Undergraduate Public Finance: An Introduction

Germain Gauthier

Bocconi University

Why should you study Public Economics?

Public Economics = study of the role of the government in the economy (Gruber, 2005)

Government is instrumental in most aspects of economic life:

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

$\Rightarrow$ We pool a large share of our incomes through government

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The Biden administration is investigating states that block mask mandates.

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di Marco Rogari
5 settembre 2021

OPINION | COMMENTARY

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The government decreed that masks could cost no more than 50 euro cents. Then came the shortages.

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Debate rages over billions spent to prop up flag carriers as crisis reverses privatisation drive

THE COVID ECONOMY

Pandemic unemployment benefits end in September and states aren't extending them

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Bloomberg Opinion

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By Reuters • last updated: 06/02/2019

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Five Star's "citizens' income" has noble aims, but it risks getting bogged down by its own complexity and the country's famously inefficient bureaucracy.

By Ferdinando Giugliano
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By Chiara Albanese, Daniele Lepido, and Tommaso Ebhardt

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By John Follain and Lorenzo Totaro
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Three Questions in Public Economics

1. When should the government intervene in the economy?
2. What are these interventions and their effects?
3. Why do governments choose to intervene in the way that they do?

When should the government intervene in the economy?

1. **Market Failures**: Market economy sometimes fails to deliver an outcome that is efficient

   $\Rightarrow$ Government intervention may improve the situation

2. **Redistribution**: Market economy generates substantial inequality in economic resources across individuals.

   $\Rightarrow$ People willing to pool their resources (through government taxes and transfers) to help reduce inequality

Main Market Failures

1. **Externalities**: e.g., greenhouse carbon emissions

   $\Rightarrow$ corrective taxation or regulation

2. **Imperfect competition**: e.g., monopoly

   $\Rightarrow$ antitrust policies

3. **Imperfect of asymmetric information**: e.g., health insurance markets may exclude part of the population

   $\Rightarrow$ mandatory insurance

4. **Individual failures**: e.g., myopic people may not save enough for retirement

   $\Rightarrow$ institutions in place help people save over their lifecycle

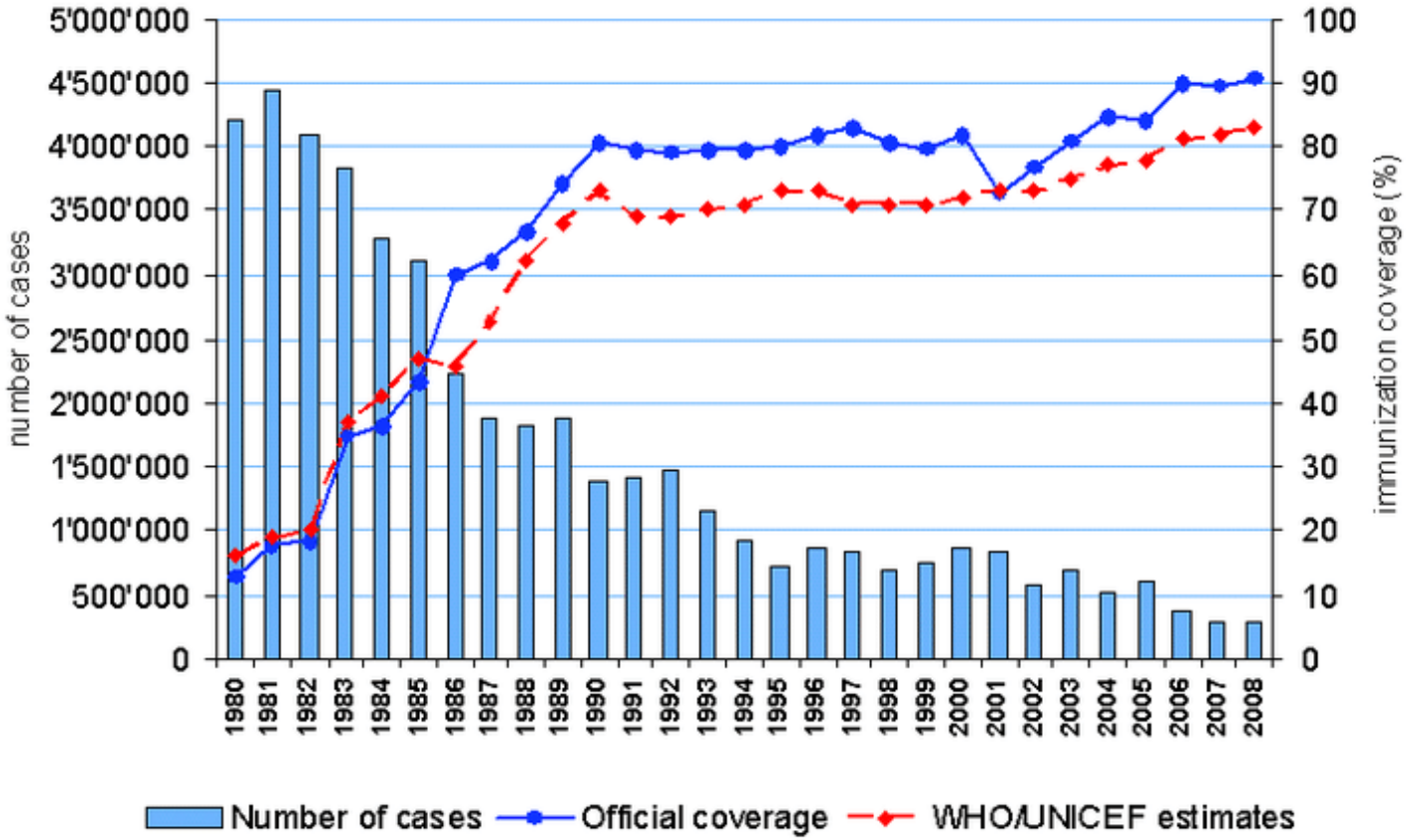
Case Study: Measles Epidemics

- Measles is an extremely dangerous virus for young children.
- The vaccine against measles was introduced in 1963, and cases quickly became relatively rare worldwide.
- Yet measles outbreaks have been reported in several developed countries over the last decade.
- Insufficient vaccine coverage has been identified as the main reason for most outbreaks ("anti-vax" movement).
- In reaction to a measles outbreak, the Italian government made 12 vaccines mandatory for children attending school up to age 16 in 2017.

  $\Rightarrow$ Typical case of a negative externality that arguably justifies government intervention.

