Econ 230A: Public Economics
Lecture: Introduction [1]

Hilary Hoynes

UC Davis, Winter 2013

[1] These lecture notes are partially based on lectures developed by Raj Chetty and Day Manoli. Many thanks to them for their generosity.

Logistics

1. Prerequisites: graduate micro, graduate econometrics
2. Meetings:
   - Tuesday Thursday 2:10-3:30 (or 4:00) , Wellman 211
   - Applied Micro Brown Bag, Internal seminar Thursday 3:40-5:00
3. Office Hours: Tuesdays 4-5pm, Thursday 9-10, 1151 SSH
4. Reading list, syllabus & empirical assignment will be covered at end of introduction
5. Grading: paper summaries, empirical problem sets, research proposal, referee report, final exam
6. Lecture notes provided for class in advance

What is public economics?

- Most economic intervention occurs through government policy
  1. price intervention: taxes, UI benefits
  2. regulation: zoning laws, compulsory schooling
- PE is the study of how government policies affect the economy and how these policies should be designed to maximize welfare.

- No broad consensus on appropriate role for government in society
- Research in PE has large practical value
  - current debates about taxes, trade, health care

What is public economics?

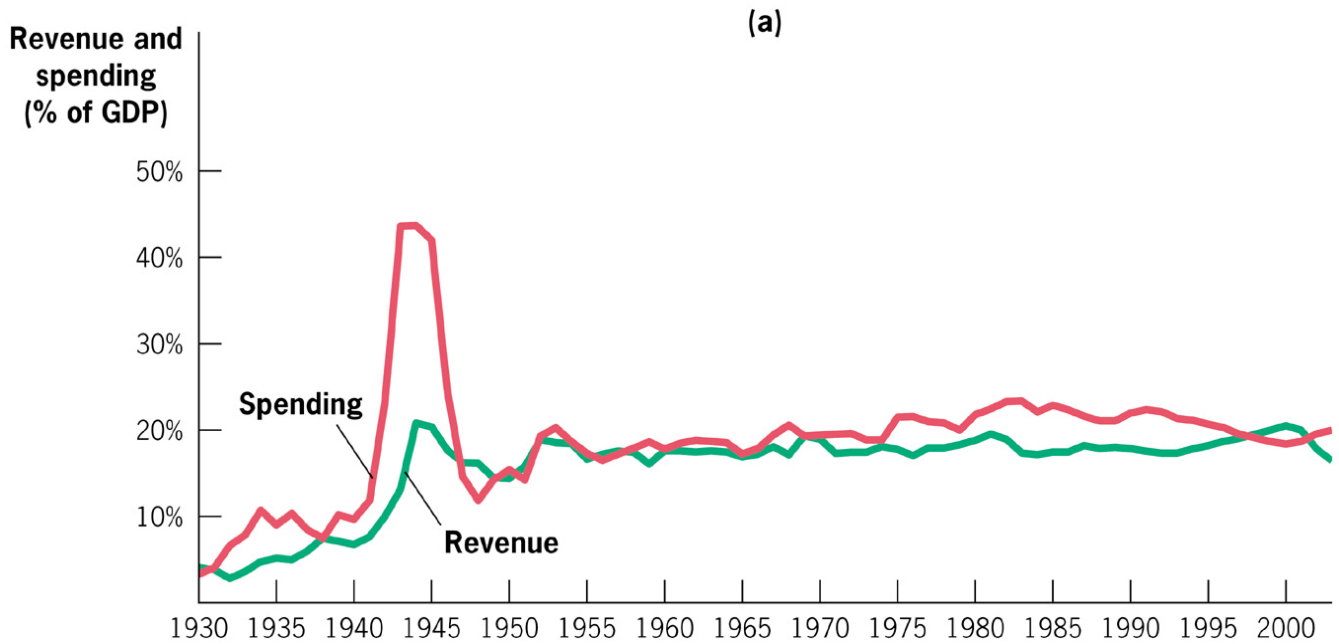
- Academic Perspective: PE is often endpoint for other fields of economics
- Questions often develop based on policy motivations or policy implications
  - Macro focuses on institutions that lead to growth, policies that mitigate business cycle fluctuations
  - Labor focuses on minimum wage, unemployment
  - Development, corporate finance, other fields
- Natural to combine PF with another field
  - draw new insights about policy from your work on theory/evidence in another area.
  - understanding PF can help sharpen your research focus and always keep you working on relevant issues.

What is public economics?

