

ECON 7670: Overview and Introduction

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Department of Economics
Tulane University

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Course Overview

- Call me Elliott
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Expectations: Evaluation and Grading

- You can expect from me:
 - Fairness in grading, evaluation, and overall treatment in the class between students
 - Respect for the work and effort you put in throughout the class
 - Transparency of class policies and standards

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- In exchange, I expect from you:
 - Respect for me as the instructor of the course
 - Respect for the class policies and grading system

Expectations: Work

- You can expect from me:
 - That I will read your research update before discussing feedback
 - Timely feedback on general research questions and writing, conditional on my time constraints
 - I do not work on Saturdays and rarely answer email on Sundays
 - High expectations for empirical work and writing
- In exchange, I expect from you:
 - Clearly written and concise research updates **submitted on time**
 - Patience if my time constraints delay feedback
 - Attempts to find solutions to your questions on your own

This class is part of your transition away from a consumer of economic knowledge and toward a producer of economic knowledge

- Being successful necessitates organization, hard work, and **a lot** of reading
- I believe you can learn things from this class even if you do not continue with public finance research

- Lecture: Tuesdays/Thursdays 9:30-10:45 AM Central
 - If necessary: lecture Zoom link on Canvas (passcode: isaac-7670)
- Office hours: Wednesdays 1 - 2 PM & Fridays 10 - 11 AM (or by appointment)

Assignments

Assignment	Date Due	% of Grade
Referee report	Throughout semester	6%
Paper responses	Throughout semester	10%
Chetty, Looney, and Kroft (2009) replication	Thursday, March 2	12%
Friedberg and Isaac (2022) replication	Thursday, April 13	12%
Research proposal		
Initial research ideas	Thursday, February 2	5%
Research update (data)	Thursday, February 16	5%
Research update (empirical strategy)	Thursday, March 2	5%
Introduction first draft	Thursday, March 16	5%
Revised introduction	Thursday, March 30	15%
Research Update (results)	Thursday, April 13	5%
Presentation slides due	Thursday, April 20	
Final presentations	April 25-May 2	20%

Assignments: Referee Report

- Write 1 referee report on a paper presented in Murphy-Economics Seminar Series
- Report must be submitted **by the start of the speaker's presentation**
- Plan ahead!

Presenter	Fields	Date
Michael Best	Public, Development	February 10
Bradley Hardy	Labor, Public	February 24
Nathan Nunn	Political Economy Economic History	March 10
Eva Vivalt	Public, Applied Micro	March 17
Nathan Canan	Political Economy, Econometrics	March 24
Jhacova Williams	Economic History, Cultural Economics	April 14
Raquel Fernández	International	April 21
Ismael Mourifé	Econometrics	April 28

Assignments: Paper Responses

- You will choose approximately 3 papers in advance to prepare 6-8 minute overview presentations (3-4 slides):
 - Motivation
 - Research question
 - Data
 - Identification and Empirical Strategies
 - Results
- 1 student will prepare and present their slides for each paper we read

Assignments: Replications

- You will replicate results from 2 papers discussed in class: Friedberg and Isaac (2022) and Chetty, Looney, and Kroft (2009)
- You may work in groups, but must submit your own code
- Graded based on (in order of importance):
 - 1 Can I perfectly execute your code without edits?
 - 2 Does your executed code perfectly replicate your submitted results?
 - 3 Does your executed code perfectly replicate the papers' results?
 - 4 Is your code as efficient as possible?

Assignments: Research Proposal

- This is your capstone project
- You will develop an original and feasible research question and empirical strategy using available data
- Research updates submitted in stages:
 - ① Research question (submit 2, continue with 1)
 - ② Data
 - ③ Empirical strategy
 - ④ Results
- You will also write a paper introduction for your project that incorporates a literature review
- “Final exam” will be a 20-minute presentation with a 5-minute Question & Answer session

Organization and Goal Setting

- Thinking about organization now will pay off in the future
- Reasons to get organized now:
 - Keeping track of papers and creating automated bibliographies
 - Setting and accomplishing goals
 - Version control
 - Obtaining replicable results
 - Meeting PhD program milestones

Organizational Tools

- For keeping track of papers: Zotero* (free & paid), EndNote (paid), Mendeley
- For setting and accomplishing goals: Weekly action plan*, daily planner*, Todoist* (free & paid), Microsoft To Do, Google Tasks, Trello (free & paid)
- For version control: Microsoft OneDrive*, Google Drive*, GitHub, Dropbox*, Box*
- For writing and/or collaborating in LaTeX: Overleaf* (free & paid), Texifier* (paid)

*: Elliott uses this

Goal Setting

- Your PhD work is becoming more self-driven, making goal-setting more important
- Two types of goals:
 - **Outcome goal:** A goal defined by a measurable outcome
Examples: “Publish a paper”, “Get an A”, “Obtain results”
 - **Process goal:** A goal defined by an action
Examples: “Spend 1 hour writing draft”, “Attend office hours”, “Spend 1 hour writing code”
- Begin by defining an outcome goal with a deadline and work backwards to set process goals needed to accomplish it

Goal Setting Example

- Outcome goal: Submit a referee report by February 24
- Process goals:

Date	Process Goal
February 20	Read the paper without taking notes
February 21	Read the paper again and take notes in the margins
February 22	Categorize margin notes into 1) High Priority, 2) Medium Priority, 3) Low Priority, and 4) Typos/writing Write intro to referee report detailing research question, method, results, and overall categories of critiques Organize margin notes into bullet point list
February 23	Read through referee report Edit writing (delete unnecessary sentences, adjust sentence order if necessary, soften language) Read paper a third time to make sure critiques make sense
February 24	Submit referee report

Goal Setting Example

- Outcome goal: Submit an empirical strategy research update by March 2
- Process goals:

Date	Process Goal
February 16	Define the identifying variation (treated/untreated policy, dose treatment, above/below a cutoff, bunching) Determine context features (staggered adoption, all units are treated, policy eligibility not observed)
February 18	Define outcome variables and treatment variables (discrete, continuous, measurement) List control variables
February 19	List possible omitted variables that could bias results Determine possible sign of bias from each omitted variable Think about how to address concerns about omitted variables (more controls, alternative sample, fixed effects)
February 20	Read a paper about or using your empirical strategy (e.g., Wooldridge [2021], Hoekstra [2009], Angrist and Pischke [2009])
February 23	Write your regression equation
February 24	Re-examine your regression equation to make sure it makes sense (change if necessary)
February 25	Write first draft of empirical strategy research update including regression equation, variable definitions, and identification argument
February 26	Proof-read research update (delete unnecessary sentences, adjust sentence order if necessary, re-examine identification argument)
February 27	Swap research updates with a classmate to give and receive feedback
March 1	Revise research update based on feedback
March 2	Submit research update

- Course outcome goals:
 - Transition from a consumer of economic research to a producer of economic research
 - Understand the difference between “identification” and “estimation”
 - Build coding skills in Stata
- Course process goals:
 - Read lots of papers spanning different topics, economic contexts, and methods
 - Construct paper response slides detailing motivations, research questions, and identification and empirical strategies
 - Complete replication assignments

Introduction to Public Economics

- Definition: Field of economics that studies government activities and the alternative means of financing government expenditures.
 - Efficiency, distributional effects, revenue effects, and behavioral effects of public policies
- This is *microeconomics*
- Four questions:
 - *When* should the government intervene in the economy?
 - *How* might the government intervene?
 - *What* is the effect of those interventions on economic outcomes?
 - *Why* do governments choose to intervene in the way they do?

- Three motivations for studying these questions:
 - 1 Practical Relevance
 - 2 Academic Interest
 - 3 Methodology

Motivation 1: Practical Relevance

- Interest in improving economic welfare → interest in public economics
- Almost every economic intervention occurs through government policy (i.e., involves public economics) via two channels:
 - Price intervention: taxes, welfare, social insurance, public goods
 - Regulation: min wages, FDA regulations (25% of products consumed), zoning, labor laws, min education laws, environment
- Government directly employs one sixth of U.S. workforce

Motivation 1: Practical Relevance

- Stakes are extremely large because of broad scope of policies
 - Ex. Tax reforms immediately affect millions
- Contentious debate on the appropriate role of government in society
 - Romney: replacing Medicare with decentralized private insurance will improve health outcomes and reduce costs
 - Obama: Romney's proposal will worsen health outcomes and raise costs
- Only one of these views can be correct
 - Injecting science into these debates has great practical value

Motivation 2: Academic Interest

- Public economics is typically the end point for many other subfields
- Macro, development, labor, and corporate finance questions often ultimately motivated by a public economics question
 - Ex 1: Macro studies on costs of business cycles and intertemporal models of household behavior
 - Ex 2: Labor studies on employment effects of the minimum wage
- Natural to combine public finance with another field
- Understanding public finance can help ensure that you work on relevant topics

Motivation 3: Methodology

- Public economics is at the frontier of a methodological transformation in applied microeconomics
- Data-driven approach to answering important policy questions
 - Combines a broad set of skills: applied theory, applied econometrics, simulation methods, data visualization
 - Useful skill set for many applied fields in economics

Theme 1: Connecting Theory to Data

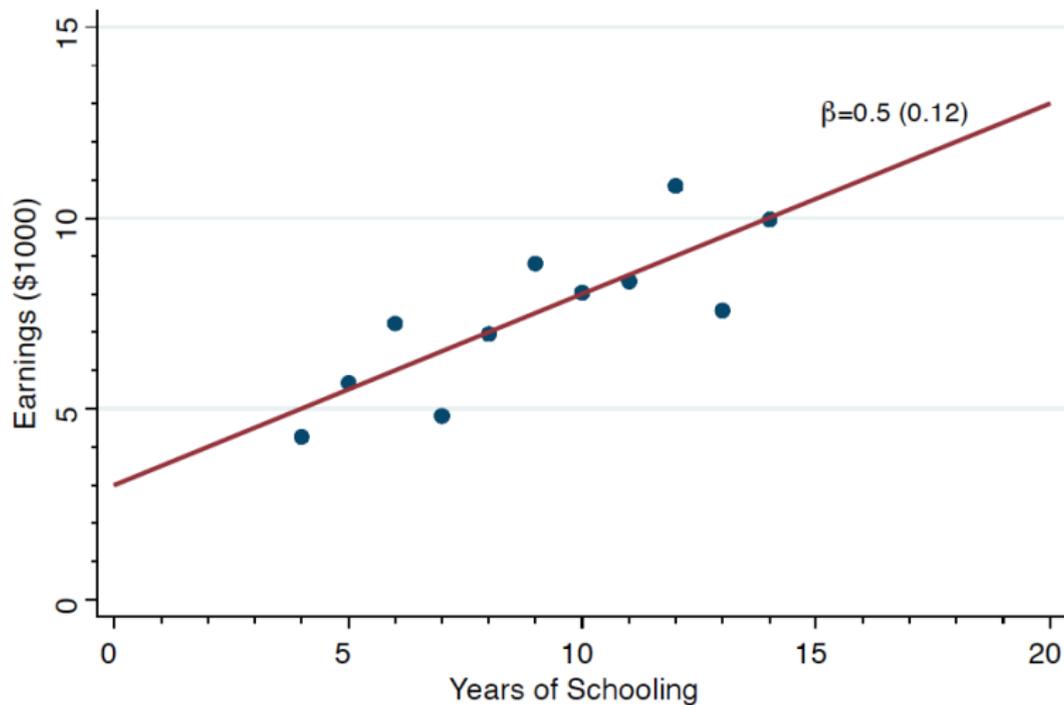
- Modern public economics tightly integrates theory with empirical evidence to derive quantitative predictions about policy
 - What is the optimal income tax rate?
 - What is the optimal unemployment benefit level?
- Traditional approach: theoretical models and numerical simulations
 - Theory often makes 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 (sufficient statistics)