Case Study: Measles Epidemics

Global Vaccination Rates and Measles Prevalence

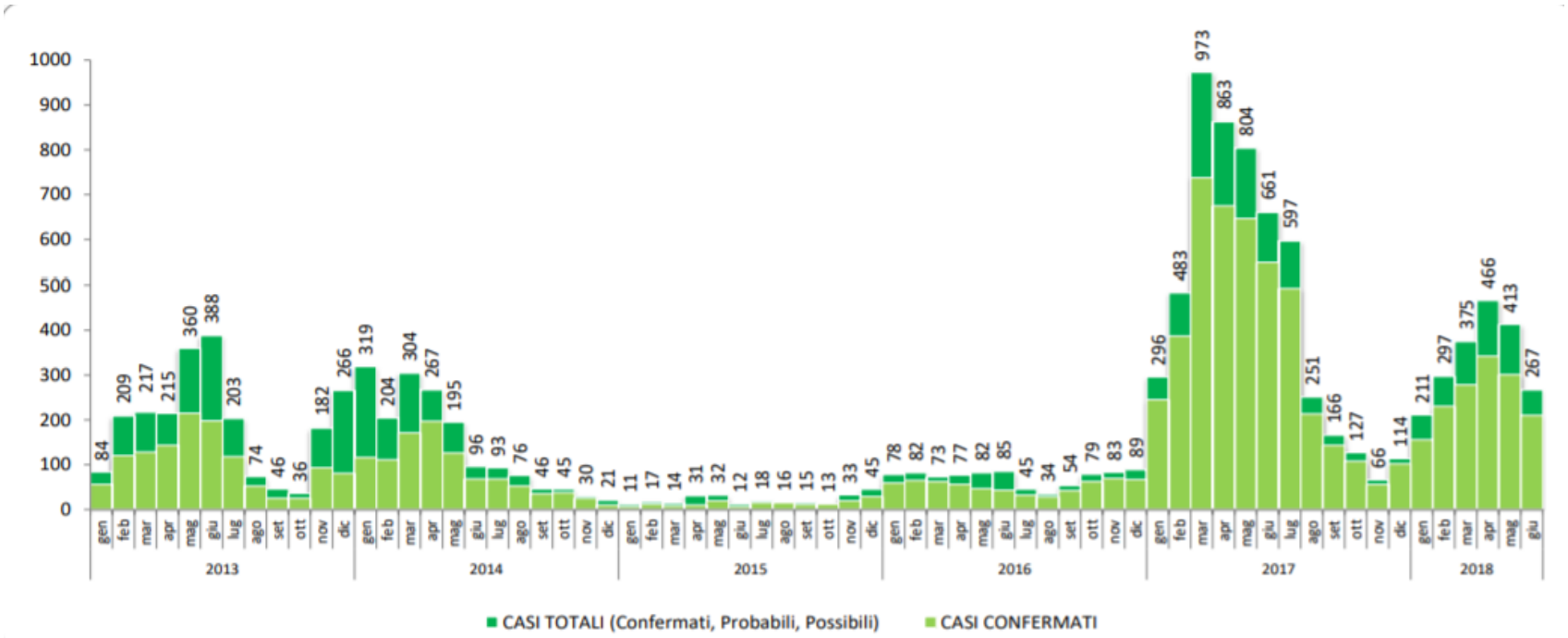


Source: WHO/IVB database, 2009
193 WHO Member States. Data as of September 2009

Date of slide: 21 December 2009

Case Study: Measles Epidemics

The Measles Outbreak in Italy

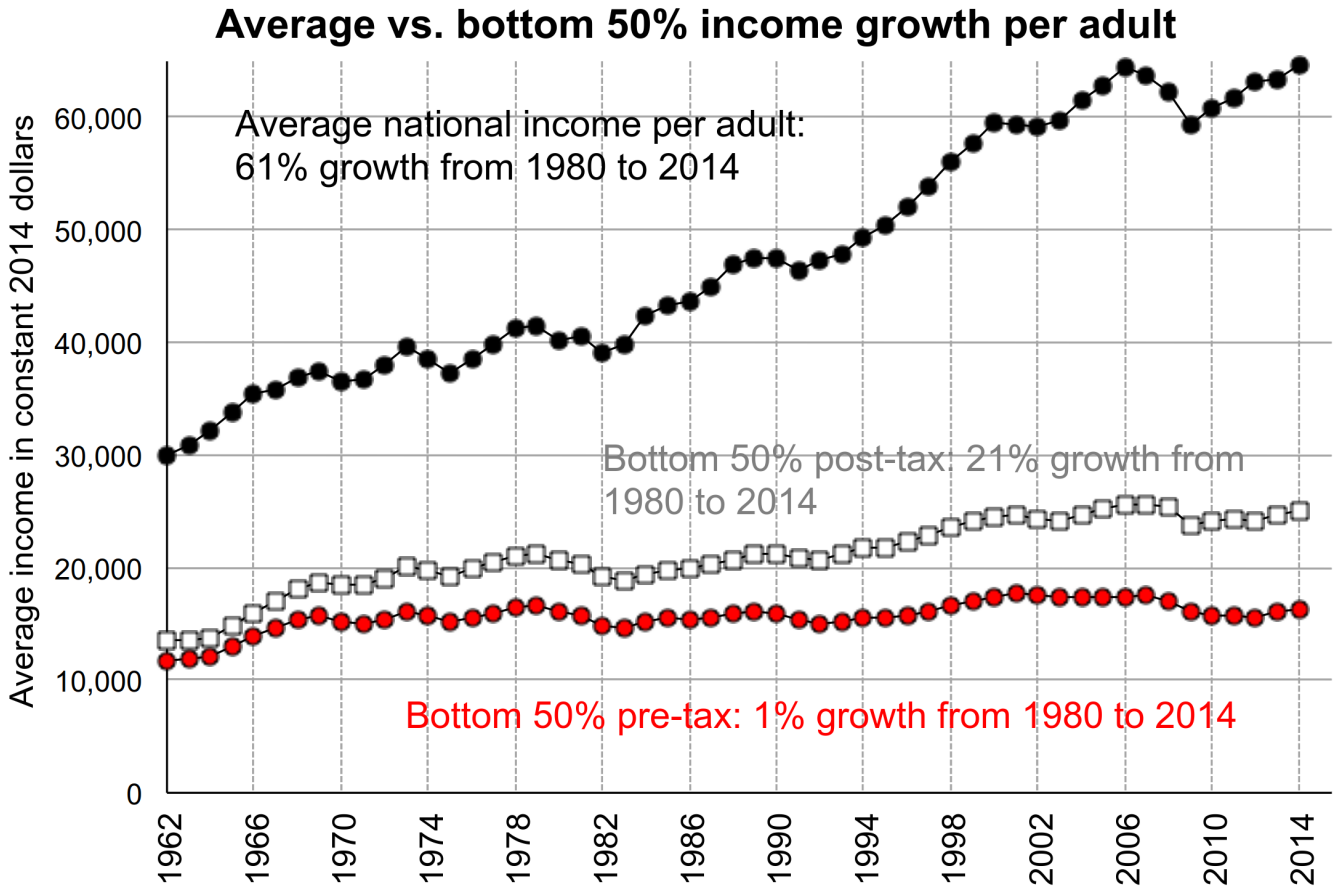


Inequality and Redistribution

- Even if market outcome is efficient, society might not be happy with the market outcome because market equilibrium might generate very high economic disparity across individuals
- Governments use taxes and transfers to redistribute from rich to poor and reduce inequality
- Redistribution through taxes and transfers might reduce incentives to work (**efficiency costs**)

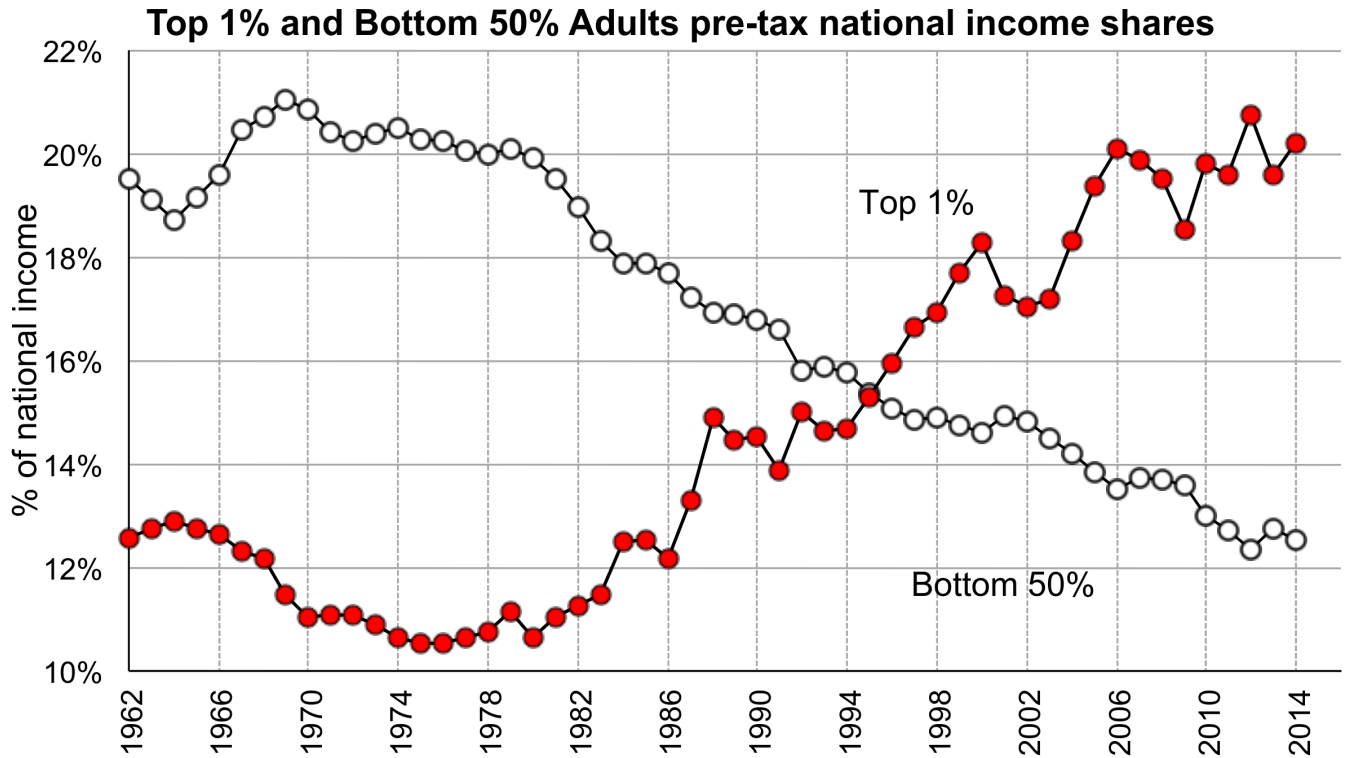
  $\Rightarrow$ Redistribution creates an **equity-efficiency trade-off**
- Income inequality has soared in the United States in recent decades and has moved to the forefront in the public debate (Piketty, 2014)