- Important themes/skill sets in public economics:
  1. Traditionally quite theoretical; now more a combination of theory and evidence
  2. Micro-based
  3. Two styles of work: structural and reduced-form
  4. Tends to be relatively neoclassical, but growing interest in implications of behavioral econ for public policy
  5. Long run focus in theory; relatively little focus on short term stabilization, etc. (question is ideal design of systems for long run welfare)

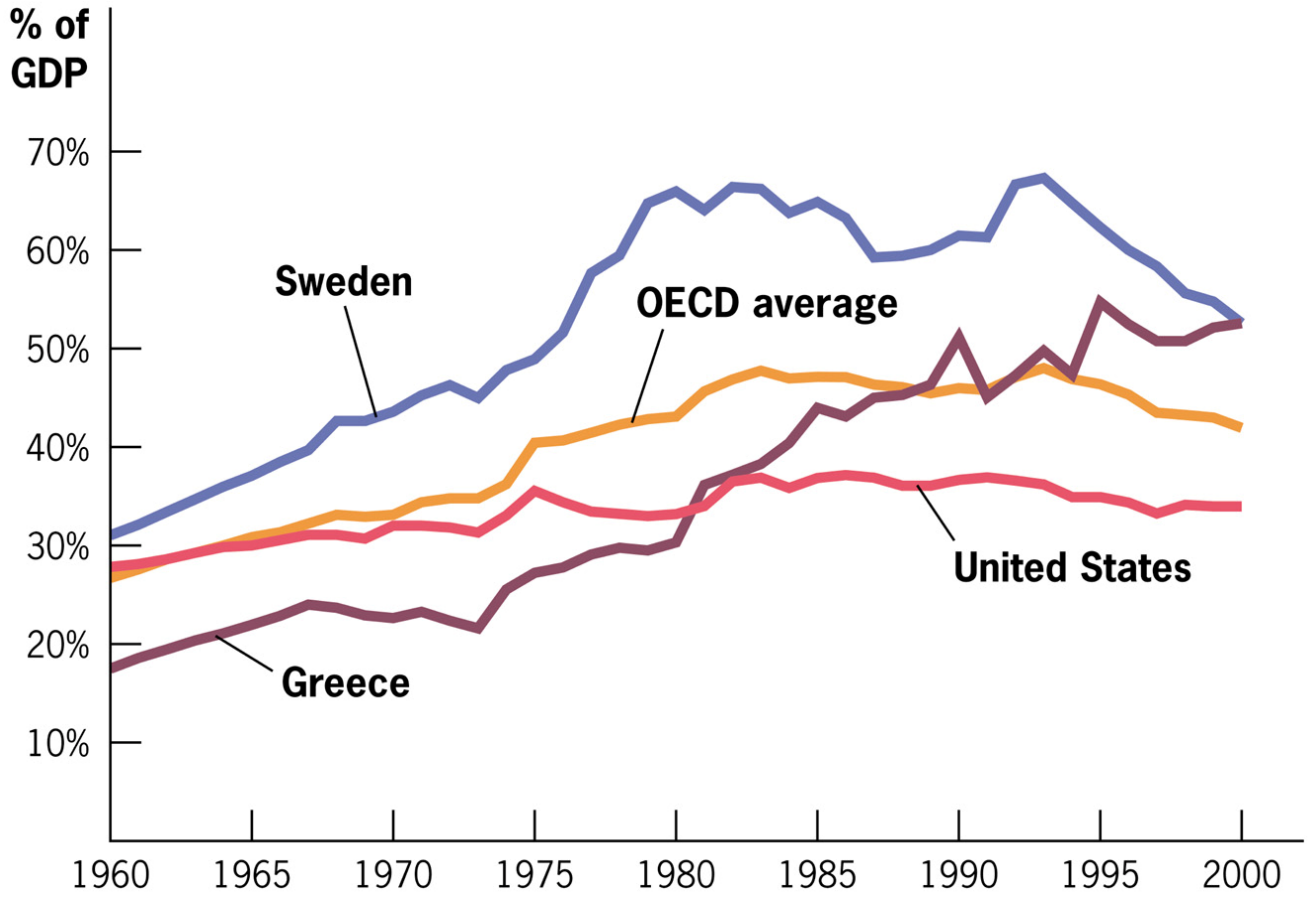
Background facts about government

- Government expenditures roughly $\frac{1}{3}$ of GDP in US; higher than $\frac{1}{2}$ in some European countries
- Figure 1 (Gruber): Government has grown tremendously over time: from 5% of GDP in 1930.
  - Spending generally tracks revenue, but deficit gap opened up in the 1980s and 2000s
  - Decentralization is now a key feature in US: $\frac{1}{3}$ of spending done at state and local level, eg schools ($\frac{2}{3}$ at federal)



