

Introduction to Public Economics

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(EIEF)

Public Economics - Lecture 1

Partly based on slides by Raj Chetty and Emmanuel Saez

Advance Public economics - Rules of the game

Class days: Thursdays 13:00-14:30, Fridays 15:15-16:45

Grading rules: my part counts 60% of total grade

1. **Two class assignments (weeks 4 and 8):** solved individually
 - 1.1 40% of the grade if you take the exam on the first available date (I appello)
 - 1.2 20% of the grade if you take the exam later
2. **Paper presentation (week 8):** individual presentations (I choose papers)
 - 2.1 40% of the grade
3. **Final exam:** TRUE/FALSE questions (with motivation) + analytical exercise
 - 3.1 20% of the grade if you take it on the first available date (I appello)
 - 3.2 40% of the grade if you take it later

Public economics - Definition

Public Economics = Study Role of the Government in the Economy

Government is instrumental in most aspects of economic life:

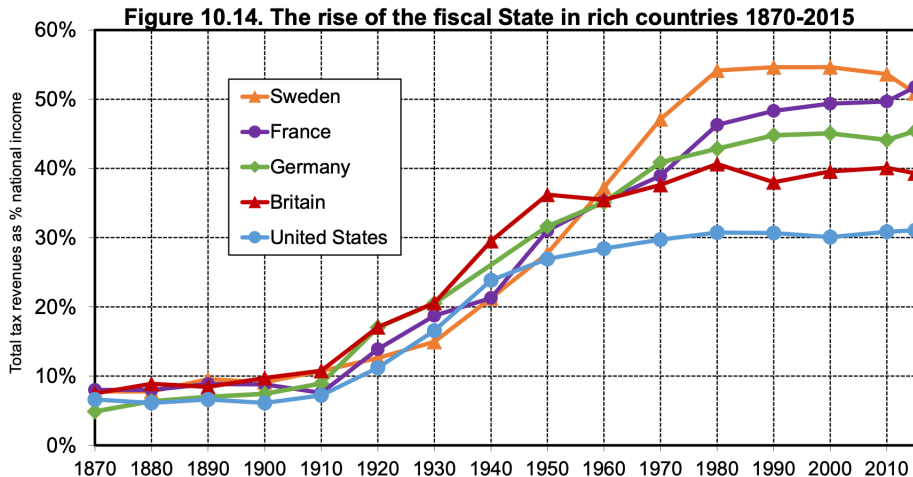
1. Government in charge of huge **regulatory structure**
2. **Taxes**: advanced economies collect 30-50% of National Income in taxes
3. **Expenditures**: taxes fund
 - public goods (infrastructure, public order and safety, defense)
 - social state (Education, Retirement benefits, Health care, Income support)
4. **Macro-economic stabilization fiscal stimulus, bailout policies**

⇒ We pool a large share of our incomes through government

Some facts about taxes and spending

- ▶ **Government Growth:** Size of government grows over development
 - < 10% (of National Income) in less developed economies, 30-50% in advanced
- ▶ **Government Size Stable** in richest countries after 1980
- ▶ **Government Growth** due to **expansion of the social state**
 - (a) public education, (b) public retirement benefits,
 - (c) public health insurance, (d) income support programs
- ▶ **Govt spending > Taxes:** Richest countries run deficits, have high debt-to-GDP
 - particularly during Great Recession of 2008-10 and Covid 2020-21

Fiscal State has increased in advanced economies

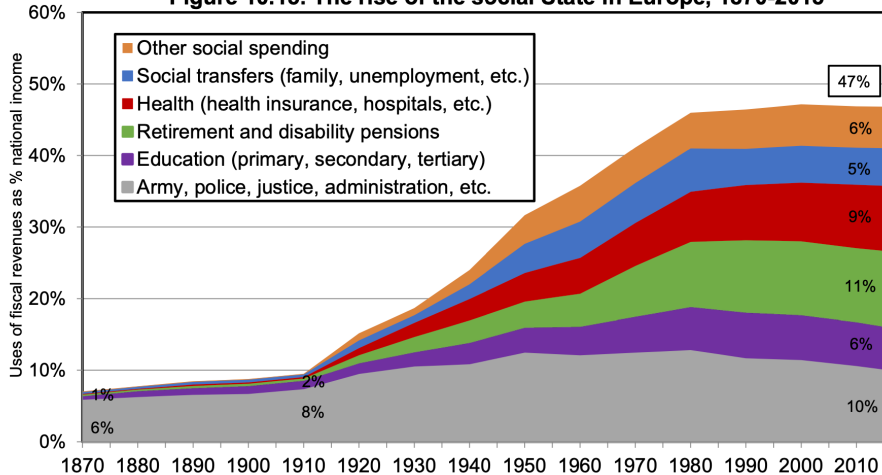


Interpretation. Total fiscal revenues (all taxes and social contributions included) made less than 10% of national income in rich countries during the 19th century and until World War 1, before rising strongly from the 1910s-1920s until the 1970s-1980s and then stabilizing at different levels across countries: around 30% in the U.S., 40% in Britain and 45%-55% in Germany, France and Sweden.

