METHODOLOGY PRINCIPLES

Tax theory can be used for policy if three conditions are met:

1) **Relevance:** Theory based on economic mechanisms empirically relevant and first order

2) **Robustness:** Theory reasonably robust to changes in modeling assumptions

3) **Implementation:** Policy prescription is implementable (socially and administratively)

Talk will focus on the optimal profile of taxes and transfers focusing specifically on top and bottom
TOP INCOMES AND TAXES

Top US incomes have surged in recent decades: top 1% income share increased from 9% in 1970 to 23.5% in 2007 [14.5 income pts = 9 GDP pts]

In 2007, top 1% incomes [$> 400K] paid average Fed individual tax rate of “only” 22%

Absent behavioral responses, increasing fed indiv tax rate on top 1% from 22% to 43% would raise revenue by 3 pts of GDP [$450bn/year]

⇒ Core optimal income tax problem: Top 1% has large potential tax capacity but increasing top 1% marginal tax rate might reduce top incomes through behavioral responses
OPTIMAL TOP INCOME TAX RATE

1) Mirrlees ’71: builds modern theoretical framework to tackle the problem

[Sadka ’76-Seade ’77: MTR on top earner should be zero]

2) Diamond AER’98: case with no income effects yields simple formula for top rate

3) Saez ’01: Diamond’s formula is simple to obtain and robust

Suppose MTR is $\tau$ in top bracket above income $z^*$. Consider $d\tau$ above $z^*$
Optimal Top Income Tax Rate (Mirrlees ’71 model)

Disposable Income

c = z - T(z)

Market income z

Top bracket:
Slope 1 - \( \tau \)

Reform:
Slope 1 - \( \tau - d \tau \)
Disposable Income
\(c = z - T(z)\)

Market income \(z\)

\(z^* - T(z^*)\)

Optimal Top Income Tax Rate (Mirrlees ’71 model)

Mechanical tax increase:
\(d\tau [z - z^*]\)

Behavioral Response tax loss:
\(\tau dz = -d\tau e^z \tau/(1-\tau)\)
OPTIMAL TOP INCOME TAX RATE

Revenue maximizing top \textbf{marginal tax rate} (above $z^*$):

$$\tau^* = \frac{1}{1 + a \cdot e}$$

where $e$ is the \textbf{elasticity} of top incomes with respect to $1 - \tau$

and $a = \frac{z_m}{z_m - z^*}$ is \textbf{Pareto} parameter with $z_m = \text{average income above } z^*$

$a$ very stable with $z^*$ (around 1.5 today in the US)

Merrlees '71 model: If social marginal utility converges to zero
\Rightarrow optimal asymptotic tax rate is $\tau^* = 1/(1 + a \cdot e)$
Empirical Pareto Coefficient

\[ a = \frac{z_m}{z_m - z^*} \text{ with } z_m = \mathbb{E}(z | z > z^*) \]

\[ \alpha = \frac{z^* h(z^*)}{1 - H(z^*)} \]

\[ z^* = \text{Adjusted Gross Income (current 2005 $)} \]
ZERO TOP RATE RELEVANCE

Actual income distribution is finite and $z_m = z^*$ at the top so that $a = z_m / (z_m - z^*) = \infty$ and $\tau^* = 0$ at the top. However:

1) Result applies only to highest earner (and not second highest)

2) Govt does not know top ex-ante, top income tail is a like a finite draw from a Pareto distribution

If govt maximizes expected revenue from the top then $\tau^* = 1 / (1 + a \cdot e)$ remains the optimal tax rate (no deviation can increase expected revenue)
SHOULD $T'(z)$ INCREASE FOR HIGHER EARNERS?

With no income effects, simple optimal tax formula $T'(z)$ [Diamond AER'98]

$$T'(z) = \frac{1 - G(z)}{1 - G(z) + \alpha(z) \cdot e(z)}$$

1) $e(z)$ is elasticity at income level $z$

2) $G(z)$ is the social marginal welfare weight on individuals above $z$ ($G(z) \downarrow z$)

3) $\alpha(z) = zh(z)/[1 - H(z)]$ is the “local” Pareto parameter, about constant in upper tail

$\Rightarrow$ If $e(z)$ constant, then $T'(z)$ should increase toward $\tau = 1/(1 + a \cdot e)$
WHAT IS THE ELASTICITY FOR TOP EARNERS?

Large empirical literature on $e$. Two main findings:

1) $e$ is sometimes large but large responses are due to tax avoidance responses

2) No compelling evidence that real responses are large

Real response vs. avoidance response is critical because:

a) avoidance elasticity depends on tax law (loopholes, etc.) and hence can be reduced by base broadening

b) avoidance responses often generate fiscal or classical externalities

Key policy question: Is it possible to eliminate avoidance elasticity using base broadening, etc.? or would new avoidance schemes keep popping up?
What is the optimal phase-out rate $\tau_1$ for transfers? Theoretical literature started with the standard intensive labor supply model.

0) Diamond NTJ’68 presented informal arguments justifying high phasing-out rates at the bottom.

1) Mirrlees ’71 provided formal model $\Rightarrow$ Phase-out rate is positive.

2) Seade ’77 zero rate at the bottom: applies only if bottom earnings are positive.

3) If (realistically) some have zero earnings, then phasing-out rate at bottom should be high.
Reform: Increase $\tau_1$ by $d\tau_1$ and $c_0$ by $dc_0 = z_1 d\tau_1$

$g_0 >> 1 \Rightarrow$ welfare effect $>>$ mechanical fiscal cost

Disposable Income $c$

Slope $1 - \tau_1$
Reform: Increase $\tau_1$ by $d\tau_1$ and $c_0$ by $dc_0 = z_1 d\tau_1$

$g_0 \gg 1 \Rightarrow$ welfare effect $>>$ mechanical fiscal cost

Fiscal cost due to behavioral responses proportional to $\tau_1/(1-\tau_1)$ and elasticity $e_0 = (1-\tau_1)/H_0 \frac{dH_0}{d(1-\tau_1)}$

Optimal phase-out rate $\tau_1$:

$$\tau_1 = \frac{g_0 - 1}{g_0 - 1 + e_0}$$

Example: if $g_0 = 3$ and $e_0 = 0.5$, $\tau_1 = 80\%$
OPTIMAL TRANSFERS AT THE BOTTOM

Concern that high-phasing out rate discourages labor force participation rather than hours of work on the job [confirmed by empirical studies over last 15-20 years]

a) Diamond JpubE'80 built model with fixed hours and participation decision only and showed that marginal tax rate is no longer necessarily positive

b) Diamond’s result dormant for 20 years but then generated a flurry of studies (Saez '02, Laroque '05, etc.) showing that a negative phasing-out rate at the bottom is optimal if labor supply responses are concentrated along extensive margin

⇒ Low earners should be subsidized on the margin
Starting from a Means-Tested Program

Consumption $c$

Earnings $w$

$G$

$45^\circ$

$0$

$w^*$

Earnings $w$
Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution.
Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue
Introducing a small EITC is desirable for redistribution. Consumption c increases with earnings w. Participation response saves government revenue. Win-Win reform means everyone benefits.
Starting from a Means-Tested Program

Introducing a small EITC is desirable for redistribution

Participation response saves government revenue

Win-Win reform

If intensive response is small