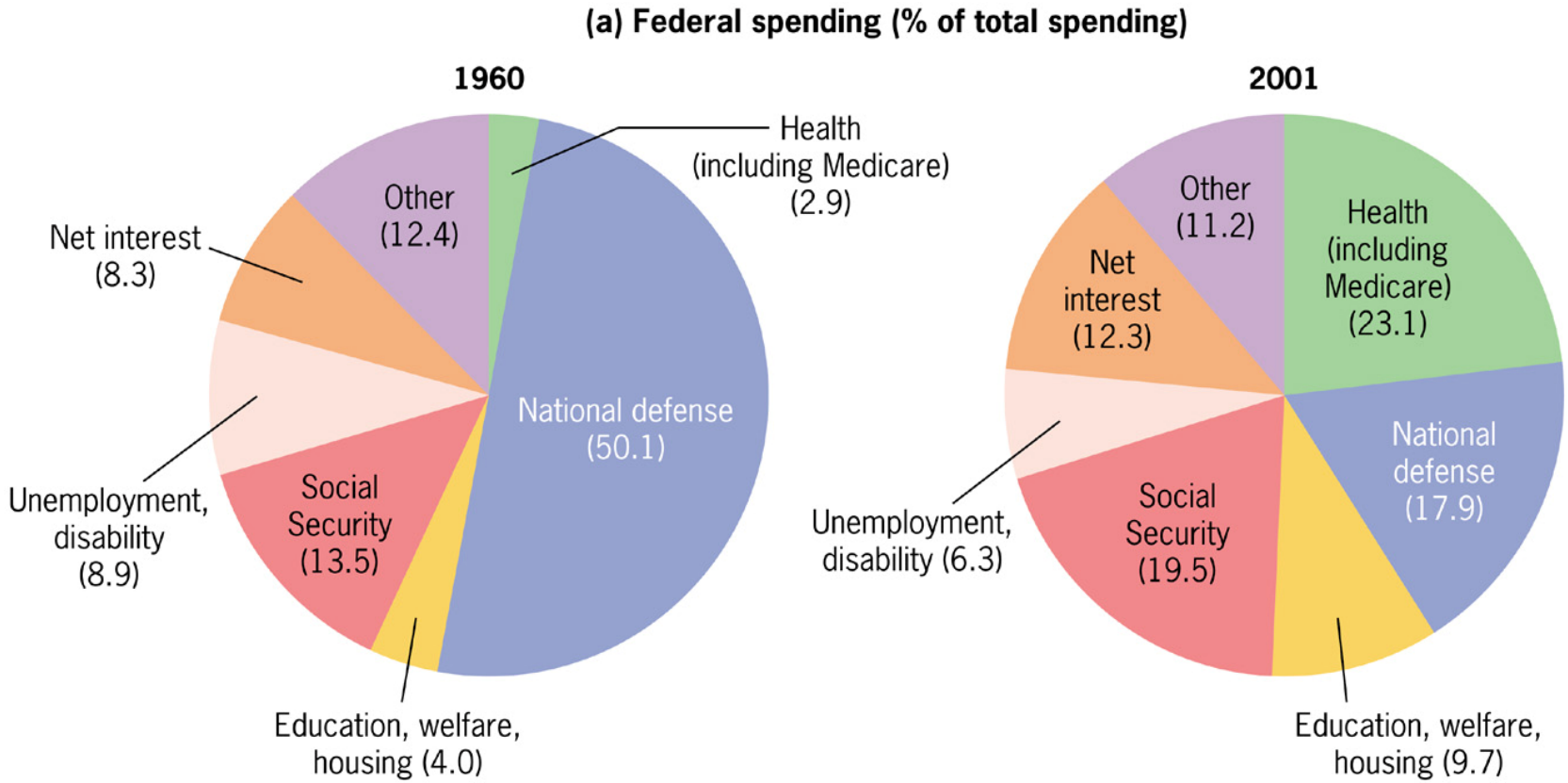
Background facts about government (cont)

- Figure 2 (Gruber). Other countries even bigger, accelerating faster.