Sources and series: see piketty.pse.ens.fr/ideology.

Fiscal State has increased due to expansion of the social state

Figure 10.15. The rise of the social State in Europe, 1870-2015



Interpretation. In 2015, fiscal revenues represented 47% of national income on average in Western Europe et were used as follows: 10% of national income for regalian expenditure (army, police, justice, general administration, basic infrastructure: roads, etc.); 6% for education; 11% for pensions; 9% for health; 5% for social transfers (other than pensions); 6% for other social spending (housing, etc.). Before 1914, regalian expenditure absorbed almost all fiscal revenues. **Note.** The evolution depicted here is the average of Germany, France, Britain and Sweden (see figure 10.14). **Sources and séries:** see piketty.pse.ens.fr/ideology.

Three questions in public economics

1. When should the government intervene in the economy?
2. What is the effect of those interventions on economic outcomes?
3. [Why do governments choose to intervene in the way that they do?]

When should the government intervene in the economy?

Economists' two general rules for government intervention

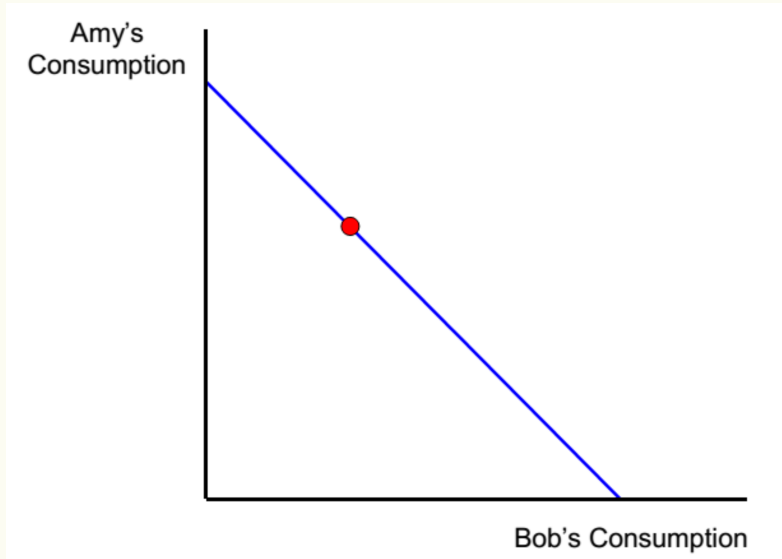
1. Failure of 1st Welfare Theorem:

- Government intervention can help if there are market or individual failures

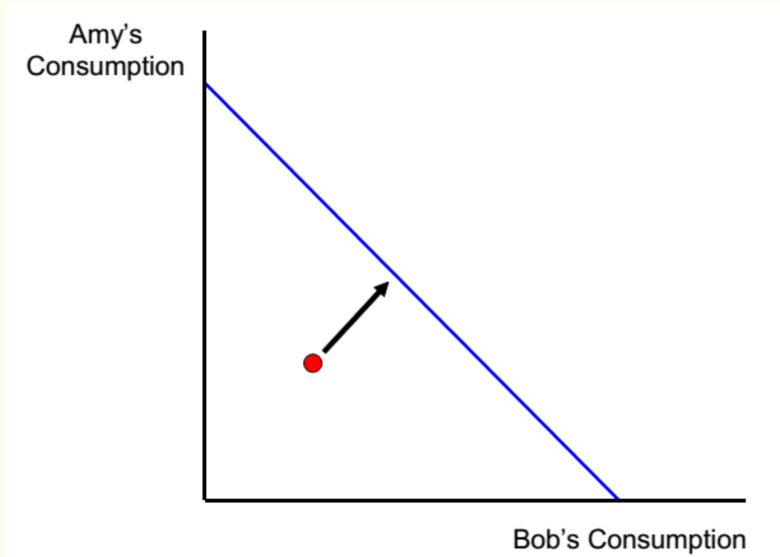
2. Fallacy of the 2nd Welfare Theorem:

- Distortionary Government intervention is required to reduce economic inequality

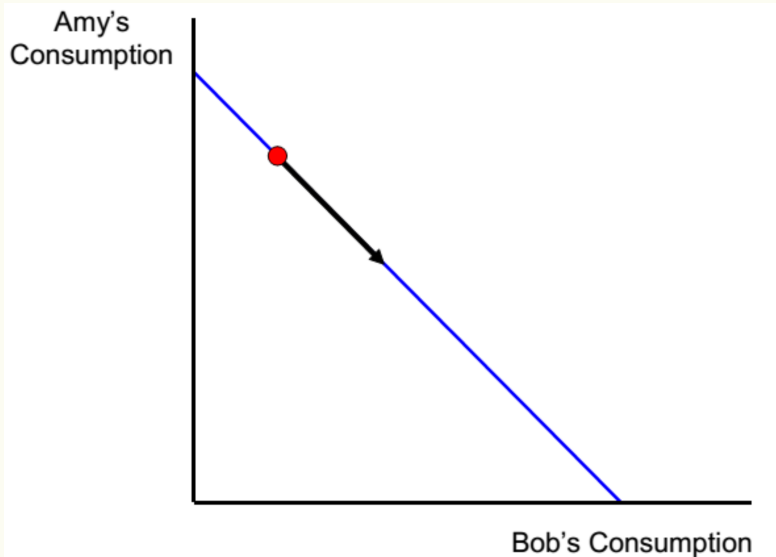
Efficient private market allocation of goods



First role for government: Improve efficiency



Second role for government: Improve distribution



Government's role 1: 1st Welfare Theorem

1st Welfare Theorem: If (1) no externalities, (2) perfect competition, (3) perfect information, (4) agents are rational, then private market equilibrium is Pareto efficient

Hence, government intervention may be desirable if:

1. **Externalities** require government interventions
 - Pigouvian taxes/subsidies, public good provision
2. **Imperfect competition** requires regulation
 - (typically studied in Industrial Organization)
3. **Imperfect or Asymmetric Information**
 - e.g., adverse selection may call for mandatory insurance
4. **Agents are not rational** (= individual failures, analyzed in behavioral economics)
 - e.g., myopic or hyperbolic agents may not save enough for retirement

Failure 1: Externalities

- ▶ Markets may be **incomplete due to lack of prices** (e.g. pollution)
- ▶ Achieving efficient Coasian solution requires organization to coordinate individuals
 - that is, a government
- ▶ This is why govt. funds public goods (highways, education, defense)

Questions: What public goods to provide and how to correct externalities?

Failure 2: Imperfect competition

- ▶ When **markets are not competitive**, there is role for govt. regulation
 - suboptimal quantities, higher prices, lower consumer surplus
 - Ex: natural monopolies such as electricity and telephones
- ▶ Traditionally left to courses on industrial organization, not covered in this course

Failure 3: Asymmetric information

When **some agents have more information than others**, markets fail

- ▶ Ex. 1: Adverse selection in **health insurance**
 - Healthy people drop out of private market → unraveling
 - Mandated coverage could make everyone better off
- ▶ Ex. 2: capital markets (credit constraints) and subsidies for education

Failure 4: Individuals are not rational

If **agents do not optimize**, government intervention may be desirable

- ▶ (e.g. by forcing saving via social security)

This is an “**individual failure**” rather than a market failure

Conceptual challenge: **how to avoid paternalism critique**

- ▶ Why does govt. know better what is desirable for you?
- ▶ (e.g. wearing a seatbelt, not smoking, saving more)