Theme 2: Quasi-Experimental 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

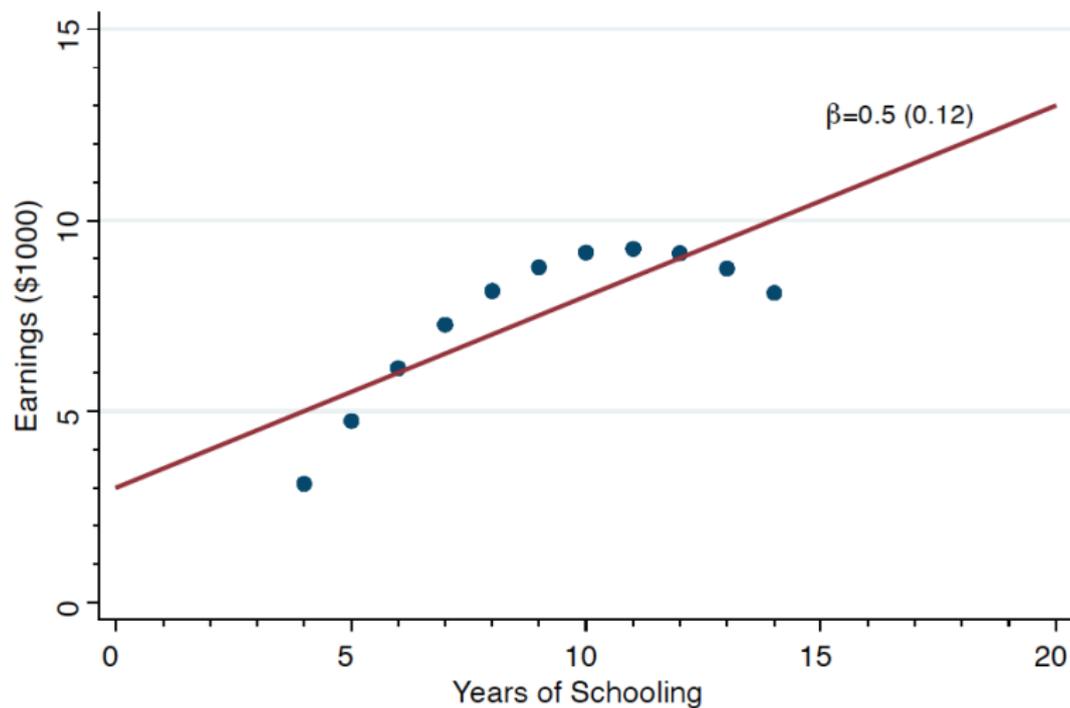
Theme 2: Quasi-Experimental Methods

Anscombe (1973): Dataset 1



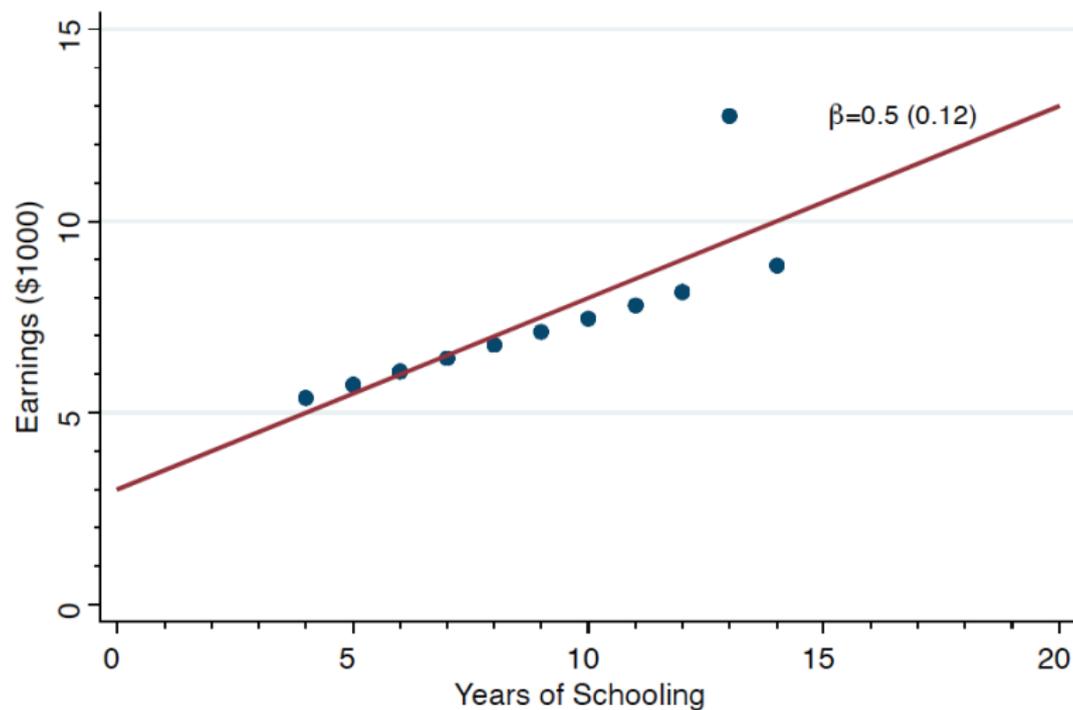
Theme 2: Quasi-Experimental Methods

Anscombe (1973): Dataset 2



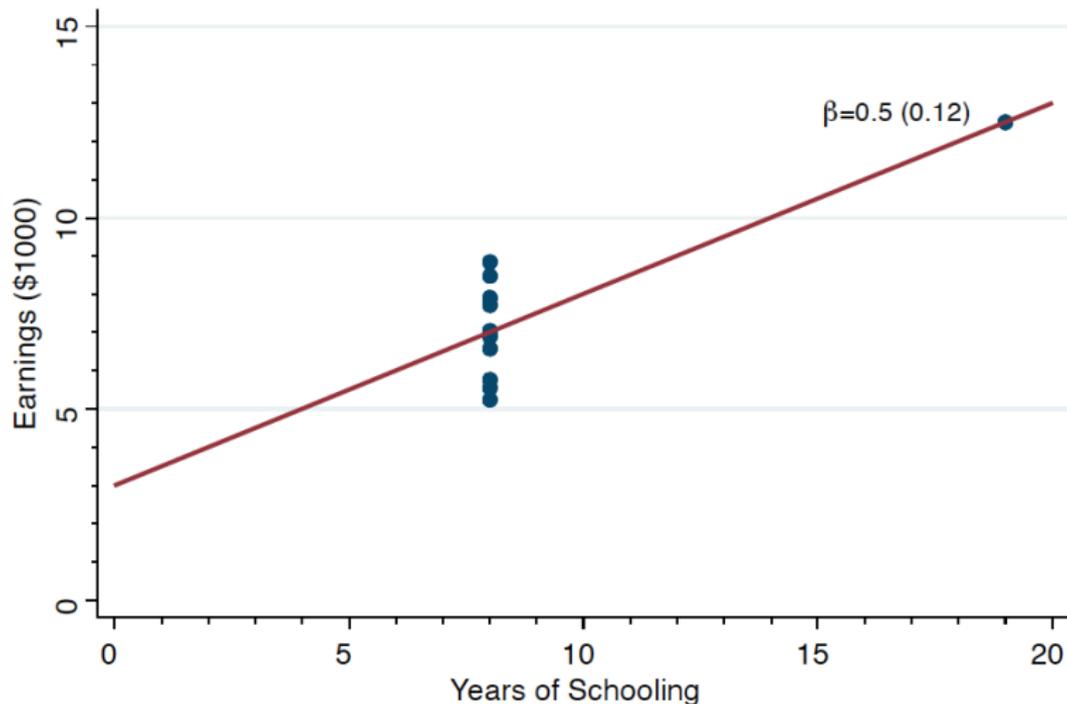
Theme 2: Quasi-Experimental Methods

Anscombe (1973): Dataset 3



