

# Public Economics

## Lec 10: Income redistribution

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# AM's reminders

- Group deadline!

# Reading list

- **RG ch. 12-13**

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- **RG ch. 12-13**

## Moral issue, value judgements

### ① Economists should have no say on it

- As long as there's something to optimize, we're *on it like seagulls at a tip* (cit. Nick Cummins, AKA The Honey Badger)
- **Welfare function**  $\implies$  **efficiency**
- **Minimize** excess burdens

### ② Governments should have no say on it

- If a government is active, there's going to be redistribution
- **Even when** ↗ **efficiency** (Externalities, PGs, asy. info)

# How to measure income inequality

- **Measure the dispersion of a distribution**
- **Interquartile ranges**
  - E.g. share of income by Q10 VS Q90
- **Gini** coefficient
- **Poverty rates**
  - Poverty treshold crucial
  - **Relative** VS **absolute** poverty

# Income distribution in the US

## Share of household income of quintile

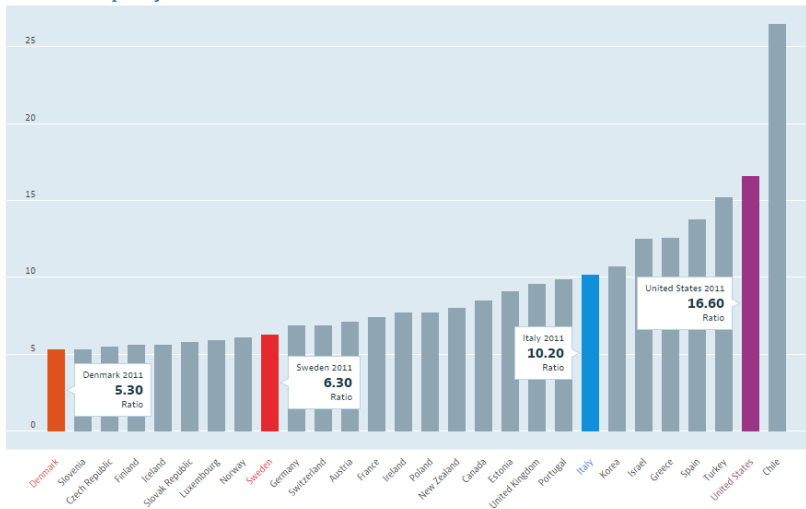
	2013	2011	2009	2007	2005
Lowest quintile	3.2	3.2	3.4	3.4	3.4
Second quintile	8.4	8.4	8.6	8.7	8.6
Third quintile	14.4	14.3	14.6	14.8	14.6
Fourth quintile	23.0	23.0	23.2	23.4	23.0
Highest quintile	51.0	51.1	50.3	49.7	50.4
Top 5 percent	22.2	22.3	21.7	21.2	22.2

- **Wealth distribution much more unequal**

# Interdecile ratios in 2011

## Income inequality

Interdecile S90/S10, Ratio, 2011



Compare countries on [data.oecd.org](http://data.oecd.org) (Terms)

