

14.472 Public Finance II

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Fall 2025

Course Goals and Mechanics

Redistribution

Social insurance

Course Goals and Mechanics

- Public Economics is about optimal government intervention in the economy
- Two Broad Questions (central to public finance)
 - Rationale(s) for government intervention
 - Optimal form for that intervention
- Main rationals for intervention:
 - Redistribution
 - Correcting Market Failures

Course Overview

- Two main topics and one experimental topic
 1. Redistribution (10 lectures)
 2. Social Insurance (11 lectures)
 3. Public Finance Potpourri (3 lectures)
- Course Emphasizes:
 - Normative as well as descriptive
 - Complementarities between theory and empirics
 - Complementarities across a range of empirical methods, including RCTs, "reduced form" quasi-experimental work; sufficient statistics; "structural estimation"; calibrated life cycle models
 - (Some of the) highlights of (some of the) literature
 - (Some of) what we know
 - Will highlight what we think are open/important areas for (your?) research

Institutional background

- Will spend minimal time on key institutional details
 - Have tried to focus course around economic issues rather than programs per se
 - In practice a given economic issue has often have been studied in the context of a particular program
 - Good strategy for students: can you apply these ideas / tools to a different program?
- A deep understanding of institutional details is essential for own research
 - You should also familiarize yourself with the basics on any topic we are discussing
 - Good sources (listed on syllabus)
 - For general orientation: Gruber textbook
 - For more details: Moffit 2016
- A key benefit of public economics is its relevance for economic policy
 - TCJA, ACA, CTCs, Opportunity Zones, Vouchers, Public Housing, work requirements, taxes on tips!
 - What do these policies do? Are they a good idea?

- Reading list
 - Read a small number of papers carefully
 - **Read the bolded papers before class**
 - Read actively / critically.
 - Keep a list of research ideas that occur to you!
 - Additional listing hopefully a useful reference when a topic sparks your interest
- Strongly recommended
 - Attend public finance lunch (Mondays 12 – 1)
 - Attend applied micro seminar (Mondays 4 – 5:30)
 - Don't make attendance decisions based on whether content looks interesting, just always come.

Recitation

- New approach this year:
 - Review / synthesis of highlights from the lectures that week
 - Sorting out confusions we introduce in class
- Attendance strongly advised (if time conflicts with another section we can re-optimize)

Course Requirements

- Class participation is essential
 - Pre-randomized cold calling

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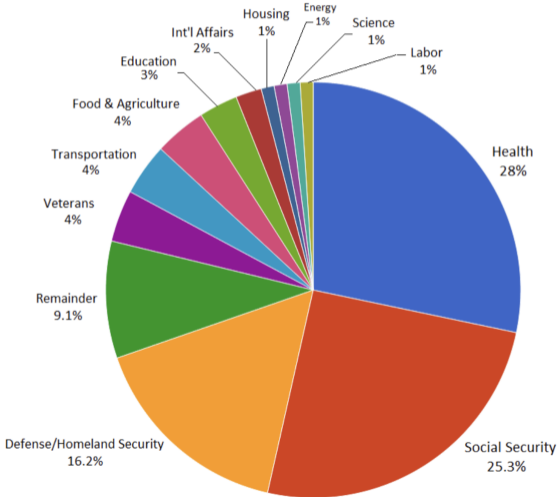
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- Two problem set
- Research proposal
- Final exam (closed book, 3 hours)

How Does the US Govt Spend Money?

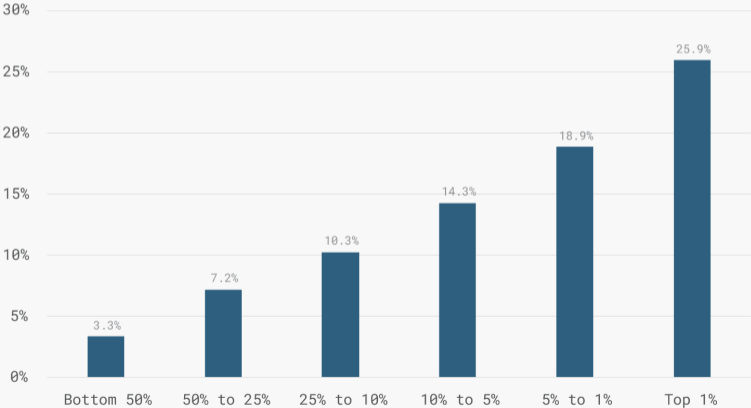
Percent of spending, including discretionary and mandatory



How Does the US Govt Raise Revenue?