Theme 2: Quasi-Experimental Methods

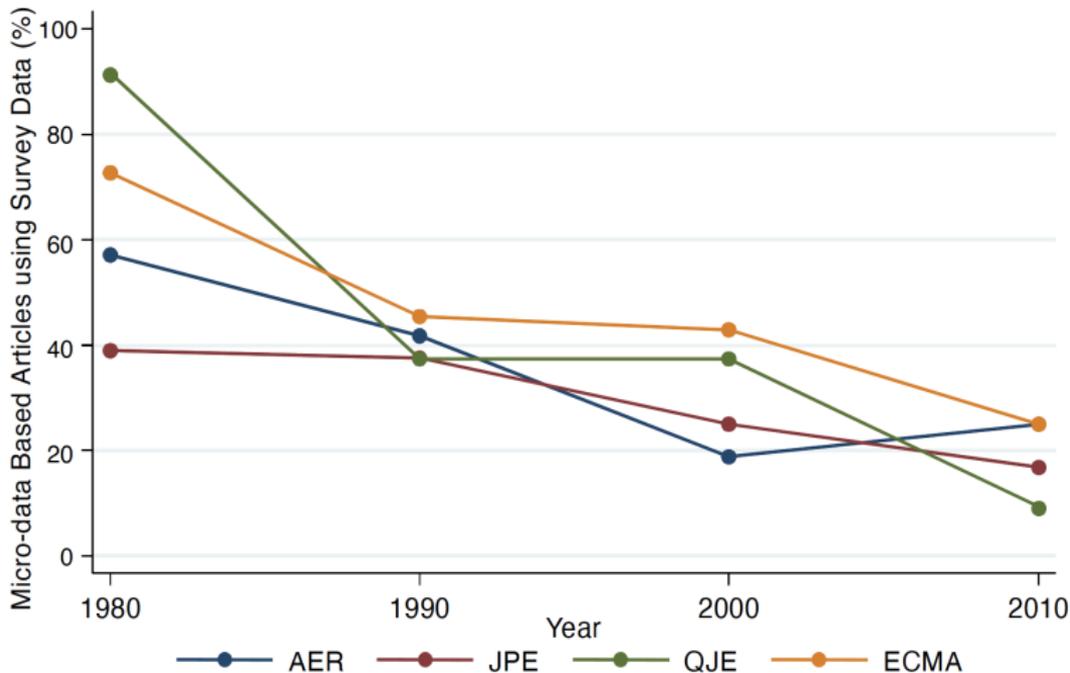
Anscombe (1973): Dataset 4



Theme 3: Big Data

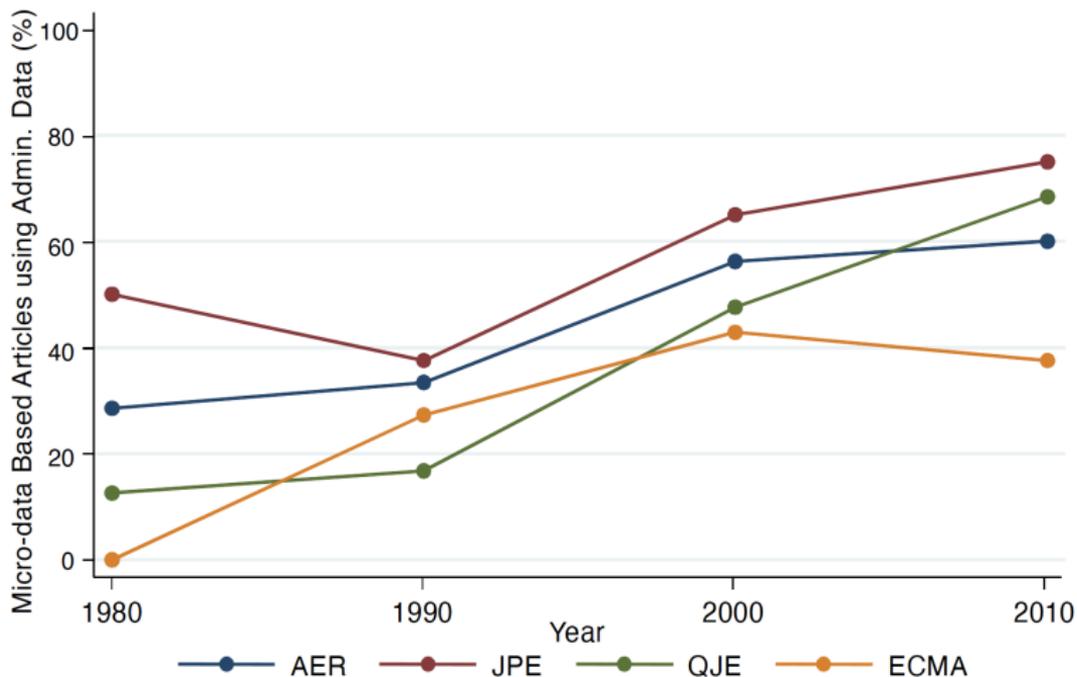
- Compelling implementation of quasi-experimental methods requires a lot of data
- Recent availability of very large datasets has transformed research in applied microeconomics
 - Scanner data on consumer purchases
 - Tax and social security records
