Public Economics II: Public Expenditures Introduction

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Thanks to Others

The slides I am using this term are influenced by and adapted from those used by lots of other faculty teaching PE across different universities including:

- Hunt Alcott

- Antoine Bozio

- Raj Chetty

- Nathaniel Hendren

- Rory McGee

- Thomas Piketty

Basic Information

- Contacting me: davexmac@gmail.com or david.macdonald@aalto.fi

- Course website on My Course: https://mycourses.aalto.fi/my/

- Office hours: by appointment (with advanced notice could meet at Economicum)

- Teaching assistant: Ellen Sahlström (ellen.sahlstrom@helsinki.fi)

What is Public Economics?

- Public Economics: the study of the role of government in the economy.

- Government is involved in most aspects of the economy:

  1. Regulation: Minimum Wages, labour laws, environment, Fimea, Ruokavirasto...
  2. Macro-economic stabilization: monetary/fiscal policy.
  3. Taxes: Finland collected roughly 30% of it's GDP in taxes in 2022.
  4. Expenditures: taxes fund **public goods** (infrastructure, public safety, national defense) **Social Insurance** (social security, disability, unemployment, medical) **welfare state** (income support, public housing,

What will be covered in this course?

Public Expenditures: When the government spends tax revenue (taxation covered in Public Economics I)

- ▸ Topics:
    - ▸ Externalities
    - ▸ Public Good provision
    - ▸ Social insurance (adverse selection, moral hazard, health, disability, UI, social security)
    - ▸ Education
    - ▸ The welfare state and criminal justice

- ▸ Material:
    - ▸ Core theory
    - ▸ Empirical evidence
    - ▸ Newer developments
    - ▸ Empirical methods

Resources

The Handbook of Public Economics Vol. 1 - 5

- ▸ Chetty, R. and Finkelstein, A. (2012). Chapter 3. social insurance: Connecting theory to data. Handbook of Public Economics, 5

Atkinson, Anthony B.; Stiglitz, J. E. (2015). Lectures on Public Economics. Princeton University Press

Myles, G. D. (1995). Public Economics. Cambridge University Press

Assesment

- ▸ 3 Problem Sets (40%)

- ▸ Presentation: Finnish Public Economics Papers (10%)

- ▸ Final exam (50%) (April 17)

- ▸ Ph.D. Students will write 2 referee reports. Papers decided on jointly.
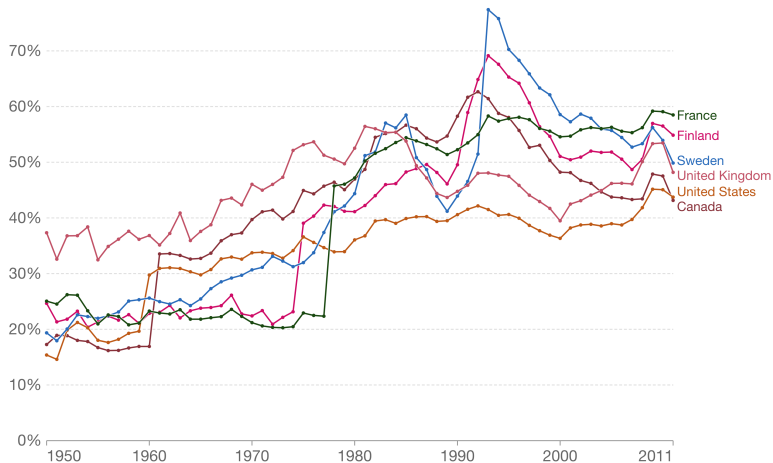
Why Public Economics?: Relevance

- Governments play a large role in modern economies.

Government spending, 1950 to 2011

Total government spending, including interest government expenditures, as share of national GDP

France
Finland
Sweden
United Kingdom
United States
Canada

Source: IMF Fiscal Affairs Departmental Data, based on Mauro et al. (2015)   OurWorldInData.org/government-spending • CC BY