High-Income Taxpayers Paid the Highest Average Income Tax Rates

Average Federal Income Tax Rate by Income Group in 2021



Today's class: overview of redistribution and social insurance

- Redistribution:
 - Basic facts
 - Why is government involved?
- Social insurance
 - What is it
 - Basic facts
 - Why is government involved?

Redistribution

Social Welfare Functions and Social Preferences for Redistribution

- Social Welfare Function $SW(x)$ indicates how a social state x is evaluated
- Individualistic Social Welfare Function (a.k.a "welfarism")
 - Social welfare depends only on individuals' utility

$$SW(x) = W(u_1(x), \dots, u_n(x))$$

- Only arguments in social welfare function are individual utilities
- Normative premise: only relevant aspect of a regime is the manner in which it affects each individual's well-being (Sen 1977, 1979)

Individualistic social welfare function

- Social welfare depends only on individuals' utility

$$SW(x) = W(u_1(x), \dots, u_n(x))$$

- What restrictions does this impose?
 - No arguments enter W directly - only through individual utilities.
 - All social relevance can be traced to effects on individuals' welfare
 - i.e. precludes "society values...", "society cares about..."
 - Things *only matter* through their impact on individuals' utilities, and *how they matter* depends entirely on how they affect individuals' utilities
- Implication: notions of "fairness" or "equity" have no role unless they are concerned with the distribution of utility or they are in some respect a proxy for effects on utility
 - More to come...

$$SW(x) = W(u_1(x), \dots, u_n(x))$$

- Common to use an additive social welfare function

$$SW(x) = \int W(u_i(x))f(i)di$$

- *Additive* SWF does not necessarily mean *utilitarian* SWF
- Also common to use fixed weights

$$SW(x) = \int \psi_i u_i(x) f(i) di$$

where ψ_i are “Pareto weights”.

- What is the difference between ψ_i vs. $W(u_i(x))$?
- Can/should we compare utils?

$$SW(x) = \int W(u_i(x))f(i)di$$

- Useful formulation (Stern 1976, optimal taxation SWF)

$$SW(x) = \begin{cases} \int \frac{u_i(x)^{1-e}}{1-e} f(i)di & \text{for } e \neq 1 \\ \int \ln u_i(x) f(i)di & \text{for } e = 1 \end{cases}$$

- where $e \geq 0$ indicates degree of aversion to inequality in the distribution of utility levels

- Two source of concavity

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- $u_i(x)$: utility function with its own concavity
- e : inequality aversion parameter

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- $u_i(x)$ - utility function with its own concavity
 - All that matters if Utilitarian SWF ($e = 0$)
- Generates preference for equalizing consumption:
 - consider CRRA utility: $u(c) = \frac{c^{1-\sigma}}{1-\sigma}$
 - $u'(c) = \frac{1}{c^\sigma}$
 - Example: suppose $\sigma = 2$,
 - Now marginal utility is inversely proportional to the *square* of consumption
 - consider marginal utility of consumption at 10k and 1 million
- Note: extent of concavity of utility function is an *empirical* question (see attempts to estimate risk aversion!)

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- e : inequality aversion parameter
 - Additional (or reduced) curvature in the SWF itself
- $e = 0$ indicates social welfare is sum of utilities ("utilitarianism")
- $\lim_{e \rightarrow \infty} SW(x)$ is Rawlsian ("maximin") in which all weight is placed on the utility of the least well-off individual
- Note: this is a *value judgment*

Inequality aversion

- e : inequality aversion parameter
 - Additional (or reduced) curvature in the SWF itself
- Note: this is a *value judgment*
- But efforts to examine what inequality aversion is empirically
 - e.g. Kuziemko et al. (2015 AER) "How Elastic are Preferences for Redistribution"
 - uses on-line surveys to try to elicit preferences for redistribution and how they can be affected by the information provided
 - e.g. Jacobs et al. (2017 JPubEc) "Revealed social preferences of Dutch political parties"
 - uses election proposals and inverse optimum method to reveal / back out implicit preferences that make the proposal optimal