 - School district databases

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



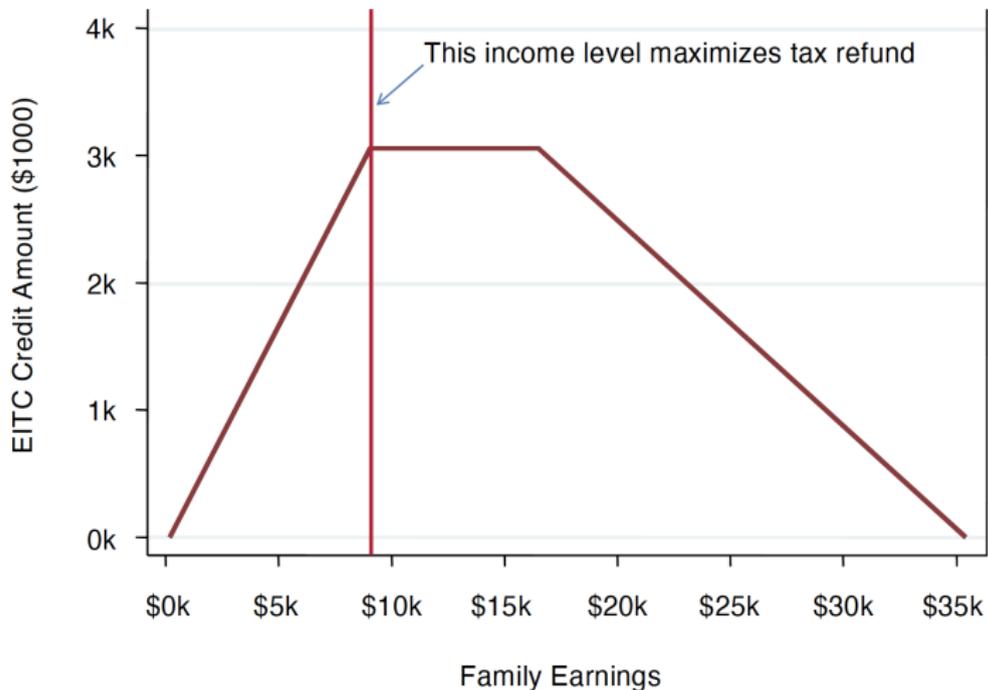
Note: "Administrative" datasets refer to any dataset that was collected without directly surveying individuals (e.g., scanner data, stock prices, school district records, social security records). Sample excludes studies whose primary data source is from developing countries.