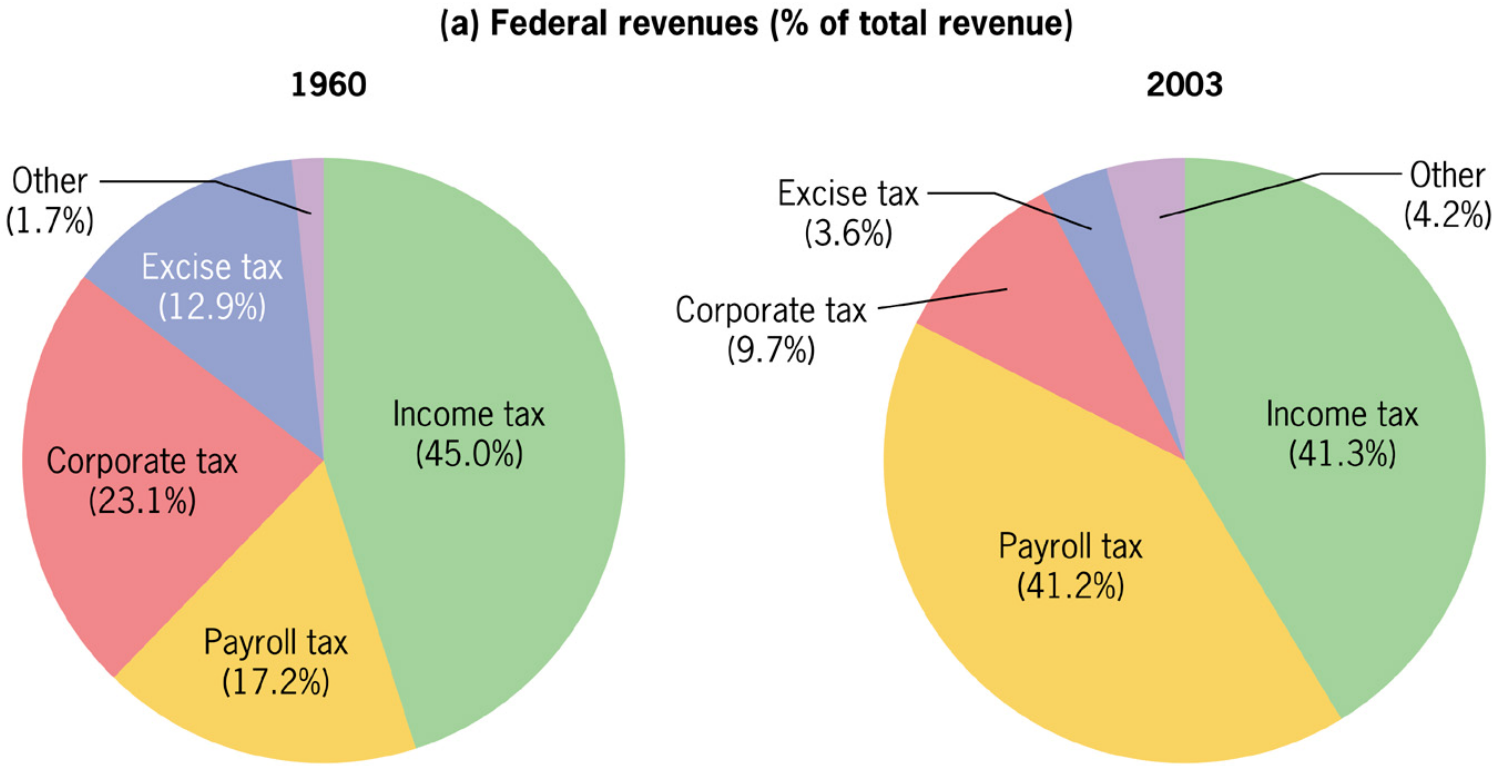
Background facts about government (cont)

- Figure 3 (Gruber). Shift in the composition of spending away from defense and infrastructure toward transfers (Retirement, Health, Income support).



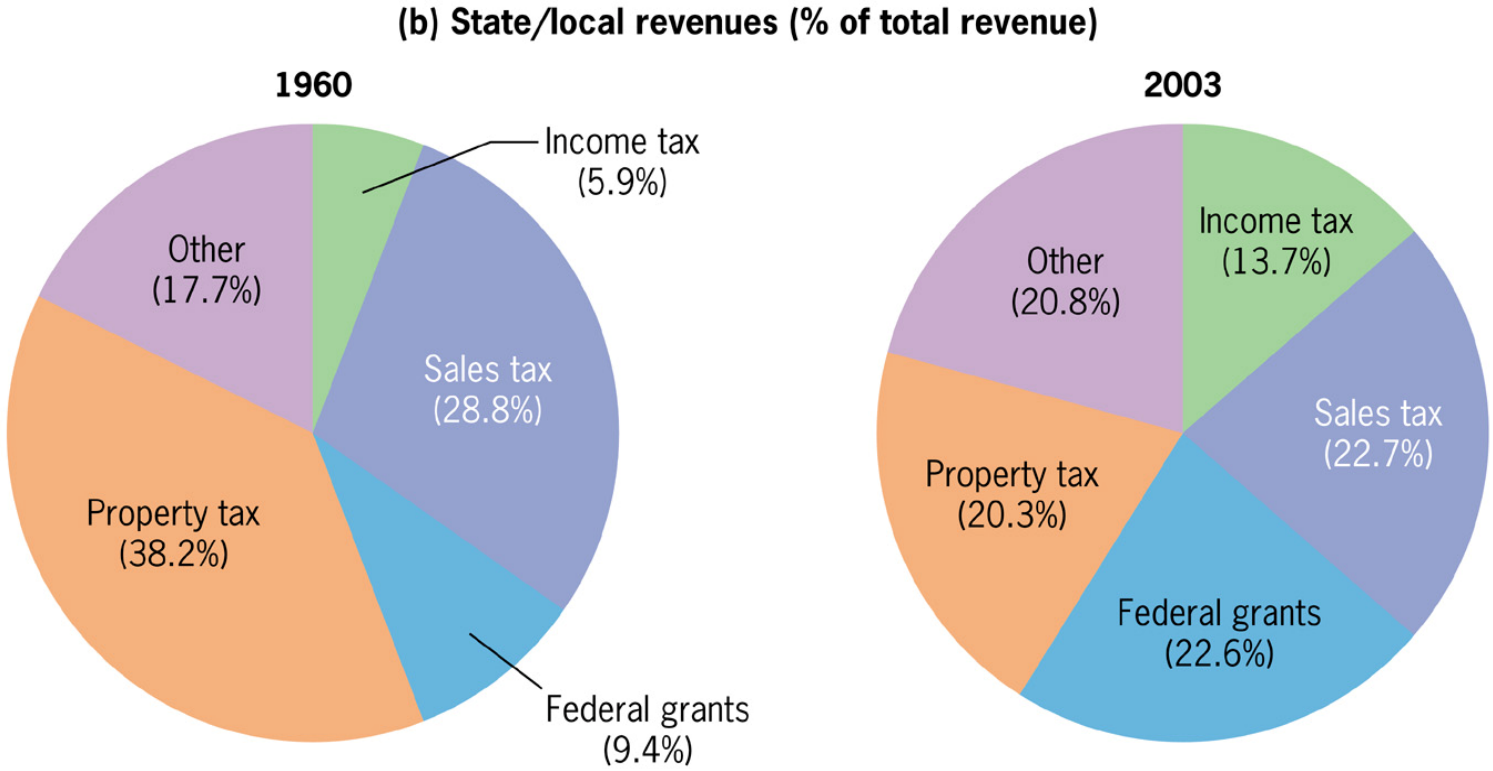
Background facts about government (cont)