Two sources of Concavity: Comment

$$SW(x) = \begin{cases} \int \frac{u_i(x)^{1-e}}{1-e} f(i) di & \text{for } e \neq 1 \\ \int \ln u_i(x) f(i) di & \text{for } e = 1 \end{cases}$$

- The more concave are individuals' utility functions, the less relevant will be the degree of concavity in social welfare as a function of individuals' utility
- e.g. a utilitarian SWF with a lot of concavity in the individual utility function might get pretty close to Rawlsian SWF w less concavity in individual utility function

Welfarism and the Pareto Principle

- Recall definition: individualistic SWF depends on - *and only on* - individuals' utilities
 - Motivation (Singer 1988) " But how can something *matter* if it does not matter *to anyone*, or to any group of beings?"
- Kaplow and Shavell (2001 JPE): Any non-individualistic welfare function violates the Pareto principle
 - i.e. would be willing to making everyone worse off to increase SW
- Intuition:
 - non-individualistic SWF must give weight to a factor, independent of its effects on individuals' well-being
 - compare a given social state (A) to another (B) that is identical except in two respects: A is
 - is inferior with respect to the nonutility factor and,
 - every individual is ever-so-slightly better off (due to having a bit more of some good)

Parting thoughts

- Individual utility (and marginal utility) are never observed. Many papers are sloppy about this!
 - Common to normalize utility by marginal utility of income \rightarrow “money metric” utility
 - Is there opportunity to better measure preferences (utility functions, social welfare functions etc)?
- Aggregation requires explicitly specify SWF:
 - It is useful to write down what SWF you are maximizing. This way you can be sure you are solving a well-defined problem..

Why doesn't private market maximize social welfare function?

- Would you “buy” redistribution?
 - Conceptualize veil of ignorance contract selection but in practice don't observe this state
 - More to come when talking about adverse selection in insurance markets...
- Externalities from public provision
 - Fiscal externalities (taxable income / human capital responses)
 - Public goods / non-excludability → Free-rider problem
 - Private externalities (e.g. uncompensated care)
 - Climate externalities (e.g. emissions externalities)
 - Others?

What happens when government redistributes

- Arthur Okun and the Leaky Bucket
 - Without a leaky bucket, SWF \rightarrow full redistribution!
- This part of the course:
 - Measuring the leaks
 - Minimizing the leaks

Key topics on redistribution we will cover

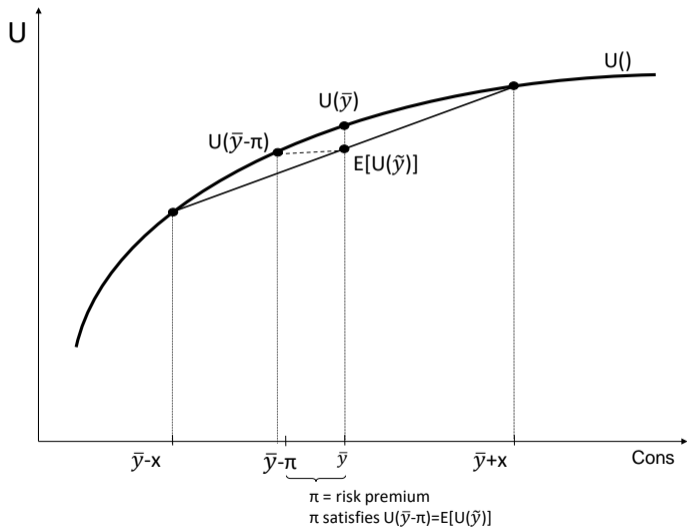
- Empirical Welfare Analysis and the Marginal Value of Public Funds (MVPF)
- Cash vs. In Kind Redistribution
- Take-up and Self Targeting
- Place-Based Policies
- Applications: Neighborhoods and kids, inter-generational redistribution, food stamps

Social insurance

What is insurance?

- Insurance transfers resources from states of the world with low marginal utility of consumption to those with high MU of consumption
 - Goal: equate (smooth) marginal utility of consumption across states of the world
 - States of world: e.g. sick vs. healthy; car accident vs. not
- Key point: risk averse individual prefers to pay \$10 for sure than face a one in ten thousand risk of having to pay \$100,000
 - By pooling idiosyncratic risk, can make everyone better off

Insurance: A Free Lunch!



What is Social Insurance?