- 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

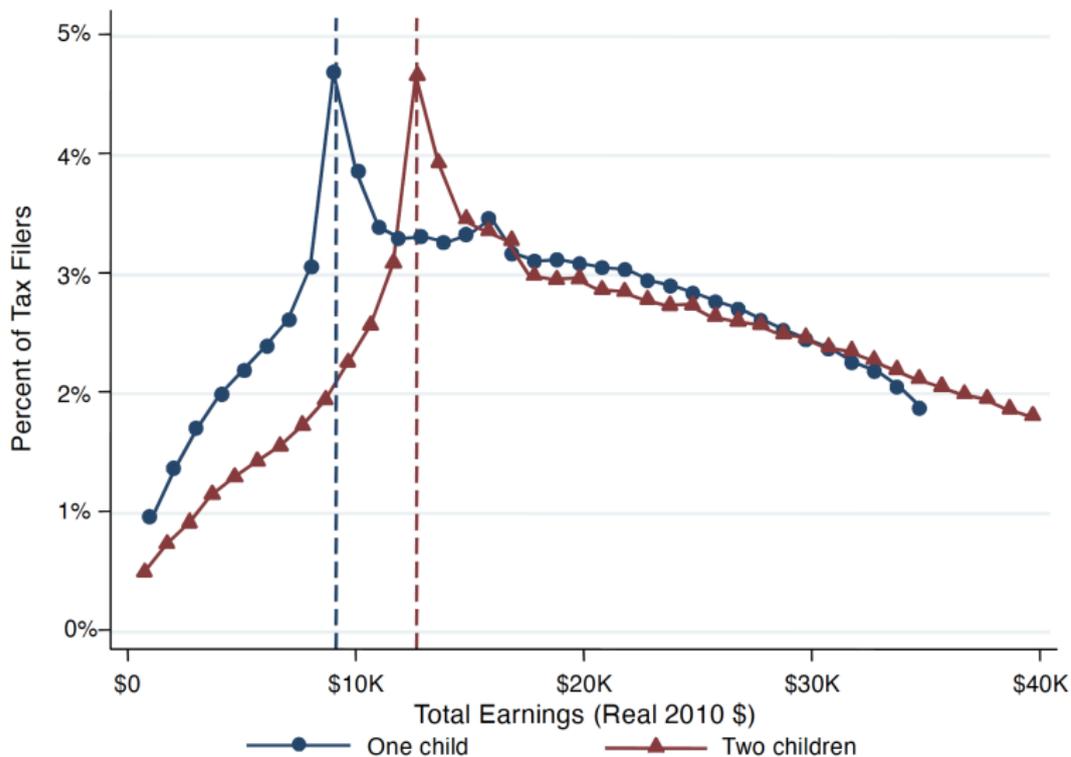
Benefits of Administrative Data

- Higher quality information: virtually no missing data or attrition
 - Current Population Survey non-response rate now 31% for income
- 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]
- Very large sample sizes: 2,000 times the size of the CPS
 - Can develop new research designs

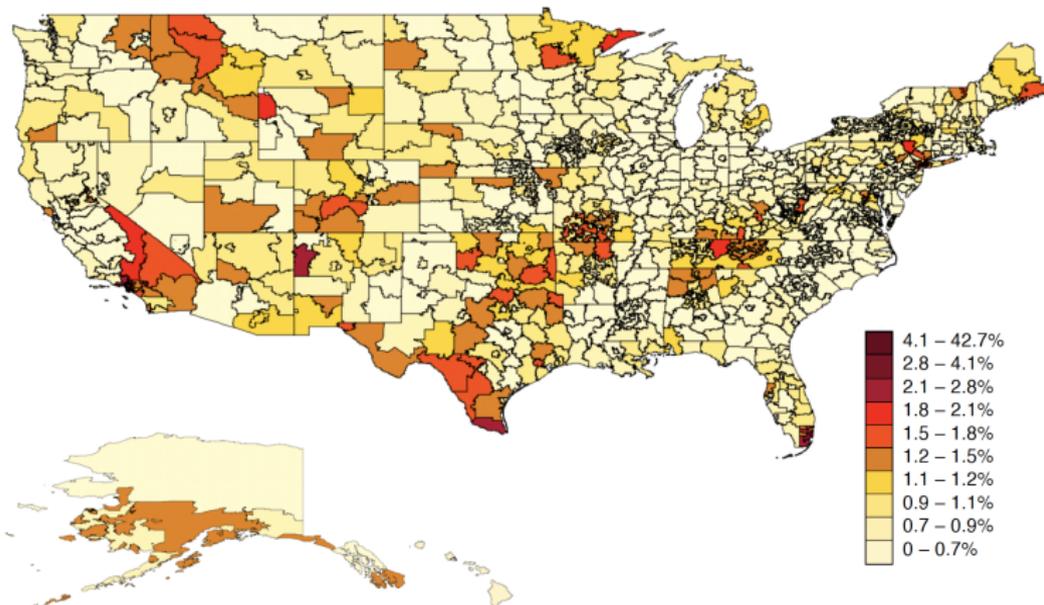
Earned Income Tax Credit Schedule for Single Earners with One Child in 2008