Case Study: The Rise in Inequality



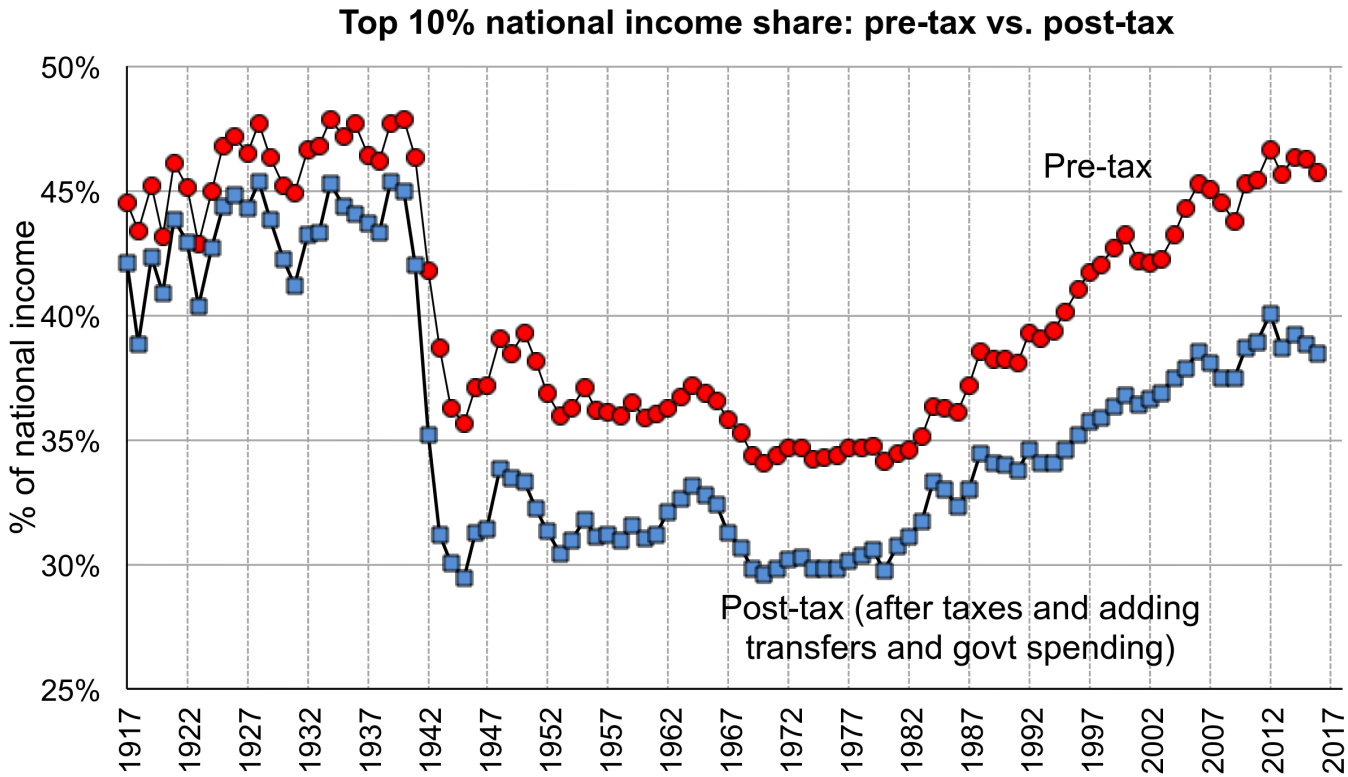
Source: Piketty et al. (2018)

Case Study: The Rise in Inequality



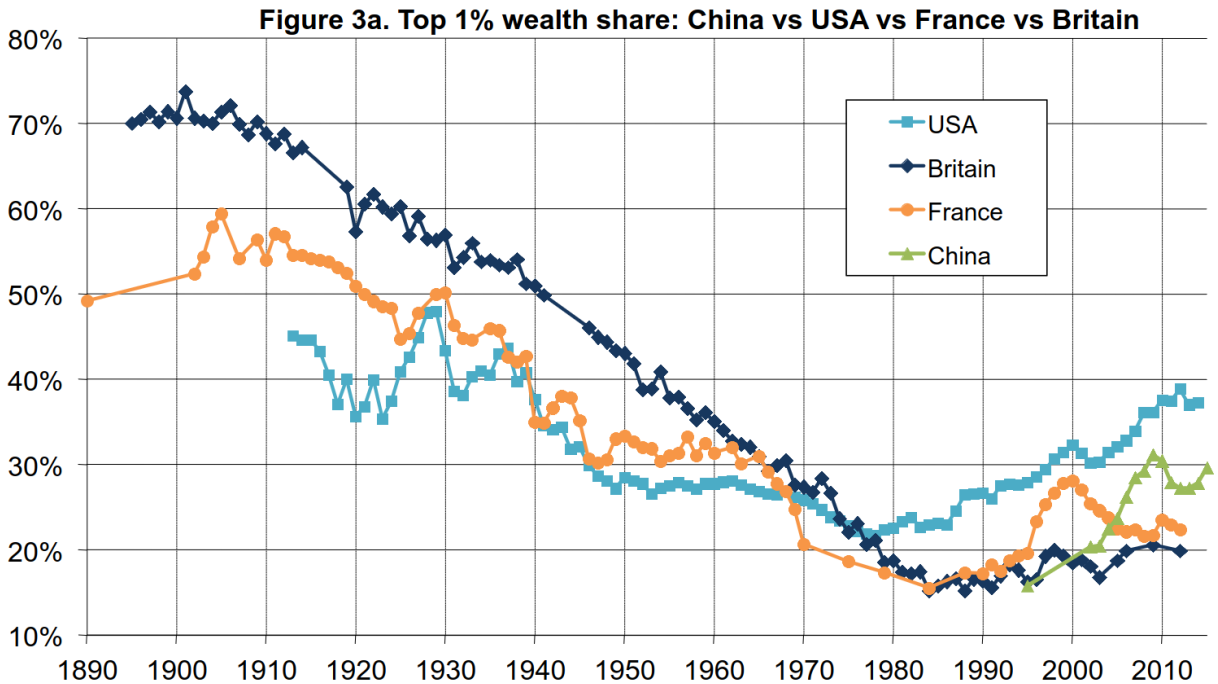
Source: Piketty et al. (2018)

Case Study: The Rise in Inequality



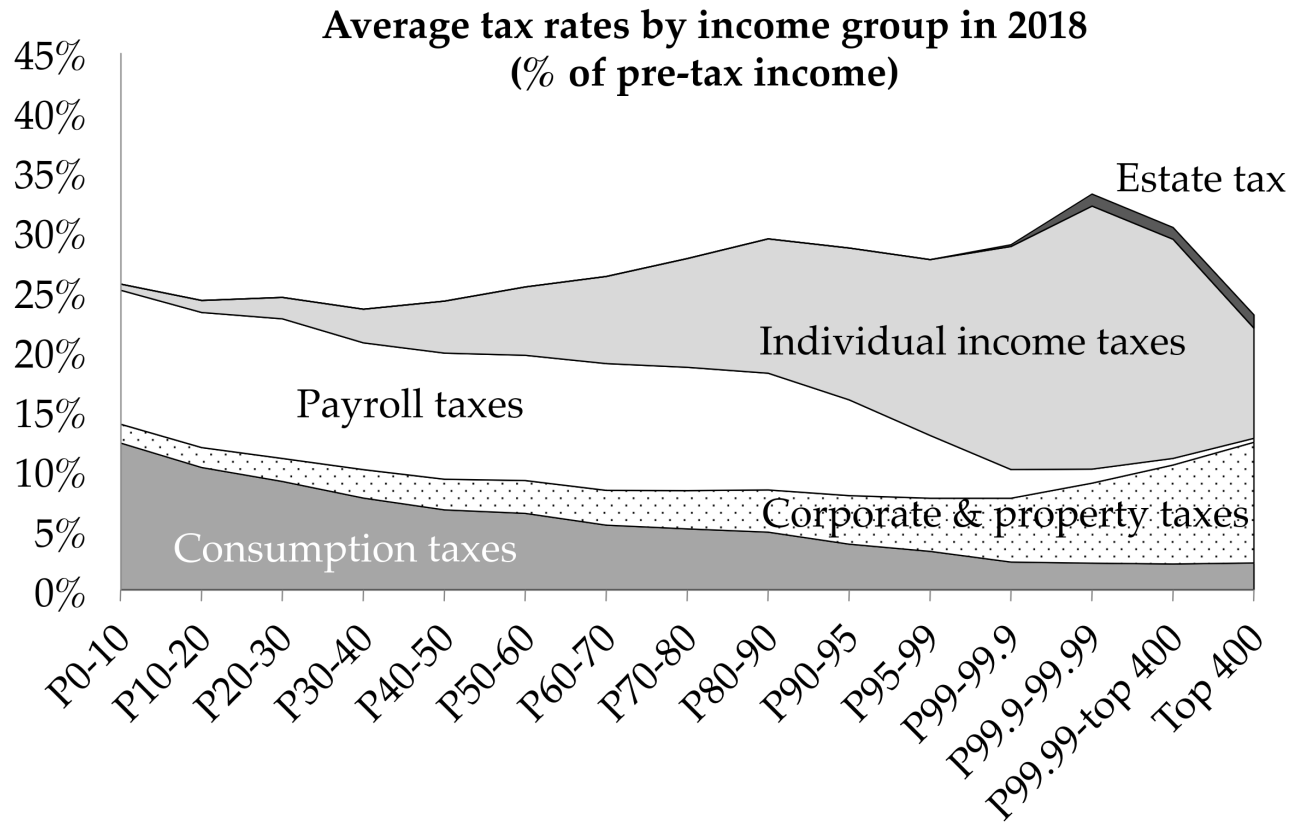
Source: Piketty et al. (2018)

Case Study: The Rise in Inequality



Source: World Inequality Database

Case Study: The Rise in Inequality



Source: Saez and Zucman (2019)

What are the effects of interventions?