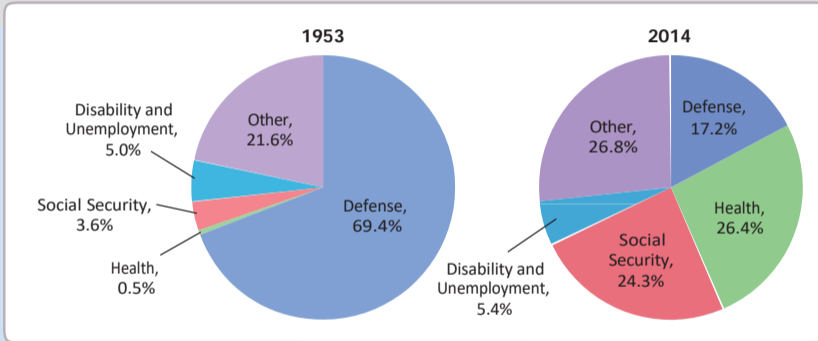
- Government intervention in provision of insurance
 - E.g: unemployment, disability, health, death
 - Motivation: share risk of idiosyncratic shocks to individuals
 - Consumption smoothing value to risk averse individuals (recall graph: free lunch!!)
- Is it different from means-tested redistribution (e.g. cash welfare, food stamps, subsidized housing, subsidized health insurance)?
 - Yes: Redistribution based on “permanent” differences (vs smoothing shocks)
 - Note: Redistribution can be thought of as insurance behind the Rawlsian veil of ignorance
 - Some programs explicitly involve both insurance and redistribution (e.g. Social Security / public pensions)

Social Insurance: The changing function of government

- SI share of federal expenditures has increased from ~9% (1953) to ~55% (2014)
- “Loosely speaking, the post-cold-war federal government is a big pension fund that also happens to have an army” (Peter Fisher, undersecretary of Treasury 2002)

The changing function of government

FIGURE 12-1



Government Spending by Function, 1953 and 2014 • Government today devotes a much larger portion of its budget to social insurance than it did 50 years ago.

Data from: Office of Budget and Management (2014); Bureau of Economic Analysis, nIPA Table 3.16.

Main Social Insurance & Redistribution Programs in the US

Program	People Receiving Benefits (Millions)	Annual Federal Spending (Billion \$)	Year	Source
Medical Care				
Medicare	57	583	2016	HHS 2016 budget-in-brief
Medicaid	72.6	344	2016	HHS 2016 budget-in-brief
Old Age Assistance	50	765.6	2016	SSA monthly statistical snapshot, June 2016
Workplace Insurance				
Unemployment Compensation	?	32.3	2016	Congressional Research Service Report 33362
Workers Compensation	?	61.9	2015	Congressional Research Service Report 44580
Disability Insurance	10.7	132	2016	SSA monthly statistical snapshot, June 2016
EITC	62.9	54.9	2012	Congressional Research Service Report 44327
Welfare				
SSI	8.3	56.4	2016	SSA monthly statistical snapshot, June 2016
TANF	5.8	6.7	2012	Congressional Research Service Report 44327
SNAP	58	77.8	2012	Congressional Research Service Report 44327
WIC	8.1	7.2	2012	Congressional Research Service Report 44327
Housing Assistance	10.8	33.4	2012	Congressional Research Service Report 44327

Main Social Insurance Programs in US

- Prior slide gives (crude) sense of relative magnitudes (in terms of \$ and "beneficiaries") of different programs (c. 2016)
 - Note: actual "beneficiaries" exceed those who receive benefits ex post (insurance value ex ante; incidence of costs to uninsured)
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- In terms of insurance value?
 - Insurance value is about variance, not mean
- Meta question: How to think about optimal allocation of \$\$ across programs (including those with potentially with different goals - eg insurance vs redistribution)?
 - Stay tuned for Hendren's "Marginal Value of Public Funds" (MVPF) and Hendren and Sprung-Keyser (2020)

Rationales for social insurance

- Thus far: insurance can be very valuable and government is very involved
- Now: why would government be involved?