U.S. Income Distributions for EITC-Eligible Individuals with Children in 2008

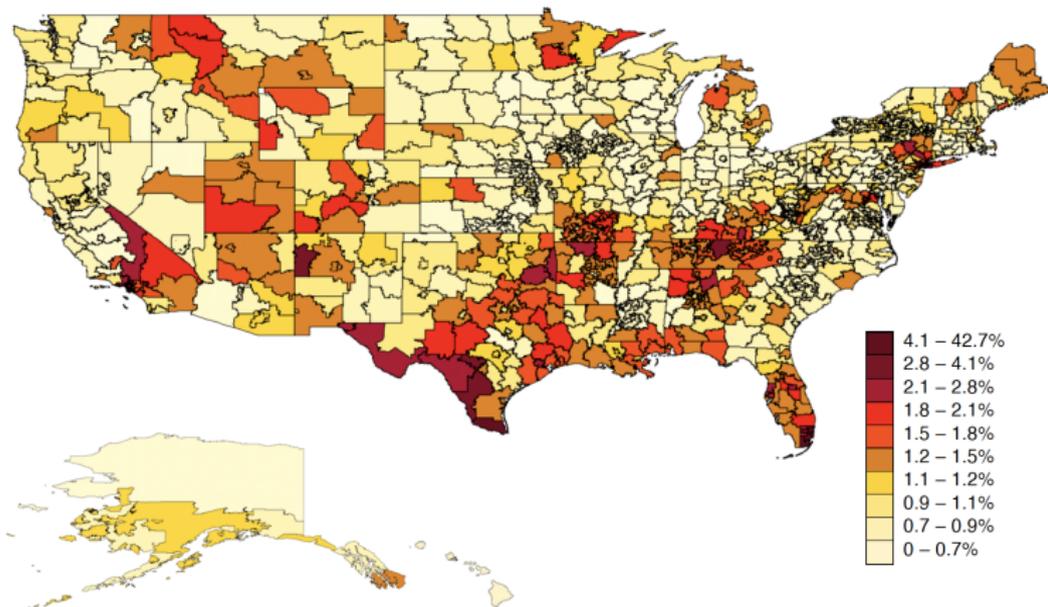


Fraction of Tax Filers Who Report Income that Maximizes EITC Refund in 1996



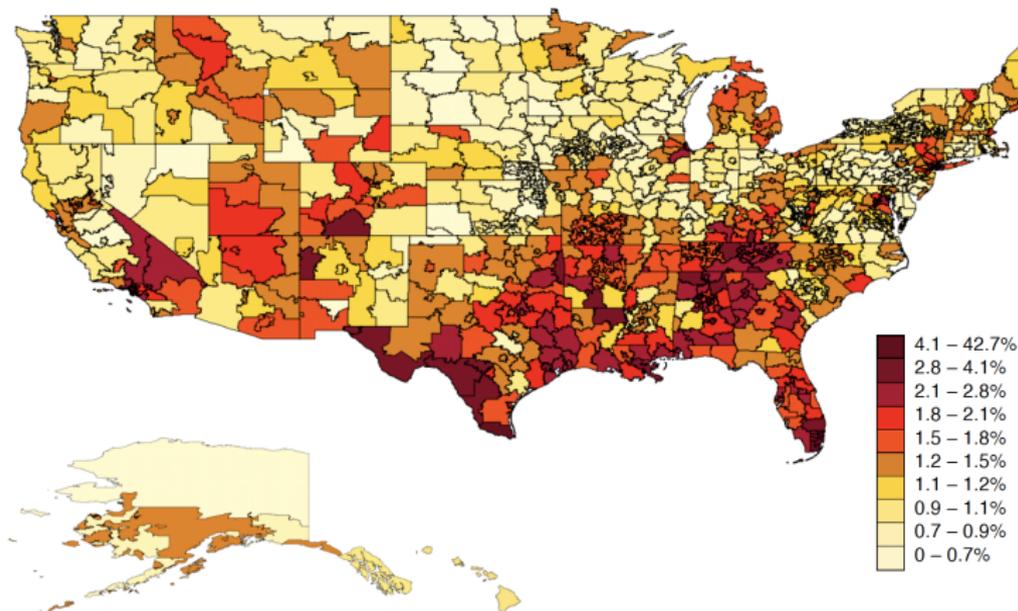
Source: Chetty, Friedman, Saez 2012

Fraction of Tax Filers Who Report Income that Maximizes EITC Refund in 1999



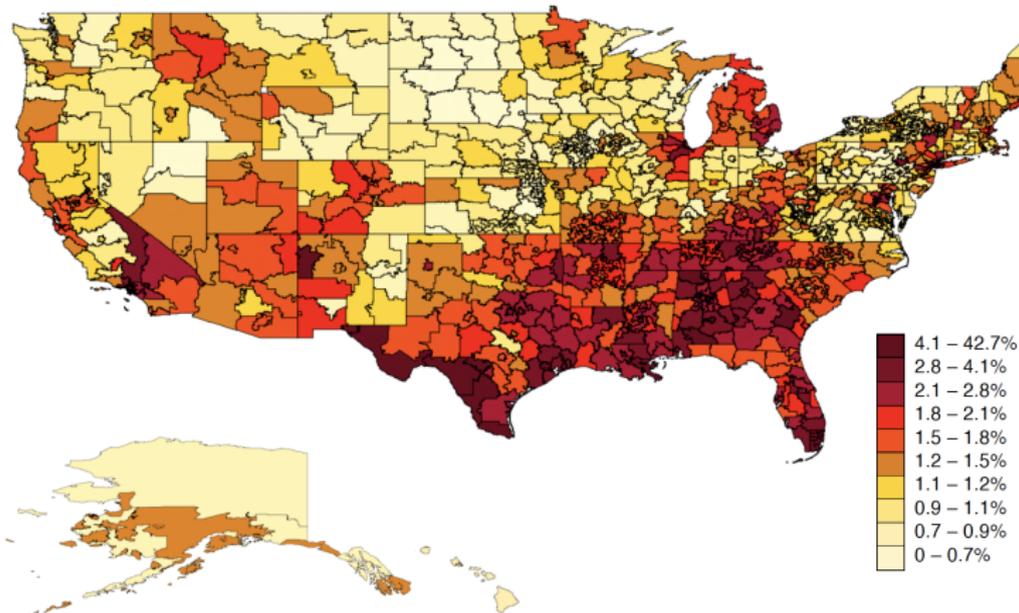
Source: Chetty, Friedman, Saez 2012

Fraction of Tax Filers Who Report Income that Maximizes EITC Refund in 2002



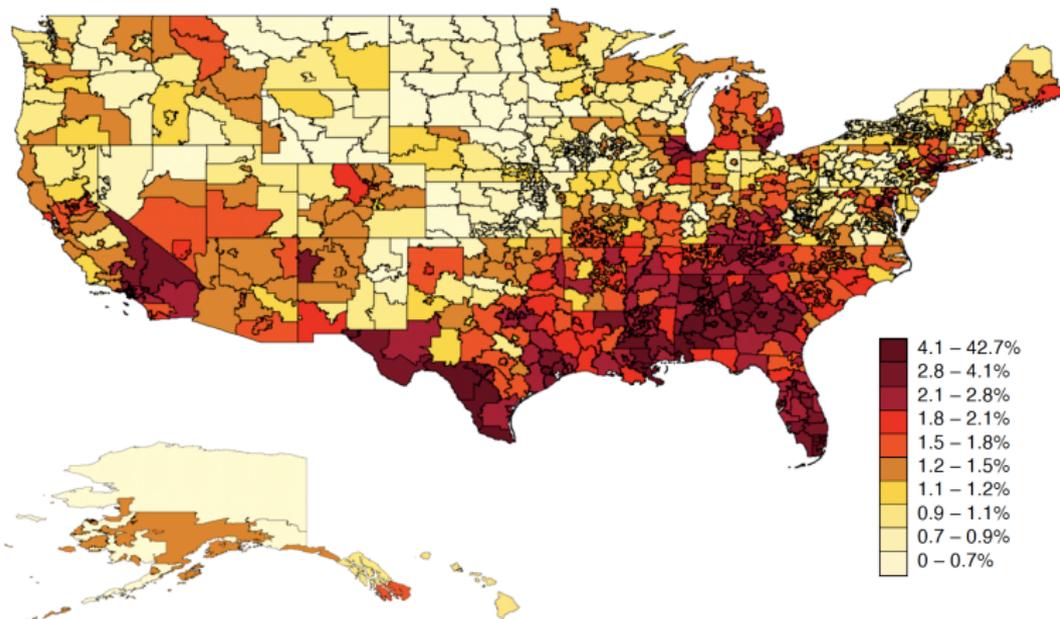
Source: Chetty, Friedman, Saez 2012

Fraction of Tax Filers Who Report Income that Maximizes EITC Refund in 2005



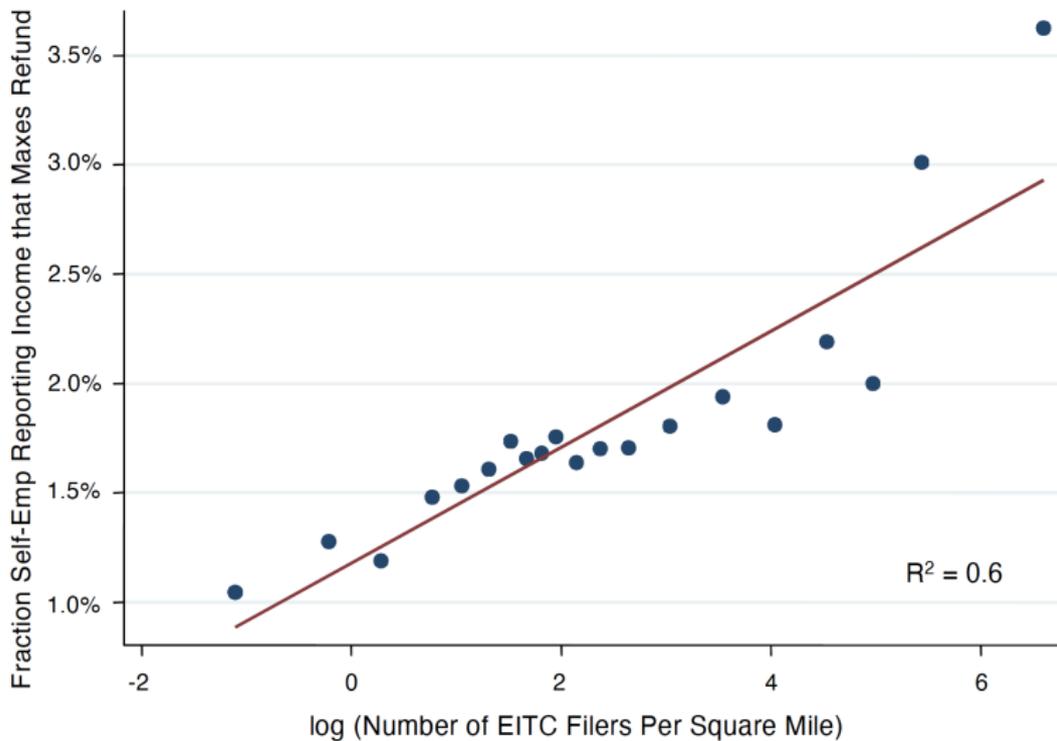
Source: Chetty, Friedman, Saez 2012

Fraction of Tax Filers Who Report Income that Maximizes EITC Refund in 2008



Source: Chetty, Friedman, Saez 2012

Correlation Between Response to EITC and EITC Filer Density by ZIP Code



- Not all administrative data is private
- “Administrative data” just means data that were generated for administrative purposes
- Example: U.S. state budget documents contain data on how much tax revenue states raise and how much they spend on specific programs
 - These data are administrative and publicly available, but may still be useful to economists
 - But you may need to scrape data off of PDFs to get it into a usable format

Theme 4: Behavioral Models

- Recent work in public economics draws on insights from psychology and economics literature
 - Strong evidence that individuals fail to optimize
- Raises new policy questions
- Suggests new policy instruments
 - Information, social incentives, nudges/reminders

Government Intervention

Government Intervention in the Economy

- Organizing framework: “When is government intervention necessary in a market economy?”
 - Market first, govt. second approach
 - Why? Private market outcome is efficient under broad set of conditions:
 - ① No externalities
 - ② Perfect information
 - ③ Perfect competition
 - Tells us when government should intervene

Failure 1: Externalities

- Markets may be incomplete due to lack of prices (e.g. pollution)
 - Achieving efficient Coasian solution requires an 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: Asymmetric Information and Incomplete Markets