- Figure 4 (Gruber). Correspondingly, shift in sources of revenue. Corporate and excise tax revenue displaced by payroll tax revenue (e.g. SS, medicare tax). Income tax roughly constant share of revenue.



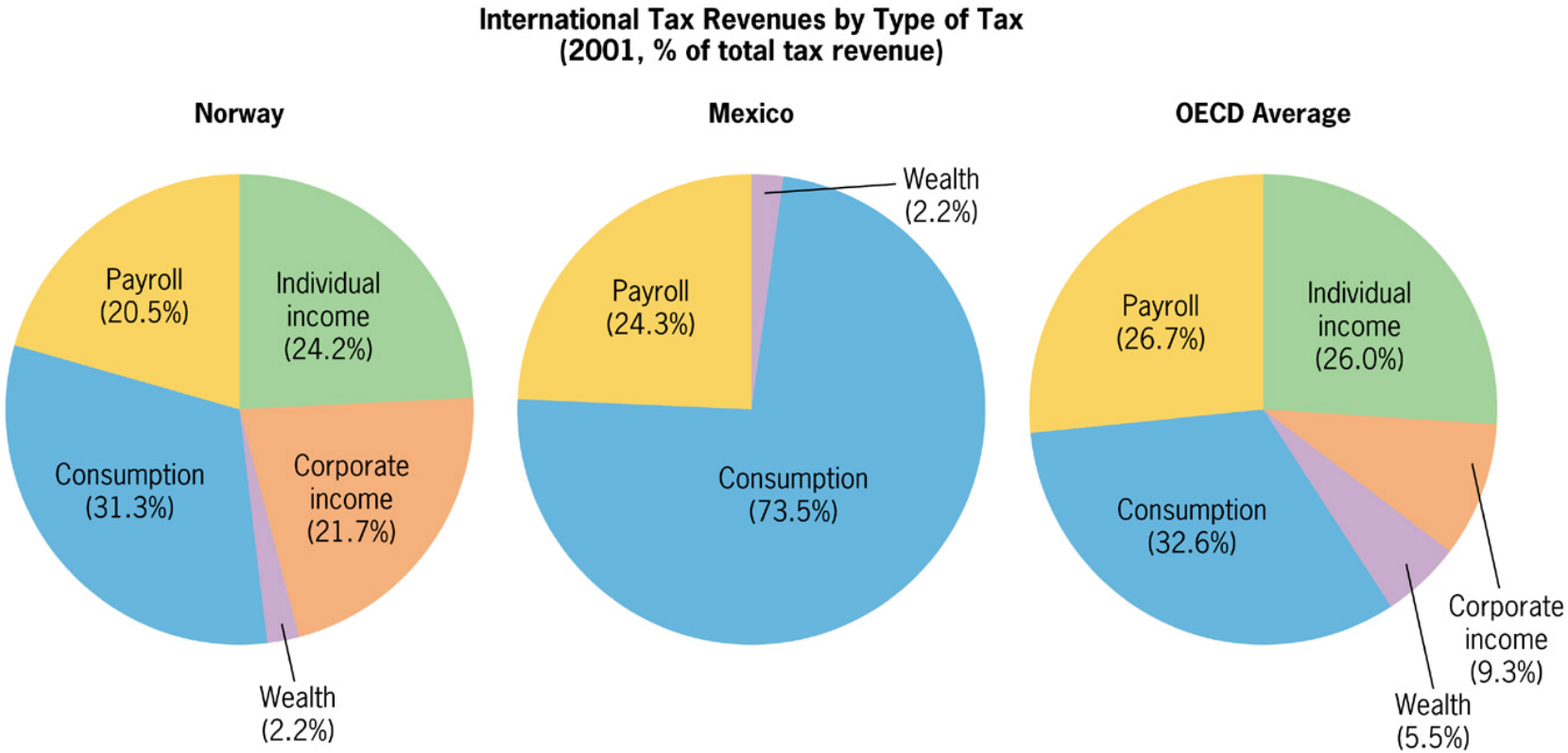
Background facts about government (cont)

- Figure 5 (Gruber). State tax revenue: sales tax, property tax, federal grants, and income tax.



