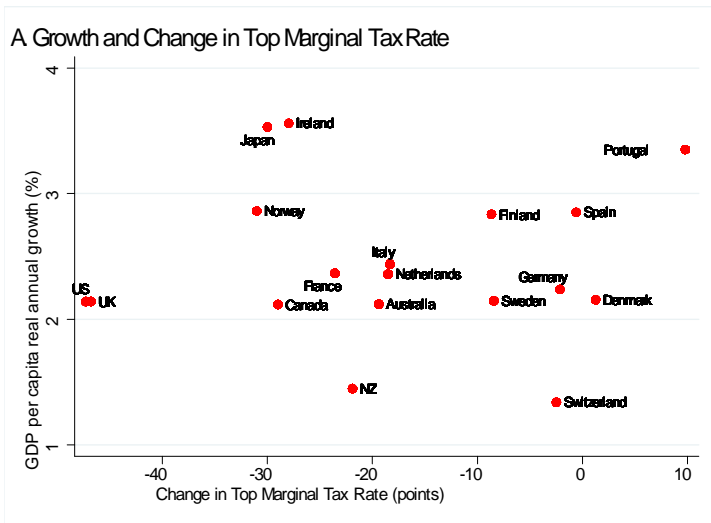
Where does income from innovation go? Who benefits from innovation (Aghion et al. work, Akcigit et al. historically)?

Are incomes at the top mainly driven by innovation income, or rather by other things too (e.g.: rents?) (If mainly other things, top taxes are a blunt tool).

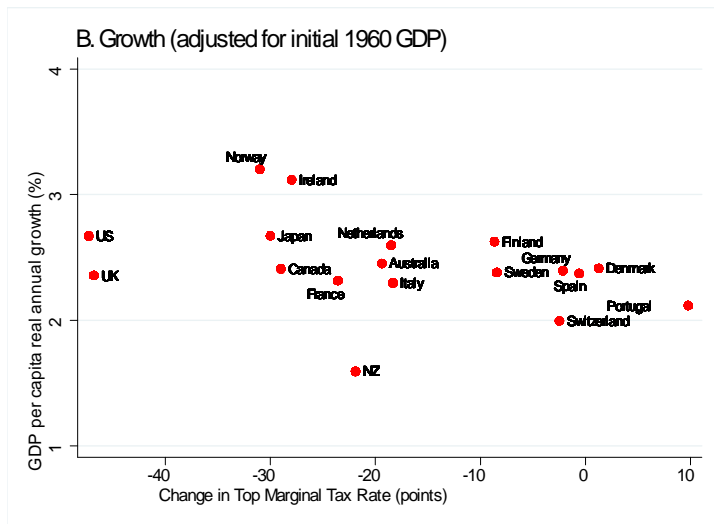
B. Top 1% and Bottom 99% Income Growth



Top tax rates and average growth 1960-2009



Top tax rates and average growth 1960-2009



Going Forward: Open Issues

Two-way interplay between taxation and innovation.

“By-products” of general taxation.

Intentionally designing tax system to foster innovation.

Thinking of other tools: sector-specific taxes?

Intellectual Property as a “reward” (can act as a substitute: Akcigit et al. 2016).

Part of incomes are rents? What is not really tested is “trickle-down.”

Income vs. wealth taxation: different allocative effects.