Public social spending as a share of GDP, 1920 to 2016

Social spending includes, among others, the following areas: health, old age, incapacity-related benefits, family, active labor market programmes, unemployment, and housing.
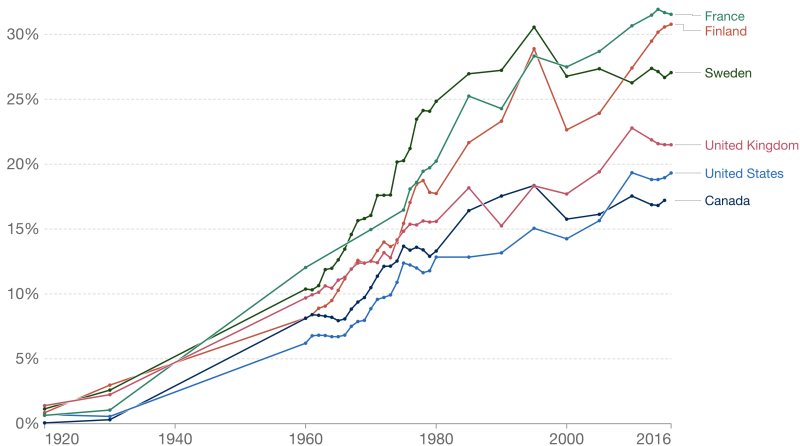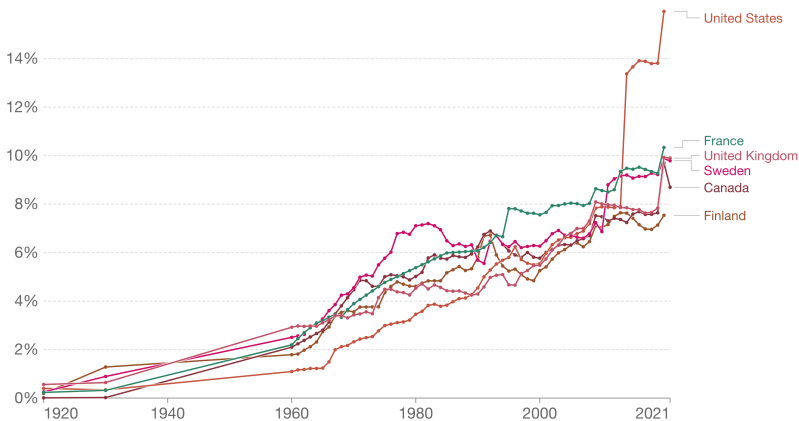
Source: Our World in Data based on OECD and Lindert (2004)   OurWorldInData.org/government-spending • CC BY

Government health expenditure as a share of GDP, 1920 to 2021

This metric captures spending on government funded health care systems and social health insurance, as well as compulsory health insurance.
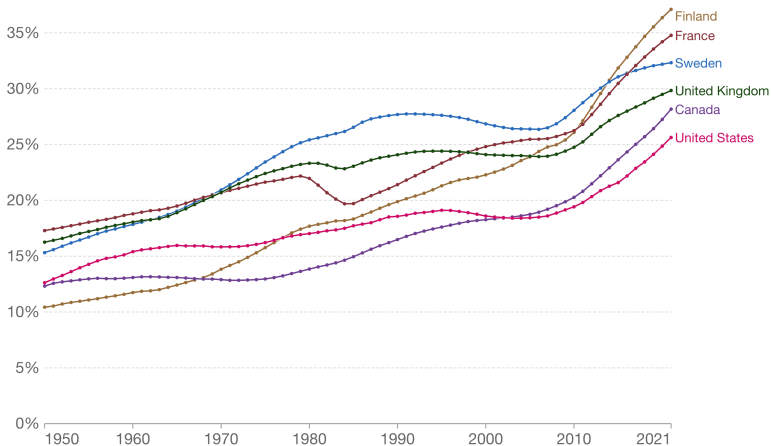
Source: Our World In Data based on Lindert (1994), OECD (1993), OECD Stat
OurWorldInData.org/financing-healthcare • CC BY
Note: Health spending includes final consumption of health care goods and services (i.e. current health expenditure). This excludes spending on capital investments.

Old-age dependency ratio, 1950 to 2021

The ratio of the number of people older than 64 relative to the number of people in the working age population (15-64 years). Data are shown as the number of dependents per 100 working-age population.

Finland
France
Sweden
United Kingdom
Canada
United States

35%
30%
25%
20%
15%
10%
5%
0%

1950   1960   1970   1980   1990   2000   2010   2021

Source: United Nations - Population Division (2022)

OurWorldInData.org/age-structure • CC BY

Old-age dependency ratio, 1950 to 2021

The ratio of the number of people older than 64 relative to the number of people in the working age population (15-64 years). Data are shown as the number of dependents per 100 working-age population.
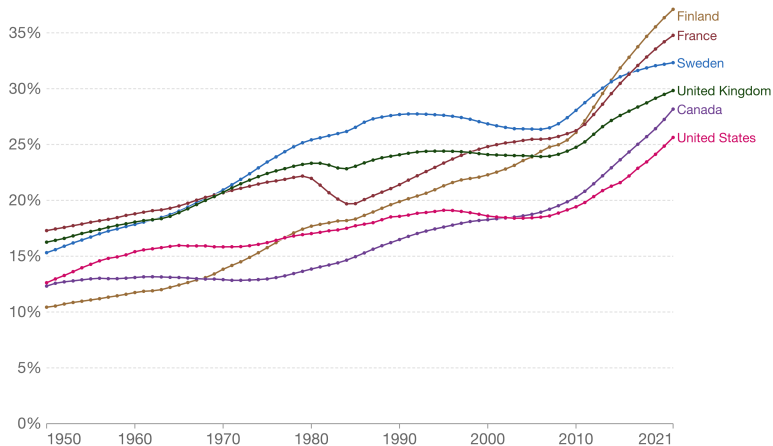