Background facts about government (cont)

- Figure 6 (Gruber). Other countries rely much more heavily on consumption taxation, especially developing countries. European countries also have some wealth taxes, but much less income tax. Large literature on optimal choice of systems.



Why have government intervention?

- When is government intervention necessary in a market economy?
  - Course can be split into two parts:
    1. when we are inside frontier, government improves efficiency
    2. when we are unsatisfied with location on frontier, government improves distributional outcomes
- Throughout the course, adopt a market first, government second approach. Why?
  - First Welfare Theorem tells us that private market provides an efficient outcome under a broad set of conditions.

Why have government intervention?

- First Welfare Thm: no externalities + perfect information + perfect competition $\longrightarrow$ private mkt. equilibrium is Pareto efficient.
- This theorem tells us when the government should intervene in the economy:

- 1. When there are externalities – markets incomplete b/c certain things are not priced (e.g. pollution) or transaction costs involved in achieving Coasian solution require an organization (i.e. government).
  - Government therefore funds public goods (highways, parks, education, defense).
  - Questions: How much to provide? What to provide? How to get people to do the right thing from a social perspective? How should public goods be financed (what types of taxes)?

Why have government intervention?

- 2. Incomplete markets b/c of asymmetric information problems – when some people know more than others, markets can fail.
  - For example, health insurance provision – when healthy people all drop out, average people have to pay more for insurance, and then average people drop out, and market can totally unravel. Here, govt. may intervene and mandate insurance coverage, making everyone better off. Study of social insurance.
  - Capital Markets (credit constraints): education
  - Markets for intergenerational goods: in OLG model, present generations may not care for future generations
  - Questions: How to correct these market failures? Can corrections themselves (e.g. social insurance) create other problems?

Why have government intervention?

- 3. When markets are not competitive, role for govt. regulation (e.g. electricity, telephones). (more of an IO topic)
- 4. Individual (rather than market) failure: people are not fully rational.
  - government intervention, e.g. by forcing saving via social security, may be desirable.
  - Key issue: how to avoid "paternalism" critique – why does govt. know better for you what's desirable for you (e.g. wearing a seatbelt, not smoking, etc.).Tough but central issues to policy design.

Why have government intervention?

- First Welf. Thm. only tells us that the market outcome is Pareto efficient. It does not mean we like the distributional properties of the outcome
  - When we don't like the distributional properties government may wish to intervene to redistribute income.
  - General issue here is tradeoff between equity and efficiency and identification of optimal policy to be on frontier

Why limit government intervention?

- One solution to issues above: let the government be in charge of all production and allocation (socialism). Problems:
  1. Information problems: how can the government decide what to produce?
  2. Deadweight loss of large governments (govt not necessarily a benevolent planner in reality).
  3. Incentive effects
- This creates an important tradeoff in any policy analysis:
  - Providing more public goods requires more distortionary taxation, can lead to inefficiency in spending.
  - Providing more social insurance induces bad incentive effects
  - Additional redistribution distorts incentives
- This is what makes public economics a controversial (and interesting!) field.

Questions in PE

- Three types of questions in PE
  1. Positive analysis: What are economic effects of government programs and interventions: primarily empirical.
  2. Normative analysis: What should the government do? When should it intervene, and what is the best way to intervene (best amount of intervention)? At what level should government intervene?
  3. Public choice/Political Economy: [not really covered here]
     Why does the government behave the way it does? develops theories to explain in a positive way

Plan of the Course - Outline

- Reading list & syllabus covers what we will talk about:
  1. Taxation & Public Expenditures
     - ★ Tax Incidence
     - ★ Deadweight Loss & Optimal Commodity Taxation
     - ★ Public Goods & Externalities
  2. Income Taxation and Labor Supply
     - ★ Income Taxation, DWL, Optimal Tax
     - ★ Empirical Taxes and Labor Supply
     - ★ Taxes and Low income Population
     - ★ Taxes and High Income Population
     - ★ Tax Salience

Plan of the Course - Outline

- 3. Income Support Programs
  - Theory of Income redistribution
  - Incentive effects of cash welfare programs
  - Welfare reform
  - Inkind public assistance programs
- 4. Topics in Public Finance and Health Care
- 5. Topics in information and retirement savings

Theme 1: Connecting Theory to Data

- Modern public economics tightly integrates theory with empirical evidence to derive quantitative predictions about policy
  - What is the optimal income tax rate?
  - What is the optimal unemployment benefit level?
- Traditional approach: theoretical models and numerical simulations
  - Theory often makes weak predictions: optimal tax rate between 0 and 100%
  - Numerical simulations rely on strong assumptions
- Recent work derives robust formulas that can be implemented using well-identified empirical estimates