1. **Direct Effects:** The effects of government interventions that would be predicted if individuals did not change their behavior in response to the interventions

   $\Rightarrow$ Direct effects are relatively easy to compute

2. **Indirect Effects:** The effects of government interventions that arise only because individuals change their behavior in response to the interventions (sometimes called **unintended effects**)

   $\Rightarrow$ Empirical public economics analysis tries to estimate indirect effects to inform the policy debate

Case Study: Taxing Superstar Inventors

Taxation and the International Mobility of Inventors
Ufuk Akcigit, Salomé Baslandze, and Stefanie Stantcheva
NBER Working Paper No. 21024
March 2015, Revised October 2015
JEL No. F22,H21,H24,H31,J61,O33,O38

ABSTRACT

This paper studies the effect of top tax rates on inventors' international mobility since 1977. We put special emphasis on "superstar" inventors, those with the most abundant and most valuable patents. We use panel data on inventors from the United States and European Patent Offices to track inventors' locations over time and combine it with international effective top tax rate data. We construct a detailed set of proxies for inventors' counterfactual incomes in each possible destination country including, among others, measures of patent quality and technological fit with each potential destination. Exploiting the differential impact of changes in the top tax rate on inventors of different qualities, we find that superstar top 1% inventors are significantly affected by top tax rates when deciding where to locate. The elasticity to the net-of-tax rate of the number of domestic superstar inventors is relatively small, around 0.03, while the elasticity of the number of foreign superstar inventors is around 1. Inventors who work in multinational companies are more likely to take advantage of tax differentials. On the other hand, if the company of an inventor has a higher share of its research activity in a given country, the inventor is less sensitive to the tax rate in that country.

Source: Akcigit et al. (2016)

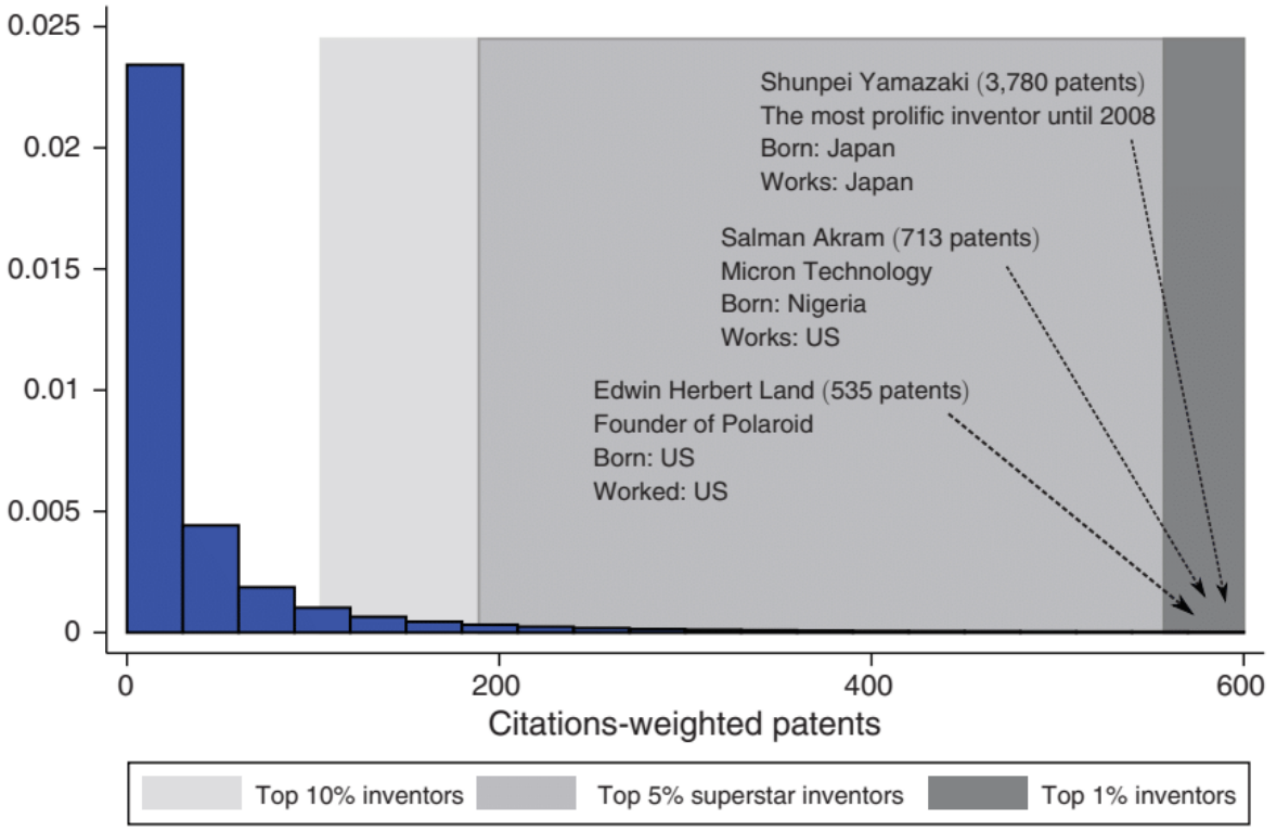


FIGURE 1. DISTRIBUTION OF CITATIONS-WEIGHTED PATENTS

Notes: This figure plots the distribution of citations-weighted patents (see formula (1)) across inventors in the US Patent Office data 1977–2000 from eight countries: Canada, Great Britain, Germany, France, Italy, Japan, Switzerland, and the United States. For the sake of visual clarity, the x-axis is truncated at 600 citations. For a detailed description of the data, see Section IC.

Reform #1: The US Tax Reform Act of 1986 reduced top marginal tax rates from 50 percent to 28 percent.

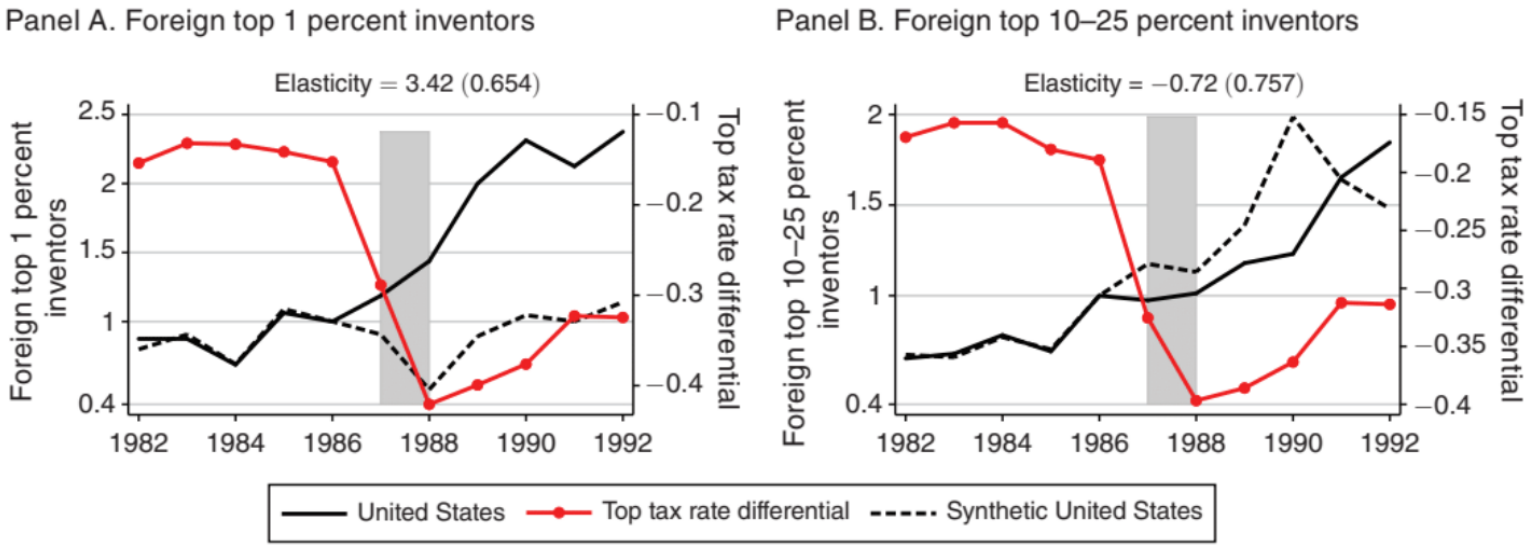


FIGURE 8. THE 1986 TAX REFORM ACT AND FOREIGN INVENTORS IN THE UNITED STATES

Reform #2: The Danish tax reform created a preferential tax scheme for foreign researchers and high-income foreigners. Instead of the usual top tax rate (of 60 percent), foreigners were taxed for three fiscal years at a flat rate of 30 percent for their 1991–1995 income and then at another reduced rate of 25 percent after 1995.