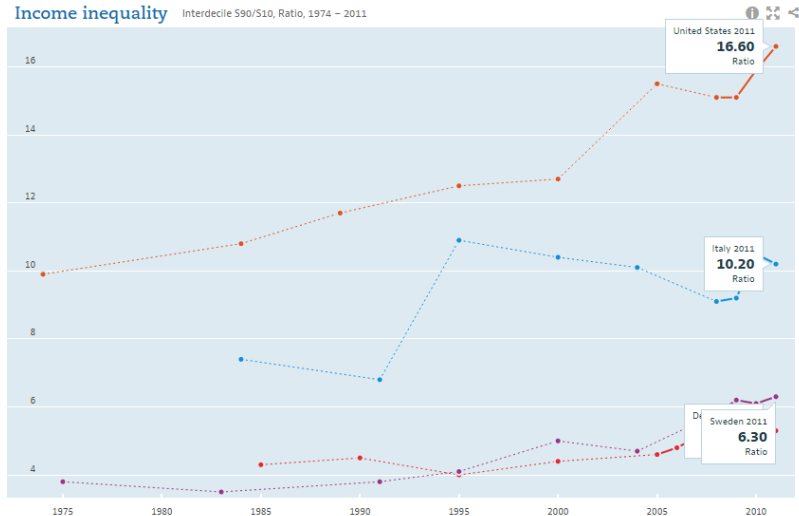




# Interdecile ratios over time

## Income inequality

Interdecile S90/S10, Ratio, 1974 - 2011

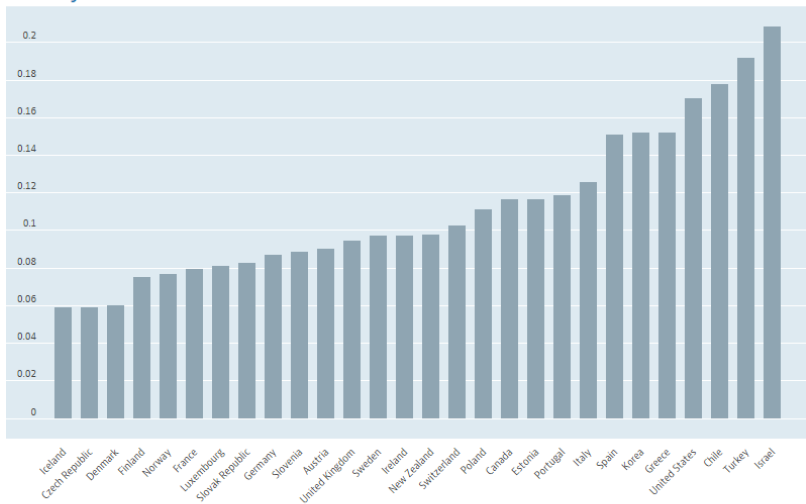


Compare countries on [data.oecd.org](http://data.oecd.org) (Terms)



# Poverty rates in 2011

Poverty rate Total, % in same age group, 2011



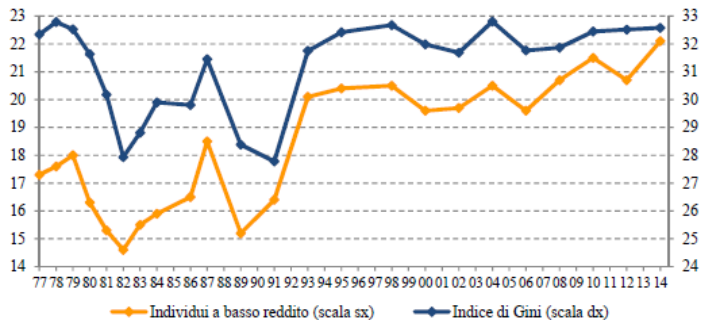
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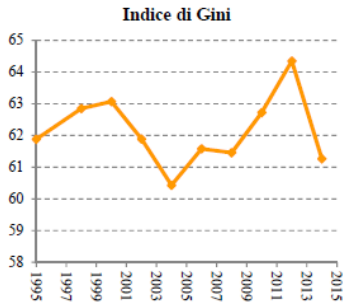
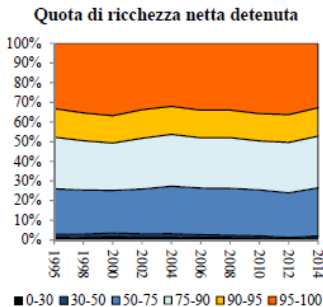
# How to measure income inequality

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# Examples of inequality measures



# Examples of inequality measures



Fonte: Elaborazioni sull'archivio storico dell'Indagine sui bilanci delle famiglie italiane, versione 9.0.

# Problems with measuring inequality

- **Income measure**
  - **Taxes and transfers might be ignored** (US census)
  - **In-kind benefits** ignored (food stamps/home production)
  - **Time interval** (lifetime income would be best)
- **Consumption?**
  - Preferred measure for developing countries
  - Harder to measure
- Defining the **unit of observation**
  - Household: **Scaling**

## ① Should a government redistribute?

# Redistribution: Edgeworth-style model

- 1 **Diminishing marginal utility:**  $U'' < 0$ 
  - Depends only on **income**, same for everyone
- 2 **Additive welfare function**
- 3 **Total amount of income is fixed**

⇒ **optimal redistribution = complete equality**  
**Useful benchmark**



# Redistribution: Edgeworth-style model

- 1 **Diminishing marginal utility:  $U'' < 0$** 
  - Depends only on **income**, same for everyone
  - **Do we have same utility function?** (leisure)
  - **Decreasing for goods, perhaps not for income**
- 2 **Additive welfare function**
  - **Not crucial: Rawlsian  $\implies$  same results**
- 3 **Total amount of income is fixed**
  - **Taxation: nope**

$\implies$  **optimal redistribution = complete equality**

**Useful benchmark**

# Redistribution not Pareto-improvements

- In general, redistribution **does not** improve **efficiency**
- **Exception:** individual utility depends on other people's happiness
  - ... but then why using the government
  - **Charity**

## However:

- **Insurance argument** (DI)
- ↗ **inequality**  $\implies$  ↘ **stability, low econ. performance**
  - Hard to show empirically, but literature towards this direction
- Generally, rationale for redistribution is social preferences
  - **Welfare function**

## ② How can a government redistribute?

# Redistribution tools

- **In-kind transfers / subsidies**
  - Food stamps
  - Social housing
  - Medicaid
- **Income maintenance programs**
  - Welfare (kontanthjælp in DK)
  - Unemployment insurance
- **Tax credits**
  - **Incentives to work**
- **Training programs**
  - Increase market returns of working

# In-kind transfers

- **Similar in spirit to income maintainance**
  - If item cannot be sold in the market, affects budget constraint
  - As always, total effect ambiguous
  - **Bunching**
  - **Special case: Medicaid** (notch)
- **Transfer of specific good, not money**
- **Cons:**
  - Utility per unit of expenditure lower
    - **Even if financed by lump-sum tax, excess burden**
  - Individuals know best what they need
- **Pros:**
  - Easier to target, frauds less likely
  - Might be cheaper (e.g housing)
  - Politically attractive (resources channelled directly to supplier)