Finland
France
Sweden
United Kingdom
Canada
United States

Source: United Nations - Population Division (2022)

OurWorldInData.org/age-structure • CC BY

Distribution of Government Spending

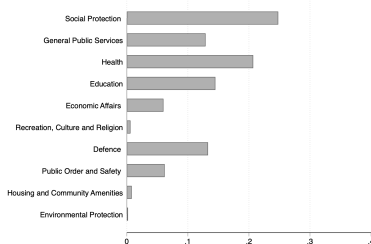United Nations' Classification of the functions of government (COFOG):

- ▸ Defence
- ▸ Public Order and Safety
- ▸ General Public Services
- ▸ Economic Affairs
- ▸ Social Protection
- ▸ Health
- ▸ Education
- ▸ Housing and Community Amenities
- ▸ Recreation and Culture
- ▸ Environmental Protection

Public Spending by Function of Government
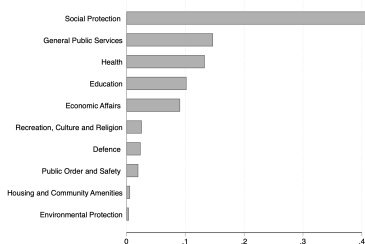
Finland

USA

Source: Eurostat, U.S. Bureau of Economic Analysis

Why Public Economics?

- Governments play a large role in modern economies.

- Public policies affect millions of people.

- Public economics is about good government.

- Interest in improving social welfare $\longrightarrow$ interest in public economics.

Why Public Economics?: A Dynamic Academic Field

- Public economics has been at the frontier of the "credibility revolution" in applied microeconomics.
    - Large focus on quasi-experimental research design (DiD, event studies, RDD, RKD, bunching, etc.
    - Strong emphasis on non-parametric graphical research designs.
    - Big data (Administrative tax data, FLEED/FOLK).

- Tight integration of theory and data
    - Good balance of structural and reduced-form methods/evidence.
    - Sufficient statistics: theory used to derive formulas that describe complex models using empirical estimates.

- Public economics has implications or motivates many other subfields.
    - e.g. Labour (Min wages), Macro (stimulus), IO (regulation), behavioural economics (nudges/sin taxes).
    - Education, Health, Environmental, Law and Economics are arguably direct subfields of Public.

When should the government intervene in the economy?

Organising framework: The fundamental welfare theorems.

- ▸ **1st Welfare Theorem:** If (1) no externalities, (2) perfect competition, (3) perfect information, (4) rational agents, then market equilibrium is Pareto Efficient.
- ▸ **2nd Welfare Theorem:** Any Pareto Efficient outcome can be reached by a suitable redistribution of initial endowments.

The two welfare theorems provide two motivations for intervention:

1. The private market outcome is inefficient.
2. The private market outcome creates an income distribution that is undesirable.

First Welfare Theorem

Theorem directly tells us when the government should intervene:

1. Externalities

2. Imperfect Information

3. Non-rational agents

4. Imperfect Competition

Externalities

- Production or consumption of goods that imposes costs or benefits on others

- Markets are incomplete because these costs/benefits are not reflected in market prices (e.g. pollution)
  - Too much of negative externality-generating goods (e.g. pollution)
  - Too little positive externality-generating good (e.g. R&D and ↓)

- Private agents under provide public goods.
  - Free-riding problem

- **Key Questions:** Which and what level of public goods should be provided? What is the optimal policy for addressing an externality?

Asymmetric Information

When some agents have more information than others markets fail.

- Adverse selection in insurance markets
    - Can't identify underlying risk of consumers → low risk pool drops out → market unravels.

- Capital markets (credit constraints) and subsidies for education.
    - Should the government intervene in the form of low interest loans or grants?

- **Key Question:** What is the most efficient way for governments to provide insurance? Does this differ depending on the type of insurance?

Non-Rational Agents/Individual Failure

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

- Myopic agents may fail to properly account for their "future selves" and save too little $\rightarrow$ social security.

- Sin taxes (smoking/junk food), fines (seatbelts)
    - Should the government intervene in the form of low interest loans or grants?