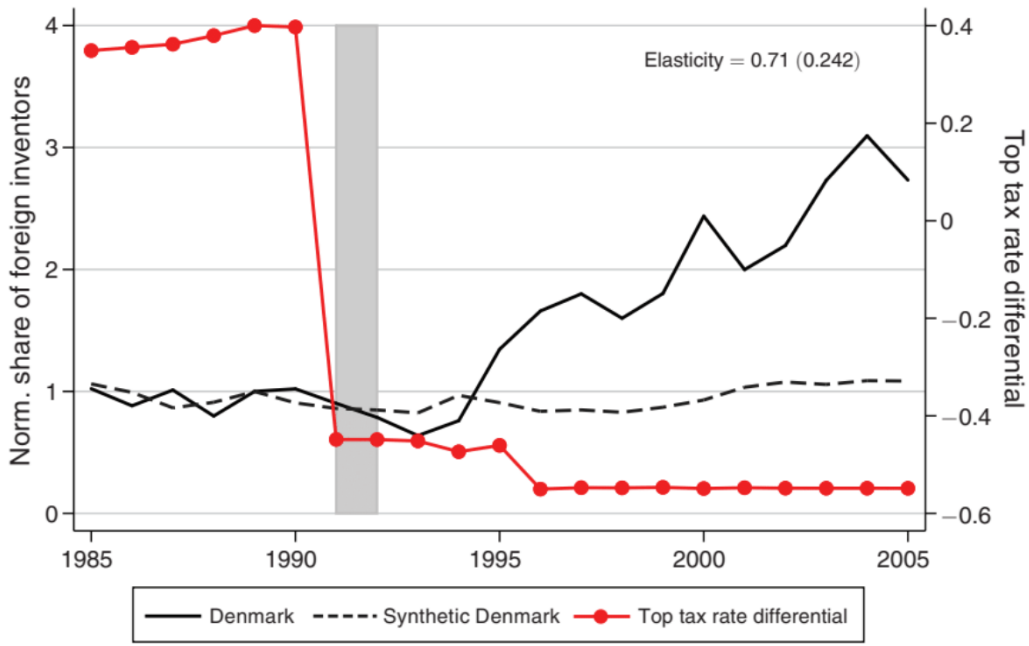


FIGURE 9. DENMARK'S 1992 TAX REFORM AND FOREIGN INVENTORS

Real Life Policy-making: The US Government Scorekeepers

- The methods and results derived from empirical economics are central to the development of public policy at all levels of government.
- The Congressional Budget Office (CBO) "scores" policy proposals by estimating their budget implications.
- CBO scoring uses the theoretical and empirical tools of public finance.
- CBO scores can determine the fate of legislation.
- `https://www.cbo.gov/`

Why do governments do what they do?

- **Political economy** = the theory of how the political process produces decisions that affect individuals and the economy

  e.g., understanding how the level of taxes and spending is set through voting and voters' preferences in a democracy

- **Public choice** is a sub-field of political economy from a Libertarian perspective that focuses on **government failures**

- Government failures = situations where the government does not act for the benefit of society

  e.g., a government captured by a dictator or special interests

Normative vs. Positive Public Economics

- **Normative Public Economics** = analysis of how things should be

  e.g., Should the government intervene in the health insurance market? How high should taxes be?

- **Positive Public Economics** = analysis of how things really are

  e.g., Does government-provided health care crowd out private health care insurance? Do higher taxes reduce labor supply?

- Positive Public Economics is a required first step before we can complete Normative Public Economics

- Positive analysis is primarily empirical and normative analysis is primarily theoretical

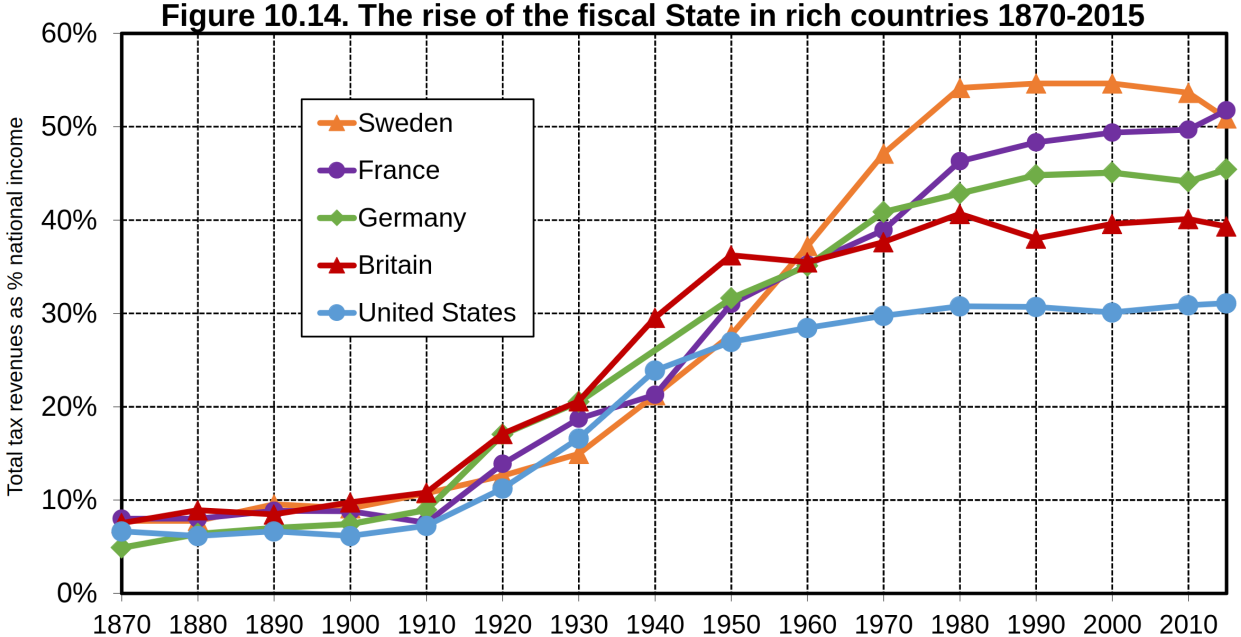
Spending, Taxes, Deficits, and Debts

- If revenues exceed spending, there is a budget surplus.
- If revenues fall short of spending, there is a budget deficit.
- Each dollar of government deficit adds to the stock of government debt.
- Thus, the debt measures the accumulation of past deficits over time.
- This government debt must be financed by borrowing from either citizens of one's own local or national area or from citizens of other areas or nations.

Key Trends

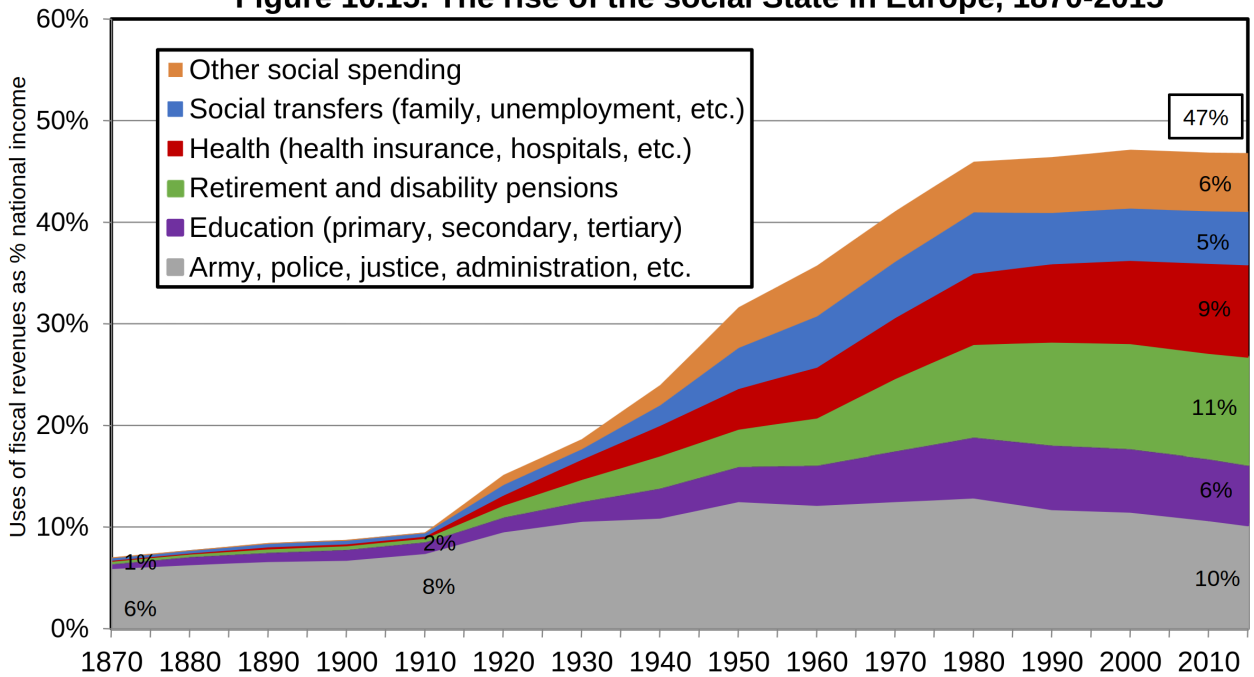
- **Government growth:** Size of government relative to National Income grows dramatically over the process of development from less than 10% in less developed economies to 30-50% in most advanced economies
- **Government size** stabilizes in richest countries after 1980
- **Government growth** is due to the expansion of the **welfare state:** (a) public education, (b) public retirement benefits, (c) public health insurance, (d) income support programs
- **Government spending > taxes:** Most rich countries run deficits and have significant public debt (relative to GDP), particularly during the Great Recession of 2008-10 and Covid 2020-21

