#### Class 1

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## Income Inequality

- Great concern about income inequality in many countries
- Inequality has risen quite dramatically in the US over the past 40 years
- Different ways to combat inequality, but a key one is redistribution through taxes and transfers
  - Other ways include education & training, unions, minimum wages
- What should the tax and transfer system look like?
- Goal is to provide maximal redistribution while minimally distorting incentives for work, investment in skills etc.
- Also need to collect revenue to pay for public goods
- But let's quickly review what we mean by inequality

#### Household budget constraint

$$c + a' = a + \sum_{i=1}^{N} w_i h_i + b^P + d + b^G - \tau$$

- w<sub>i</sub> individual wage
- w<sub>i</sub>h<sub>i</sub> individual labor supply
- $\sum_{i=1}^{N} w_i h_i$  family labor supply
- $b^P + d$  family/social networks + financial markets

- $b^G \tau$  public transfers and tax system
- c = ... + a a' borrowing/saving

## Consumption

- Consumption is perhaps what we care most about (adjusted for household size?)
- But fundamental source of dispersion in consumption is dispersion in wages
- Why are wages different?
  - Differences in innate ability
  - Differences in human capital investments
  - Experience, discrimination, part-time penalties

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# How to Measure Inequality?

- One way to start: just plot all the percentiles
- Alternative summary statistics:
  - Percentile ratios: 90/50, 50/10, 90/10
  - Variance of logs emphasizes inequality at the bottom

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Gini coefficient – emphasizes inequality at the top

#### Inequality in Wages









#### Inequality in Household Earnings



#### **Percentiles**



#### **Role of Taxes and Transfers**









#### What to Tax?

- Should we tax labor income, capital income, consumption, wealth?
- Actual US tax system is a complicated mishmash
- Most Federal tax revenue comes from taxing household labor income (states also use property taxes and sales taxes)
- Compared to other countries, consumption is taxed lightly

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# US Receipts (Slemrod & Bakija)

#### Table 2.1

Sources of tax revenue for U.S. governments, 2014

	Billions of 2014 dollars	Percentage of taxes at that level of government	Percentage of GDP
Total federal tax revenues	\$3,138	100.0%	18.1%
Personal income tax	1,397	44.5	8.1
Contributions for social insurance	1,145	36.5	6.6
Corporate income tax	418	13.3	2.4
Excise taxes and customs duties	138	4.4	0.8
Estate and gift taxes	19	0.6	0.1
Other federal tax revenues	22	0.7	0.1
Total state and local tax revenues	\$1,541	100.0%	8.9%
Sales taxes	525	34.1	3.0
Property taxes	456	29.6	2.6
Personal income taxes	350	22.7	2.0
Corporate income taxes	58	3.8	0.3
Contributions for social insurance	19	1.2	0.1
Estate and gift taxes	5	0.3	0.0
Other state and local tax revenues	129	8.4	0.7
Total federal, state, and local tax revenues	\$4,680	100.0%	27.0

Source: Authors' calculations based on data from U.S. Bureau of Economic Analysis

## Taxes Across Countries (Slemrod & Bakija)

#### Table 2.2

International comparison of taxes as a percentage of GDP, 2013

	United States	OECD average (a)	Japan	United Kingdom	Canada	Germany	Sweden
Total taxes	25.4	34.2	30.3	32.9	30.5	36.5	42.8
Income taxes	12.0	11.5	9.8	11.7	14.5	11.3	14.8
Personal income taxes	9.8	8.8	5.8	9.1	11.2	9.5	12.2
Corporate income taxes	2.2	2.9	4.0	2.5	3.0	1.8	2.6
Consumption taxes (b)	3.7	10.3	4.8	10.4	6.9	9.8	11.8
Value-added taxes	-	6.3	2.8	6.9	4.0	7.0	8.9
Sales taxes	2.0	0.1	-	-	0.3	-	-
Social insurance taxes	6.1	9.1	12.4	6.2	4.8	13.9	10.0
Other taxes	3.6	3.3	3.3	4.6	4.3	1.5	6.2
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Source: Authors' calculations based on data from Organisation for Economic Cooperation and Development (2015c). 
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## Taxes and Transfers Should be Studied Jointly

- One key point: people care about taxes net of transfers ⇒ doesn't make much sense to study taxes in isolation
- In particular, many transfers unemployment insurance, disability benefits – are tied to earnings: ↑ earnings ⇒ ↓ benefits
- So for many, especially low earnings, how extra earnings impact transfers is a bigger concern than how extra earnings affect taxes
- Also two ways actual tax and transfer systems redistribute:
   (1) marginal tax rates increase with income, and (2) transfers to low earners
- Can have lots of redistribution with a constant tax rate

## The Shape of the Tax Schedule

- How generous should transfers be?
- What is the right level of marginal tax rates?
- How should marginal tax rates vary with income?

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Lots of political debate on these points

## Considerations

- How important, quantitatively are distortions?
- How much does the planner / society care about inequality?
- How much private insurance is there? Does public insurance crowd out private?
- How much spending does the government want / need to finance?
- Should taxes apply at the individual level or at the household level?
- How should taxes vary with age, marital status, number of kids?

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## **Basic Approaches in Literature**

- Ramsey
  - Parametric functional form for taxes (e.g. affine)
  - Solving for optimum schedule just means solving for a few parameter values
- Mirrlees
  - Solve for optimal non-parametric schedule
  - No ad hoc restrictions  $\Rightarrow$  should be able to deliver higher welfare
  - Might be harder to compute
- Shape of optimal schedule still hotly debated, e.g.:
  - Should transfers be targeted to the poorest, and rapidly phased out as income rises? (means-tested transfers)

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Or should transfers be more universal? (UBI)

## **Broader Questions**

- Governments can finance spending with taxes or by issuing debt
  - What is the right mix?
  - Do low interest rates make debt financing a better option?
  - What does debt sustainability mean when interest rates are negative
- How should we tax the rich? Wealth taxes?
- How should we think about interaction between federal and state taxes / spending, and tax competition between states?
- How should the govt insure employment and health risks? (UI and DI)

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- Evidence from COVID UI expansions?
- Health insurance
- Pre-school, K-12, and college subsidies



- Economics has made lots of important contributions to theory of taxation: Ramsey, Mirrlees, Minnesota!
- But important to know (i) how the government actually raises revenue, and (ii) what it spends it on
- Actual taxes and benefits are complicated (dependence on current and past income, wealth, health, family composition, age etc.)

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- But we can model all this richness!
  - No excuse for assuming linear income taxes

## Papers

- Arellano, Aguiar, Amador (2021): Micro Risks and Pareto Improving Policies
- Dariuch, Fernandez (2021): Universal Basic Income: A Dynamic Assessment
- Guner, Kaygasuz, Ventura (2021): Rethinking the Welfare State
- Hosseini, Kopecky, Zhao (2021): How Important Is Health Inequality for Lifetime Earnings Inequality?
- Boar, Midrigan (2021): Efficient Redistribution
- Dyrda, Pedroni (2021): Optimal Fiscal Policy in a Model with Uninsurable Idiosyncratic Shocks
- Guvenen et al. (2019): Use It or Lose It: Efficiency Gains from Wealth Taxation