1. Private market failures

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 3. Individual failures of rationality / optimization
 4. Paternalism

Private market failures

- Imperfect Competition [go take IO]
- Asymmetric Information
- Aggregate Shocks
- Externalities

Asymmetric Information

- Selection markets: consumers vary not only in their WTP but in how costly they are to the seller
- Main applications:
 - insurance markets
 - credit / loan markets
- Other applications:
 - education
 - labor markets

Two Types of Asymmetric Information

- Adverse selection
 - Individuals have private information about their costs
 - My favorite private market failure

Two Types of Asymmetric Information

- Adverse selection
 - Individuals have private information about their costs
 - My favorite private market failure
- Moral hazard
 - Individuals take hidden actions in response to contract
 - In general not something the government has a comparative advantage in addressing.
 - Critical though for optimal policy design

Aggregate Shocks

- Economic downturn (UI), natural disasters, terrorist attacks

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No one will have the endurance to collect on his insurance, Lloyd's of London will be loaded will be loaded when they go

- Tom Lehrer "We Will All Go Together When We Go"

- Private insurance markets can diversify idiosyncratic risk cross sectionally but if want to smooth intergenerationally, government may have comparative advantage.
- Or perhaps the capital markets ("act of god" bonds)
 - Relatively little work here.

- Examples: Infectious disease, third party damages from driving; pollution
- Policies:
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- Inter-temporal externalities: Samaritan's dilemma

Samaritan's dilemma

- People are altruistic (Parable of the Good Samaritan)
- Lack of commitment creates a time inconsistency problem (Buchanan 1975)
- Scope of welfare-improving government intervention (Coate AER 1995)
 - rich altruists, and rich averse poor who face some probability of loss
 - public finance perspective: altruism provides an efficiency rationale for public provision of transfers to the poor (a public good; free-riding / underprovision of private charity; welfare improvement through government provision)
 - Coate insight: altruism also affects form of transfers - reason for in-kind transfers of insurance or investments (eg education or job training)
 - With unconditional cash transfers the poor may forgo insurance and rely on private (or publicly-funded) charity to bail them out
 - We can't commit not to take care of people in certain circumstances, which will lead them to under self-insure (e.g. food pantries; rebuilding after a flood; hospital charity care)
 - Even if government can commit, the fact that private actors cannot creates role for public policy

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- Traditionally, externalities have gotten relatively little attention as motivation for social insurance
 - But are potentially important in some contexts
 - Spoiler Alert: Samaritan's dilemma may be crux to health insurance policy / reform
 - Will return to later in course / a great area for work

- Want to redistribute based on hidden information ("ability", "well being")
 - Social Insurance as Akerlovia tag (Akerlof 1978)
 - lifetime earnings (SS); health insurance (poor are sicker).

Redistribution

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 - Is this the most efficient way to do redistribution (vs. e.g. progressive income tax)

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 - Do we want this type of redistribution (who are the winners?)
 - Is this the most efficient way to do redistribution (vs. e.g. progressive income tax)
- Note many models of redistribution share features w models of asymmetric information / adverse selection (e.g. Diamond-Mirrlees and other screening models)
 - Can also think about redistribution as ex-ante insurance (insurance behind the veil of ignorance)

- In purchasing insurance
 - Overconfidence / don't understand probabilities (young think they're invincible)
 - Overweight low probability events (buy flight insurance)
 - Inattention / inertia / confusion...

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- In consumption decisions
 - e.g. Myopia: too little savings; under-investment in preventive care

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 - "We as a society don't want access to health care to depend on income" (even if poor would prefer the cash equivalent)
- Why?
 - Non-individualistic social welfare function
 - Consumption of that particular good enters SWF not through individual utilities
 - "Consumption Externalities" My utility depends on your consumption

What can government do?

- Power to change prices
 - tax/subsidize
 - regulate pricing (levels, formulas)

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 - tax/subsidize
 - regulate pricing (levels, formulas)
- Power to change quantities
 - Mandate individuals to purchase or firms to offer product
 - Publicly provide
 - Regulate (e.g. minimum standards)

Choice of Instrument

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- Choice of Instrument = understudied question
 - Conditional on intervening, what form should it take?
 - Lamppost problem!

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 - How large is welfare gain from a given (or optimal policy) intervention?
 - What are costs from policy intervention?
 - What is the optimal policy intervention? (choice of instrument)

Key topics on social insurance we will cover

- Asymmetric Information and Insurance Markets:
 - Theory and Testing
 - Empirical Welfare Analysis with and without revealed preference
- Optimal Design of Social Insurance Benefits
- Reclassification Risk
- Optimal Health Insurance Policy for Low-Income Individuals

Experimental (Potpourri)

- Optimal choice of instrument
- Employment programs
- Cash transfers