Figure 10.14. The rise of the fiscal State in rich countries 1870-2015

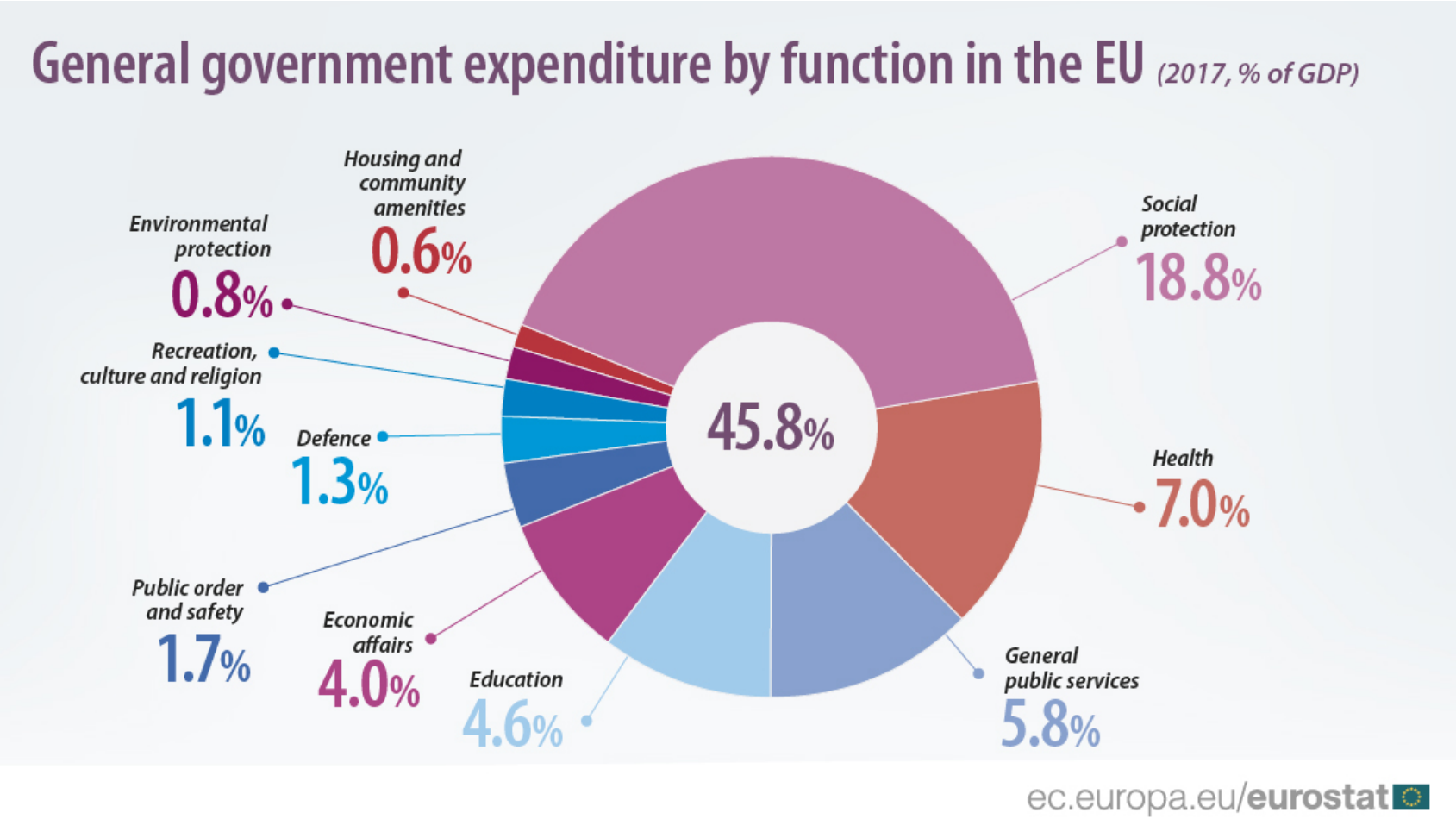


Interpretation. Total fiscal revenues (all taxes and social contributions included) made less than 10% of national income in rich countries during the 19th century and until World War 1, before rising strongly from the 1910s-1920s until the 1970s-1980s and then stabilizing at different levels across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

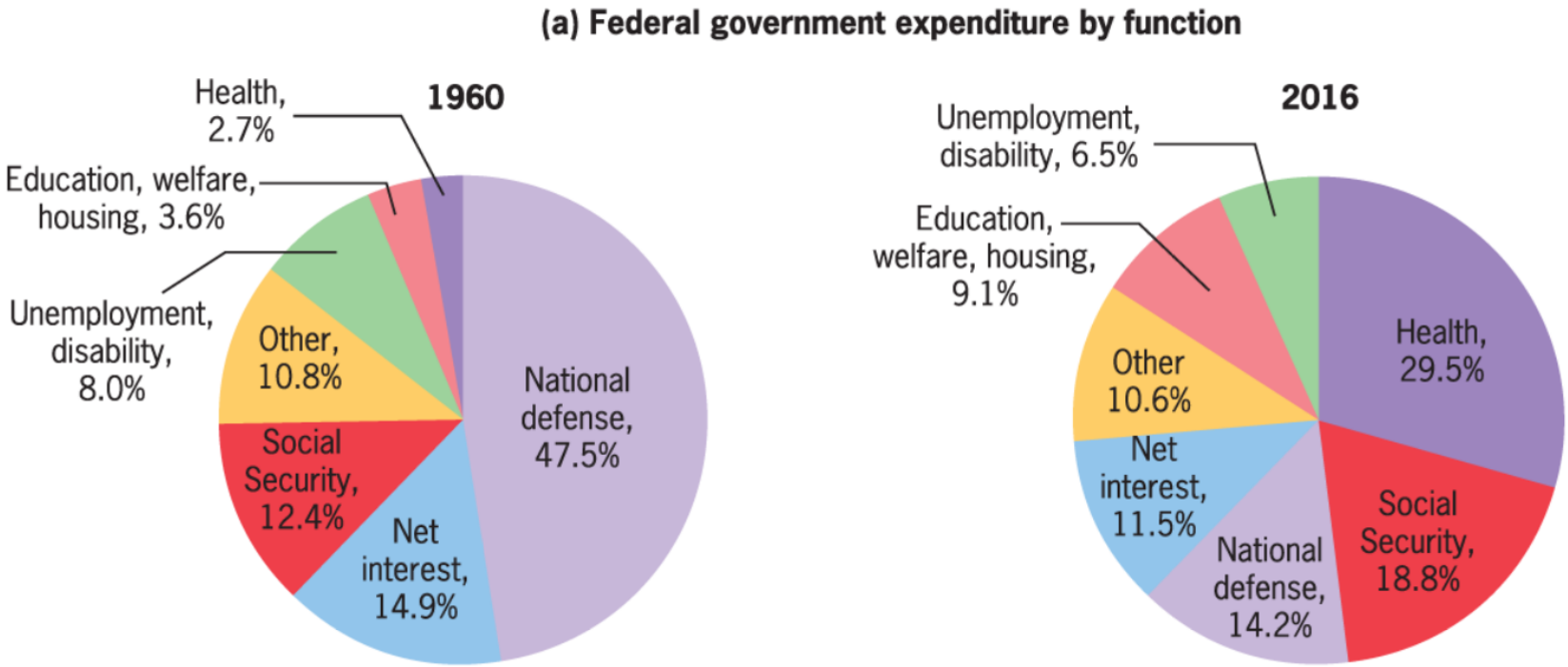
Figure 10.15. The rise of the social State in Europe, 1870-2015



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.