- 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
- Ex. 3: Markets for intergenerational goods
 - Future generations' interests may not be fully reflected in market outcomes

Failure 3: Imperfect Competition

- When markets are not competitive, there is role for govt. regulation
 - Ex: natural monopolies such as electricity and telephones
- This topic is traditionally left to courses on industrial organization (IO)
- But taking the methodological approach of public economics to problems traditionally analyzed in IO is a very promising area

Individual Failures

- If agents do not optimize, government intervention (e.g. by forcing saving via social security) may be desirable
- This may or may not be an individual “failure” rather than a market failure
- Conceptual challenge: how to avoid paternalism critique
 - Why does govt. know better what's desirable for you (e.g. wearing a seatbelt, not smoking, saving more)
- Difficult but central issues for optimal policy design

Redistributional Concerns

- Even when the private market outcome is efficient, may not have good distributional properties
- Efficient markets generally seem to deliver very large rewards to small set of people (top incomes)
- Government can redistribute income through tax and transfer system

Why Limit Government Intervention?

- One solution to these issues would be for the government to oversee all production and allocation in the economy (socialism)
- Serious problems with this solution
 - ① Information: how does government aggregate preferences and technology to choose optimal production and allocation?
 - ② Government policies distort incentives (behavioral responses in private sector)
- In practice, there are sharp tradeoffs between costs and benefits of government intervention

Three Types of Questions

- 1 Positive analysis: What are the observed effects of government programs and interventions?
- 2 Normative analysis: What **should** the government do if we can choose optimal policy?
- 3 Public choice/Political economy
 - Develops theories to explain why the government behaves the way it does and identify optimal policy given political economy concerns
 - Criticism of normative analysis: fails to take political constraints into account