- **Key Question:** "Paternalism critique": Why does the government know better what is desirable/optimal for individuals?

Imperfect Competition

If markets are not competitive, there is a role for government regulation.

- Classic examples: Natural monopolies, anticompetitive behaviour (e.g. collusion/predatory pricing).

- This question is usually left to those working in industrial organisation.

Second Welfare Theorem

Even without market failures the market outcome may have substantial inequality.

- 2nd welfare theorem: A more equal Pareto efficient outcome can be reached using a suitable redistribution of initial endowments (through lump-sum taxes).

- Problem: redistribution of initial endowments is not feasible due to incomplete information.

- If want to reduce inequality, distortionary taxes and transfers are required
  $\longrightarrow$ equity-efficiency trade off.

- How much should we care about inequality?

Before and After-Tax Gini Coefficients
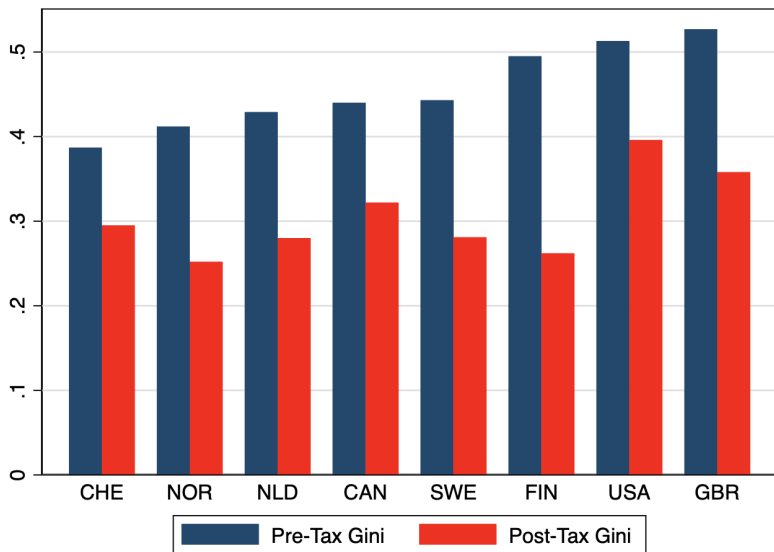
Source: World Bank

Normative vs. Positive Public Econmics

Normative Analysis: Asks how things **should** be:

- ▸ Should we reduce inequality? Should we reduce inequality at the cost of efficiency?
- ▸ Should government intervene in insurance markets?
- ▸ Should we send those who break the law to prison?

Positive Analysis: Asks how things **are**:

- ▸ Do inheritance taxes reduce wealth inequality? Does inequality reduce social cohesion?
- ▸ Does government provided insurance crowd out private insurance? Does disability insurance lead to lower LFP?
- ▸ Does prison reduce future reoffending?

Normative vs. Positive Public Econmics

Normative Analysis has traditionally been primarily theoretical.

- ▸ The starting point of many models is efficiency. Efficiency is an inherently normative goal.
- ▸ Positive theory: theory that provides a testable prediction (government spending crowds out private spending).

Positive Analysis has is primarily empirical.

- ▸ Often empirical questions are motivated by normative considerations.
- ▸ e.g. If I study the impact of prison on mental health outcomes, I've made a value judgement that this is important.

Social Welfare

Public economics is often motivated by asking which policy maximizes social welfare:

$$SW(x) = W(u_1(x), ..., u_n(x))$$

This is an entirely normative construct:

▸ What matters is individual utility, aka what brings people happiness/satisfaction.

▸ What should enter the utility functions?

▸ What should the functional form of SW(x) be?

Different Social Welfare Functions

Utilitarian:

$$SW(x) = \sum_i u_i(x)$$

Rawlsian (Maximin):

$$SW(x) = \min_i \{u_i(x), ..., u_n(x)\}$$

General SWF with preference for equality $\epsilon > 0$:

$$SW(x) = \frac{1}{1-\epsilon} \frac{1}{n} \sum_i u_i(x)^{1-\epsilon}$$

▶ Utilitarian SWF: $\epsilon = 0$; Rawlsian SWF: $\epsilon \to \infty$

Social Welfare Functions: Choices Motivate Results

Concavity of utility:

$$u(c) = \frac{1}{1-\rho} c^{1-\rho}, \quad \rho \neq 1$$

- ρ is the coefficient of relative risk aversion.
- From behind the "veil of ignorance" more risk adverse agents with prefer redistribution.
- Also motivates insurance: risk adverse agents will always prefer full insurance to partial insurance.

Next Class

Externalities!

Atkinson, Anthony B.; Stiglitz, J. E. (2015). <u>Lectures on Public Economics</u>. Princeton University Press.