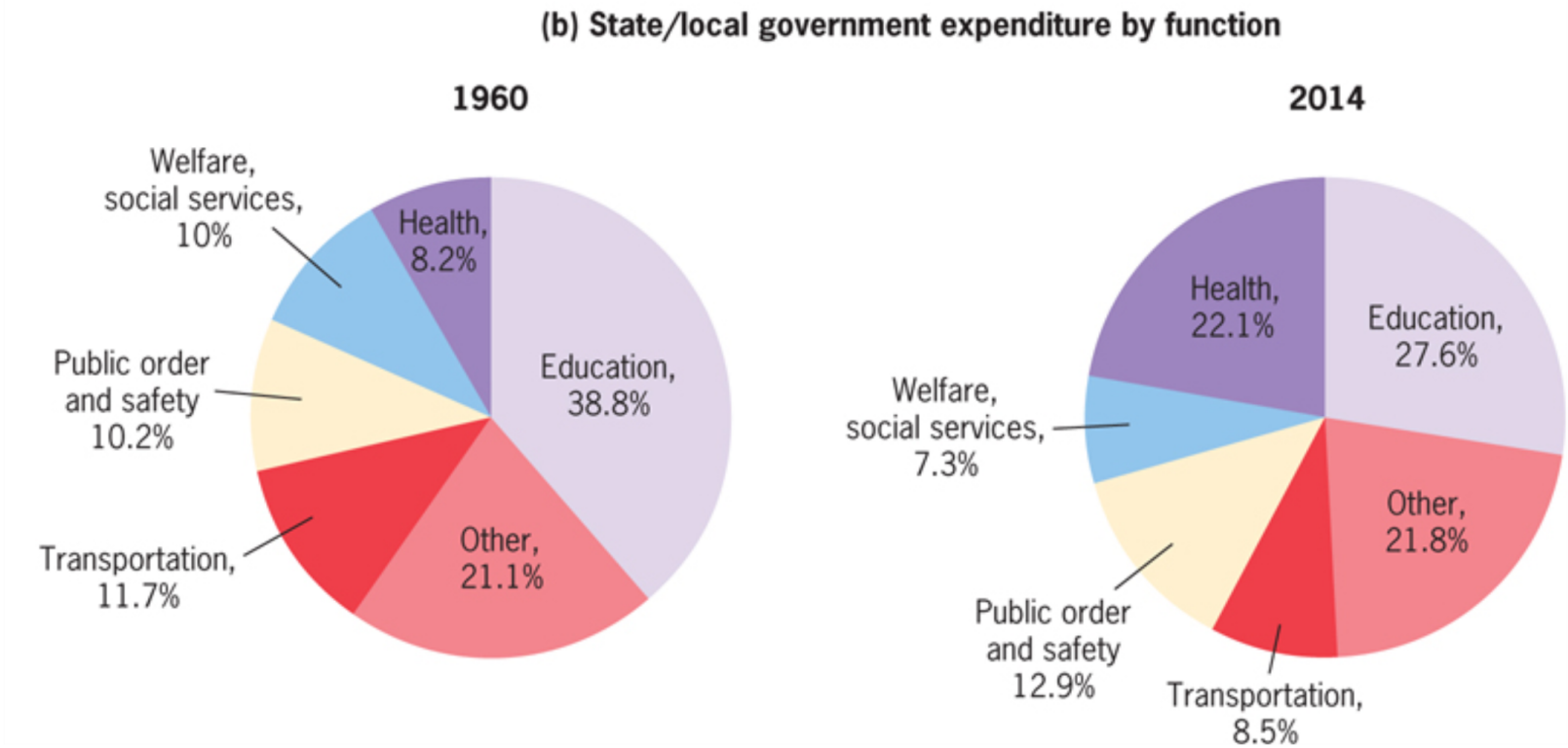

General government expenditure by function in the EU (2017, % of GDP)
Housing and community amenities
0.6%
Environmental protection
0.8%
Recreation, culture and religion
1.1%
Defence
1.3%
Public order and safety
1.7%
Economic affairs
4.0%
Education
4.6%
45.8%
General public services
5.8%
Health
7.0%
Social protection
18.8%
ec.europa.eu/eurostat

General government expenditure by function in the US



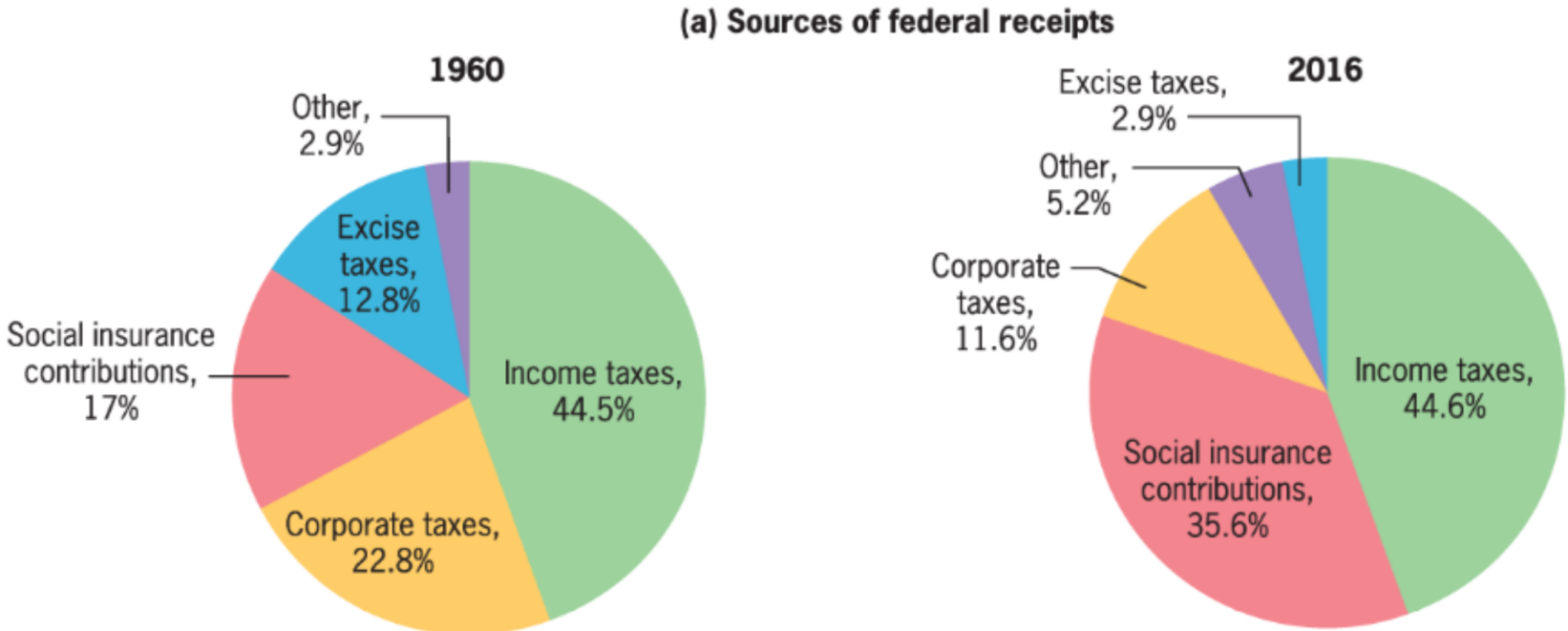
In 1960, nearly half of federal government spending was on national defense. Today, however, defense spending has fallen to less than one-fifth of the federal budget. The Social Security program is the single largest government program in the United States today.

State/local government expenditure by function in the US



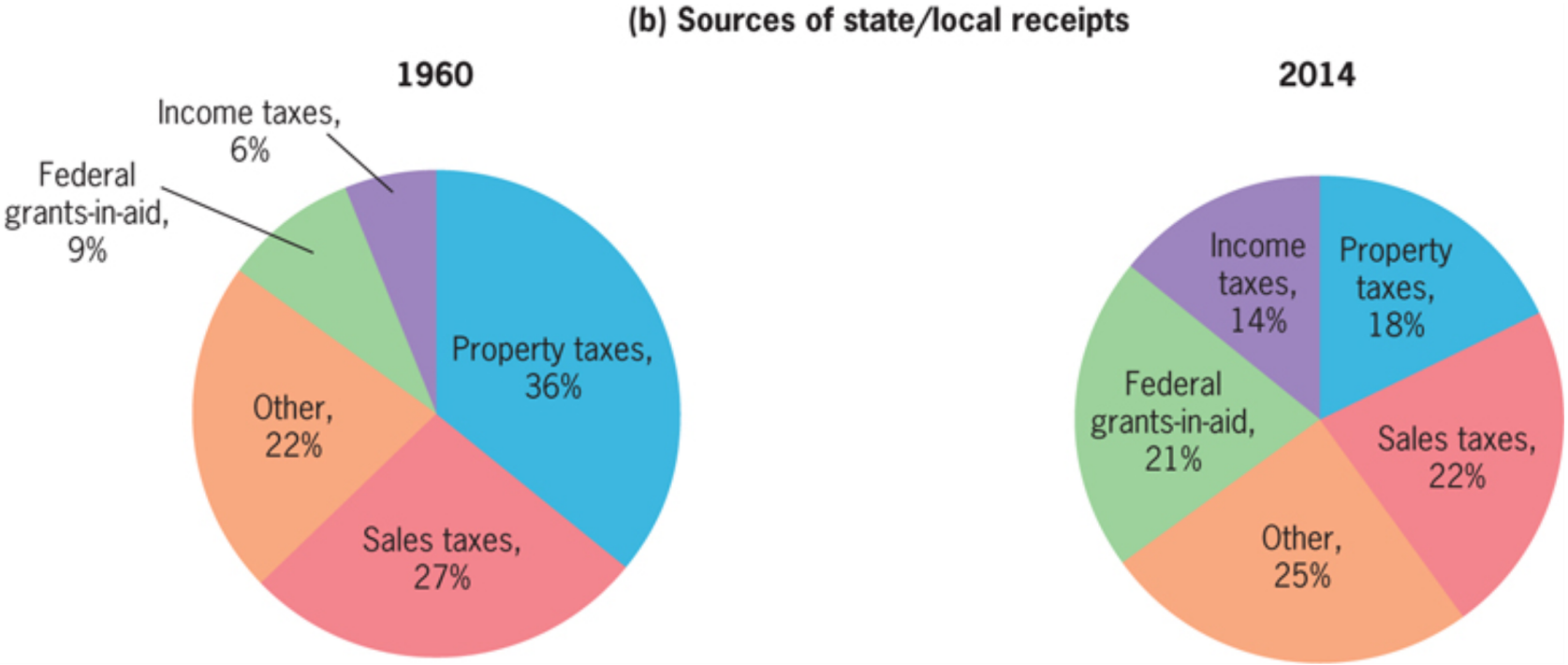
Education, welfare, and public safety for almost 40% of state and local government spending. The major development has been the parallel growth in healthcare spending and the reduction in education spending.