# Income maintenance characterization

- Trade-off between **leisure** and **work**
  - **Leisure partially subsidized**

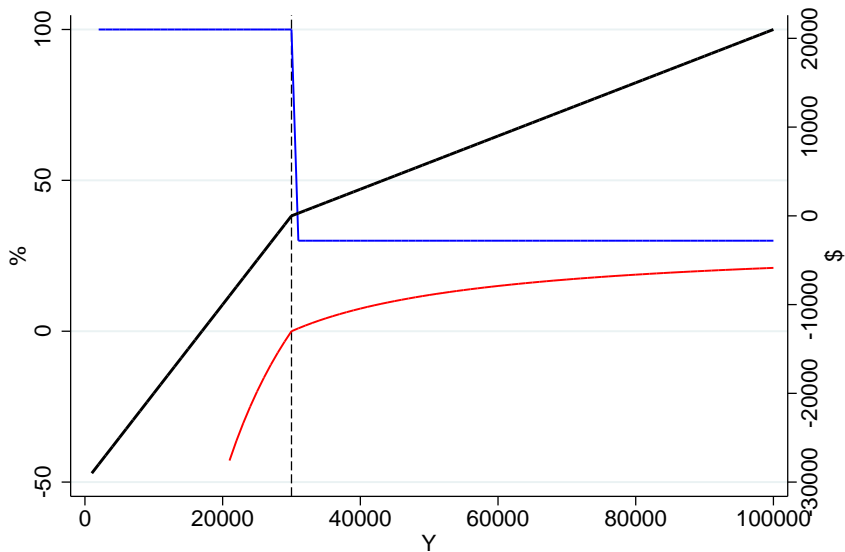
$$B = \max(0, G - tE) \qquad B = 0 \iff E \geq \frac{G}{t}$$

- **Taxation** analysis
  - **$t$  marginal** tax rate

- **Example**

$$\begin{cases} G = 30K \\ t = 100\% \end{cases} \implies B = 30K - E \text{ if } E < 30K$$

# Income maintenance example



— T (right)    — MTR    — ATR

# Work incentives under IM

- **Shift in budget constraint**
- **Effect on labor supply depends on preferences**
  - **Income** + **Substitution** effect same direction
  - However, depends on starting point, might have 0 effect
  - UI similar
- **Additional conditions**
  - **Work requirements**, workfare
  - **Time limits**
  - **Mean-testing**: family structure + sources of income

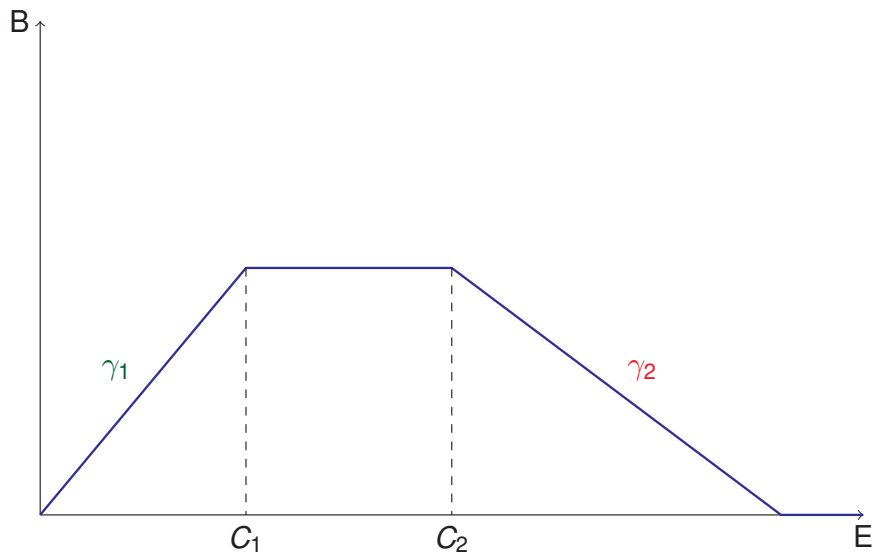


# Tax credits

- **Income maintenance incentivizes leisure**
- **Tax credits incentivize labor**
  - Only **working** poor are eligible
  - **Credit redeemable**
  - Typically **phase-in** and **phase-out** ranges

$$B = \begin{cases} \gamma_1 E & \text{if } E \leq C_1 \\ \gamma_1 C_1 & \text{if } C_1 < E \leq C_2 \\ \max(0, \gamma_1 C_1 - \gamma_2(E - C_2)) & \text{if } C_2 \leq E \end{cases}$$

# Earnings and tax credits



# Trainings & Education

- **Idea:** incentivize work by increasing wage
  - **Price for leisure increases**
  - **Inequality:** different backgrounds
- **Education**
  - **Heckman:** returns to early-life interventions very high
  - **Requires cost-benefit analysis**, e.g **project star**
  - **Equity**, not efficiency argument
- **Training (adult life)**
  - **Heckman:** not very effective
  - Not enough to move people out of poverty
  - Marginal treatment effects story

# For next time

- **RG, ch.12, ex 8**
- **RG, ch.13, ex 5**