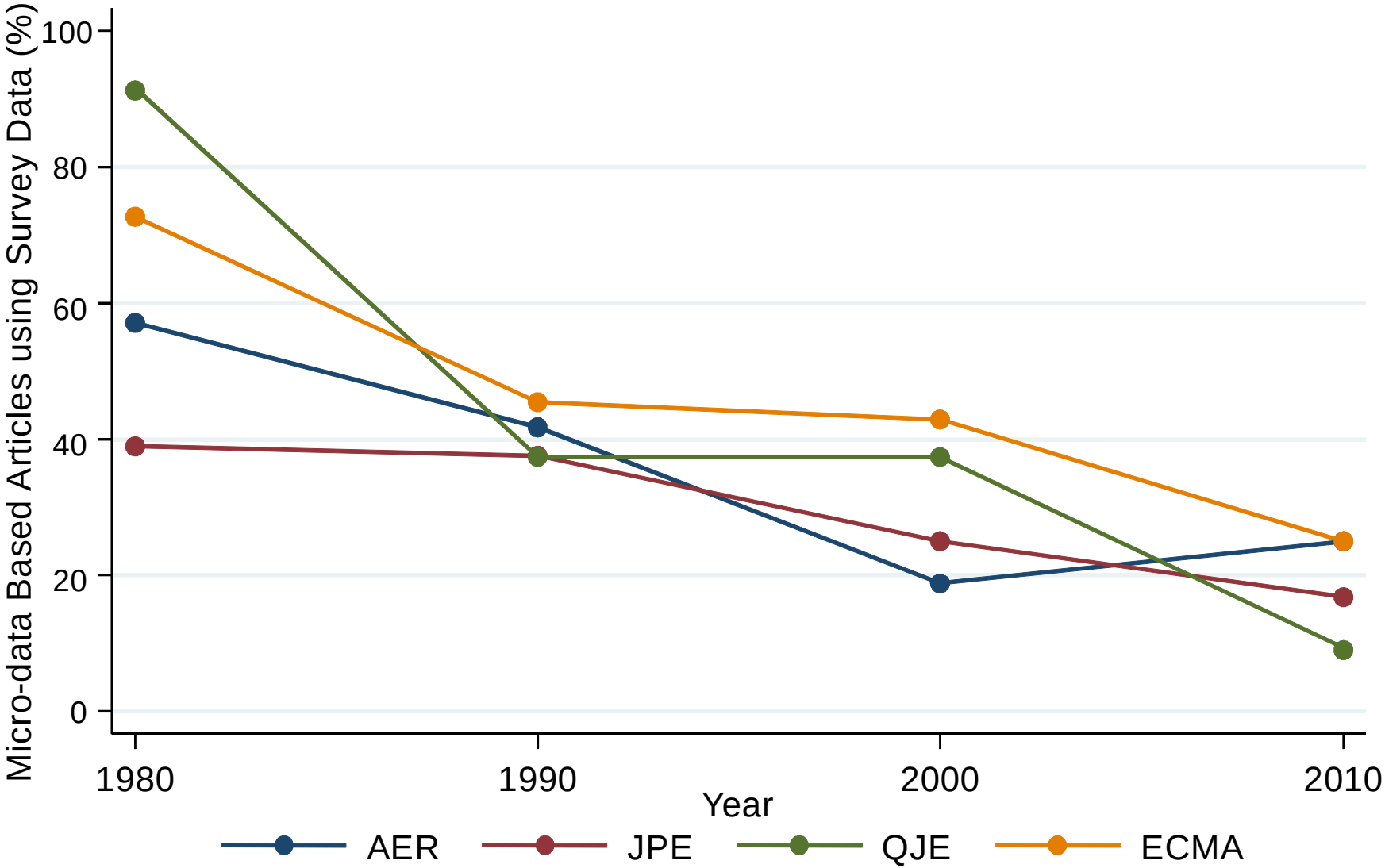
Theme 2: Quasi-Experimental Empirical Methods

- Research in public economics exploits a variety of quasi-experimental research designs to identify parameters of interest
  - Event studies, regression discontinuity, synthetic control
- Good way to learn practical lessons in applied econometrics
  - What is "identification by functional form" and why is it undesirable?
  - Is the LATE or ATE of greater interest in your problem?
  - When is propensity score reweighting credible?
  - When do weak instrument problems arise and how can they be fixed?
- Emphasis on non-parametric graphical techniques rather than parametric regression models

Theme 3: "Big Data"