Difficult but central issues for optimal policy design

Government's role 2: 2nd Welfare Theorem

Even with no market failures, free market might generate substantial inequality

Society, through its government, may want to reduce it

2nd Welfare Theorem: Any Pareto Efficient outcome can be reached by

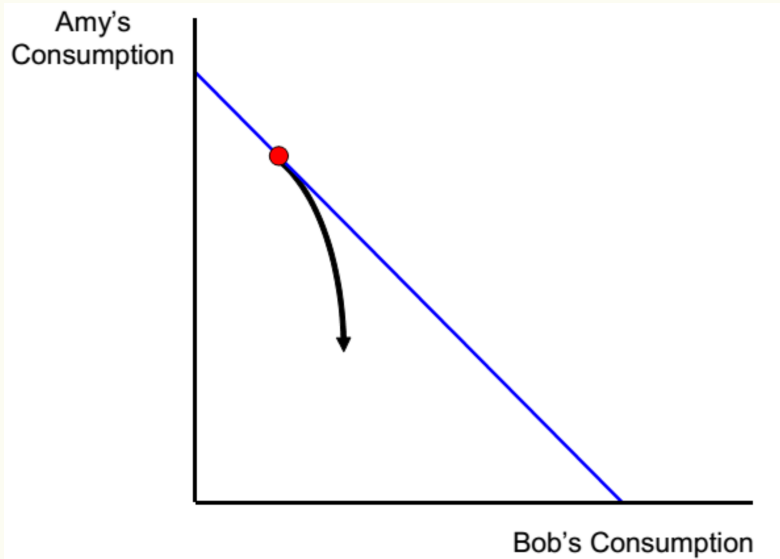
1. Suitable redistribution of initial endowments
 - [individualized lump-sum taxes based on indiv. characteristics and not behavior]
2. Then letting markets work freely

In these circumstances, no conflict between efficiency and equity [1st best taxation]

However, redistribution of initial endowments is not feasible (imperfect information)

- ▶ $\Rightarrow$ need to use **distortionary taxes** and transfers based on economic outcomes (income, consumption, wealth)
- ▶ $\Rightarrow$ Trade-off between efficiency and equity [2nd best taxation]

Equity-efficiency tradeoff



Example of 2nd Welfare Theorem fallacy

Economy setup:

- ▶ 50% people unable to work (hence they earn \$0)
- ▶ 50% people who can work and earn \$100

Free market outcome: unable have \$0, able have \$100

2nd welfare thm: govt can tell apart unable from the able [even if the able do not work]

⇒ tax able \$50 [regardless of whether they work] to give \$50 to each unable person

⇒ the able keep working [otherwise they'd have zero income and still have to pay \$50]

Real world: govt can't tell apart unable from non working able

⇒ \$50 tax on workers + \$50 transfer on non workers destroys all incentives to work

⇒ govt **can no longer do full redistribution**

⇒ **Trade-off between equity and size of the pie**

What is the effect of government interventions on economic outcomes?

In response to government interventions:

Direct Effects: effects predicted if individuals did not change their behavior

- ▶ they are relatively easy to compute
- ▶ we will call them “mechanical”

Indirect Effects: arise because individuals change their behavior

- ▶ (sometimes called “unintended effects”)
- ▶ we will call them “behavioral”

Empirical public economics tries to estimate indirect effects to inform the policy debate
Some overlap with labor economics

Example: increasing top income tax rates

1. mechanically raises tax revenue
2. but top earners might find ways to evade/avoid taxes, reducing tax revenue

Why do governments do what they do?

Political economy: Theory of how the political process produces decisions that affect individuals and the economy

- ▶ Example: Understanding how the level of taxes and spending is set through voting and voters' preferences in a democracy
- ▶ In public economics: which social preferences can rationalize an existing tax schedule?
 - we will discuss some of this when thinking about “inverse optimum” in optimal tax

Normative vs positive public economics

- ▶ **Positive Public Economics:** Analysis of How Things Really Are
 - e.g., Does govt provided health care crowd out private health care insurance?
 - e.g., Do higher taxes reduce labor supply?
 - e.g., Do higher top marginal tax rate induce tax avoidance?
- ▶ **Normative Public Economics:** Analysis of How Things Should be
 - e.g., should the government intervene in health insurance market?
 - e.g., how high should taxes be?
- ▶ Positive public economics is a 1st step before we can complete Normative
- ▶ Positive is primarily empirical, Normative is primarily theoretical

This course

1. **Positive analysis:** tax incidence
 - effect of taxes on prices and utilities
2. **From positive to normative analysis:** efficiency cost of taxation, welfare metrics
 - focus on effects of taxes on quantities
3. **Normative analysis:** optimal taxation
 - commodity taxation (Ramsey tax)
 - optimal income taxation (Mirrlees taxation)
4. **Facts on inequality trends** and challenges for the future

Advance Public economics - Schedule

Week 1: Introduction, tax incidence

Week 2: Preliminary tools, tax incidence

Week 3: Tax incidence, tax efficiency

Week 4: Tax efficiency

Week 5: Empirical welfare, linear taxation and externalities

Week 6: Optimal income taxation, topics on inequalities

Week 7: Topics on inequalities, Presentations

Week 8: Presentations

Week 9-12: Auctions and public procurement (Prof. Albano)