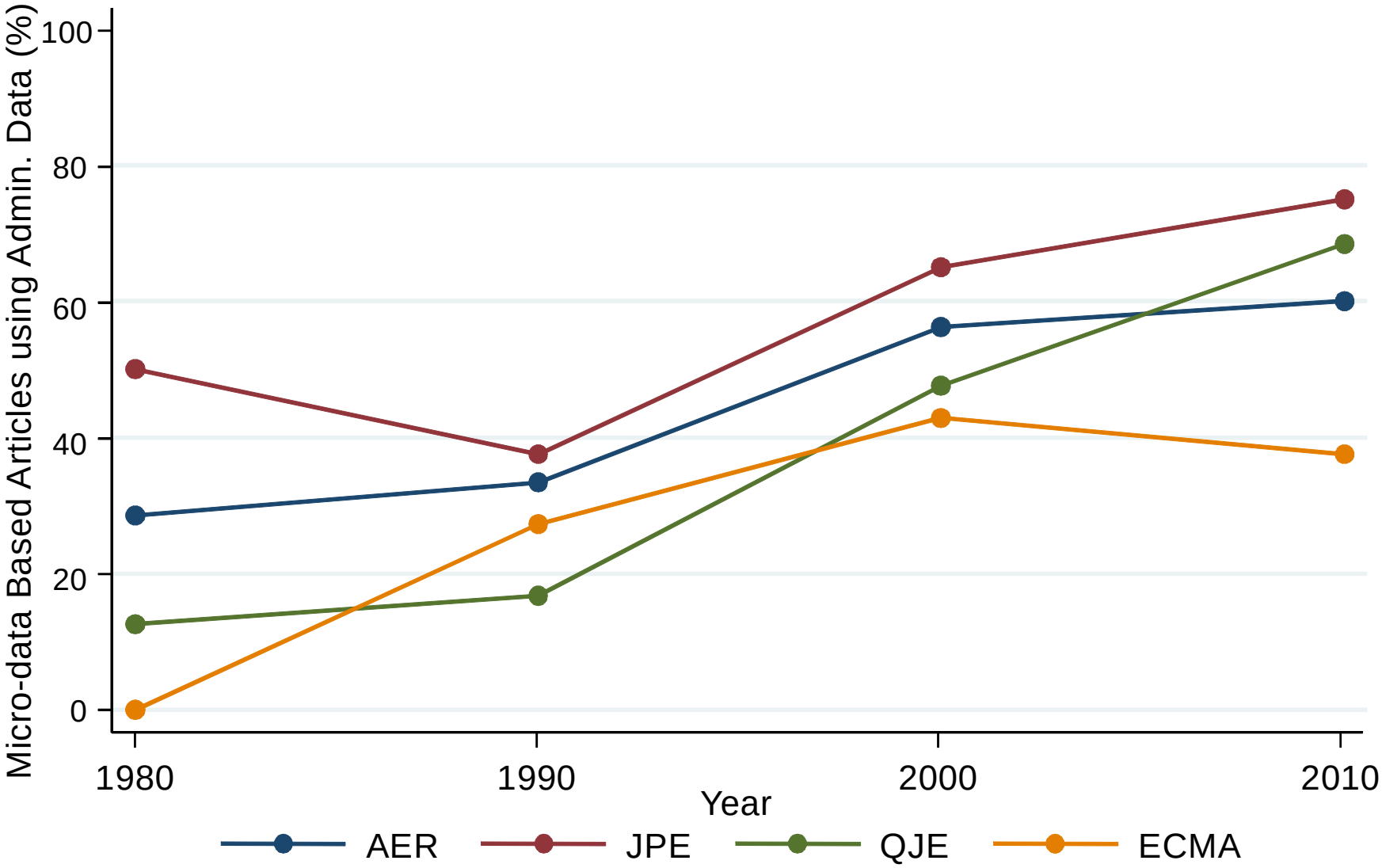
- Compelling implementation of quasi-experimental methods requires a lot of data
- Recent availability of very large datasets has transformed research in applied microeconomics
  - Scanner data on consumer purchases
  - Tax and social security records
  - School district databases

Use of Pre-Existing Survey Data in Publications in Leading Journals, 1980-2010



Note: "Pre-existing survey" datasets refer to micro surveys such as the CPS or SIPP and do not include surveys designed by researchers for their study. Sample excludes studies whose primary data source is from developing countries.

Use of Administrative Data in Publications in Leading Journals, 1980-2010



Note: "Administrative" datasets refer to any dataset that was collected without directly surveying individuals (e.g., scanner data, stock prices, school district records, social security records). Sample excludes studies whose primary data source is from developing countries.

United States Tax Data

- 7 billion tax records covering full pop. from 1996 to today
- Includes a rich set of information on individuals
  - Earnings from W-2's (covers non-filers)
  - Employer ID
  - College attendance
  - Retirement savings, charitable contributions
  - Housing and mortgage interest
  - Geographical location
  - Birth, death, marriage, children, family structure
- Analogous corporate databank contains information for 5 million firms per year, linked to workers

What are the Benefits of Administrative Data?

1. Higher quality information: virtually no missing data or attrition
    - Current Population Survey non-response rate now 31% for income
2. Longitudinal tracking over long periods
    - Match rates of 95% over 20+ years in studies of long-term impacts of early childhood education [Chetty et al. 2011, Chetty, Friedman, Rockoff 2012]

What are the Benefits of Administrative Data?

1. Higher quality information: virtually no missing data or attrition
    - Current Population Survey non-response rate now 31% for income
2. Longitudinal tracking over long periods
    - Match rates of 95% over 20+ years in studies of long-term impacts of early childhood education [Chetty et al. 2011, Chetty, Friedman, Rockoff 2012]
3. Very large sample sizes: 2,000 times the size of the CPS
    - Can develop new research designs