Sources of the general government revenues in the US



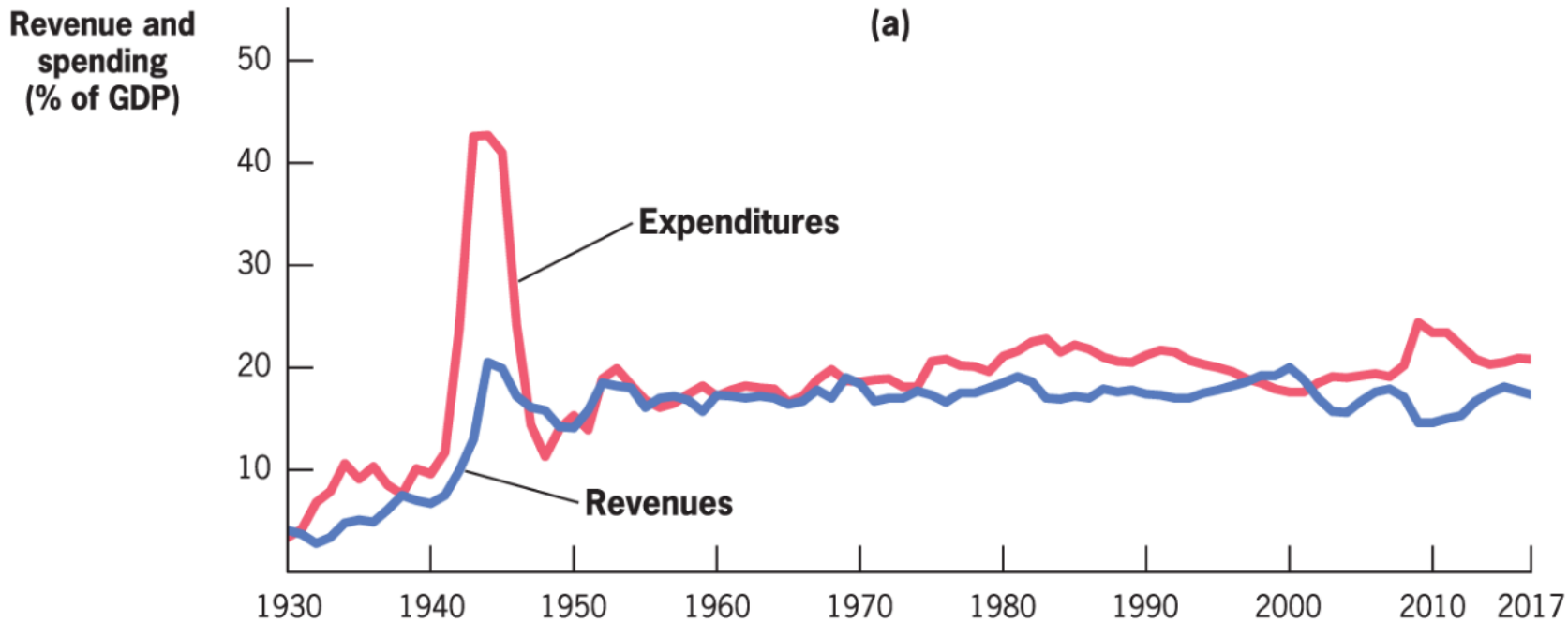
Corporate tax revenues once provided almost 25% of federal government revenue, they now provide only 11.6%. Payroll taxes have grown from a sixth of federal revenues to well over a third.

Sources of the state government revenues in the US

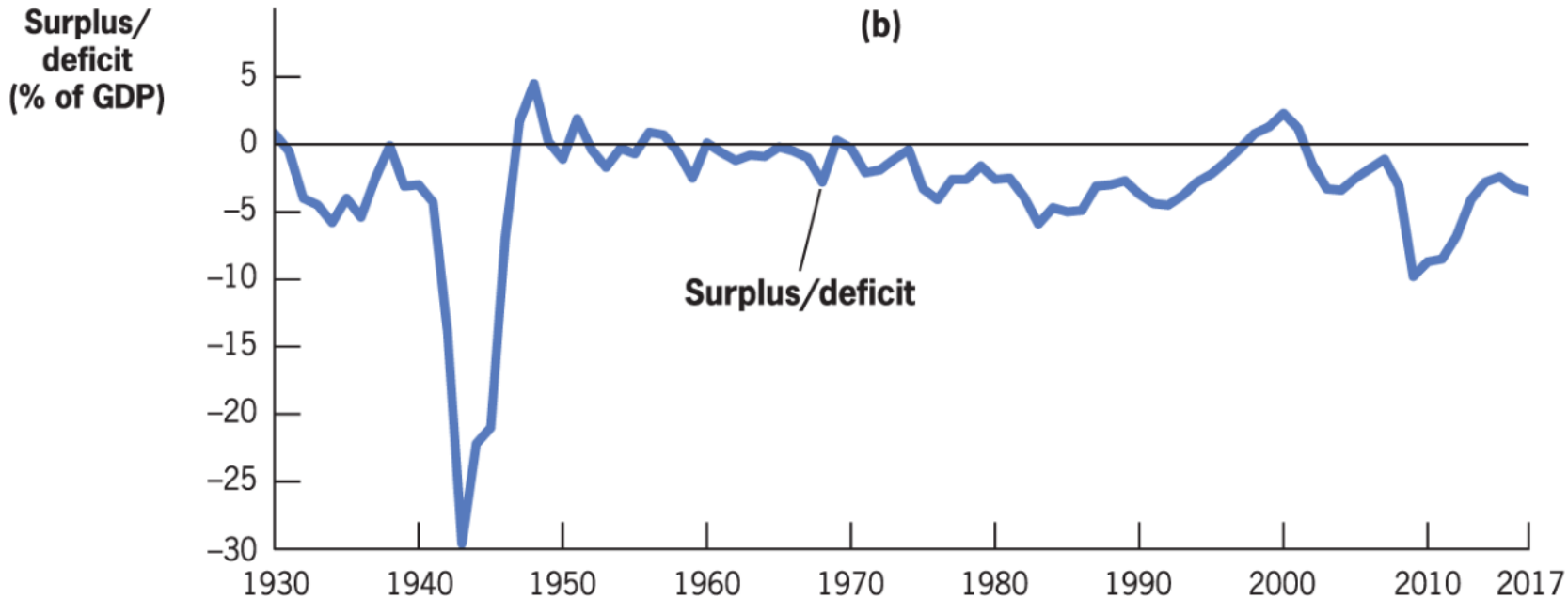


Over the past 40 years, the substantial drop in revenue from property taxes has been made up by rising federal grants and income taxes.

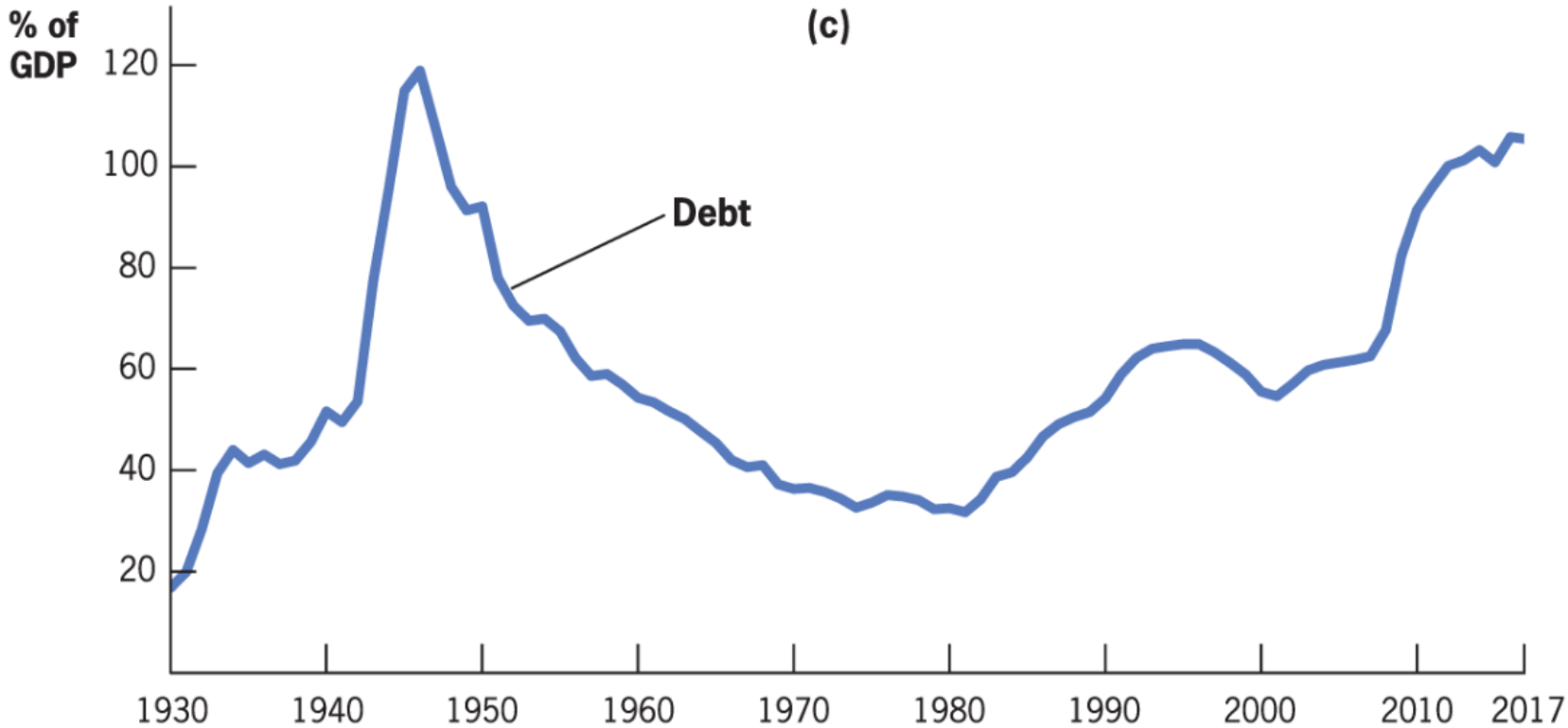
General government revenue and spending in the US

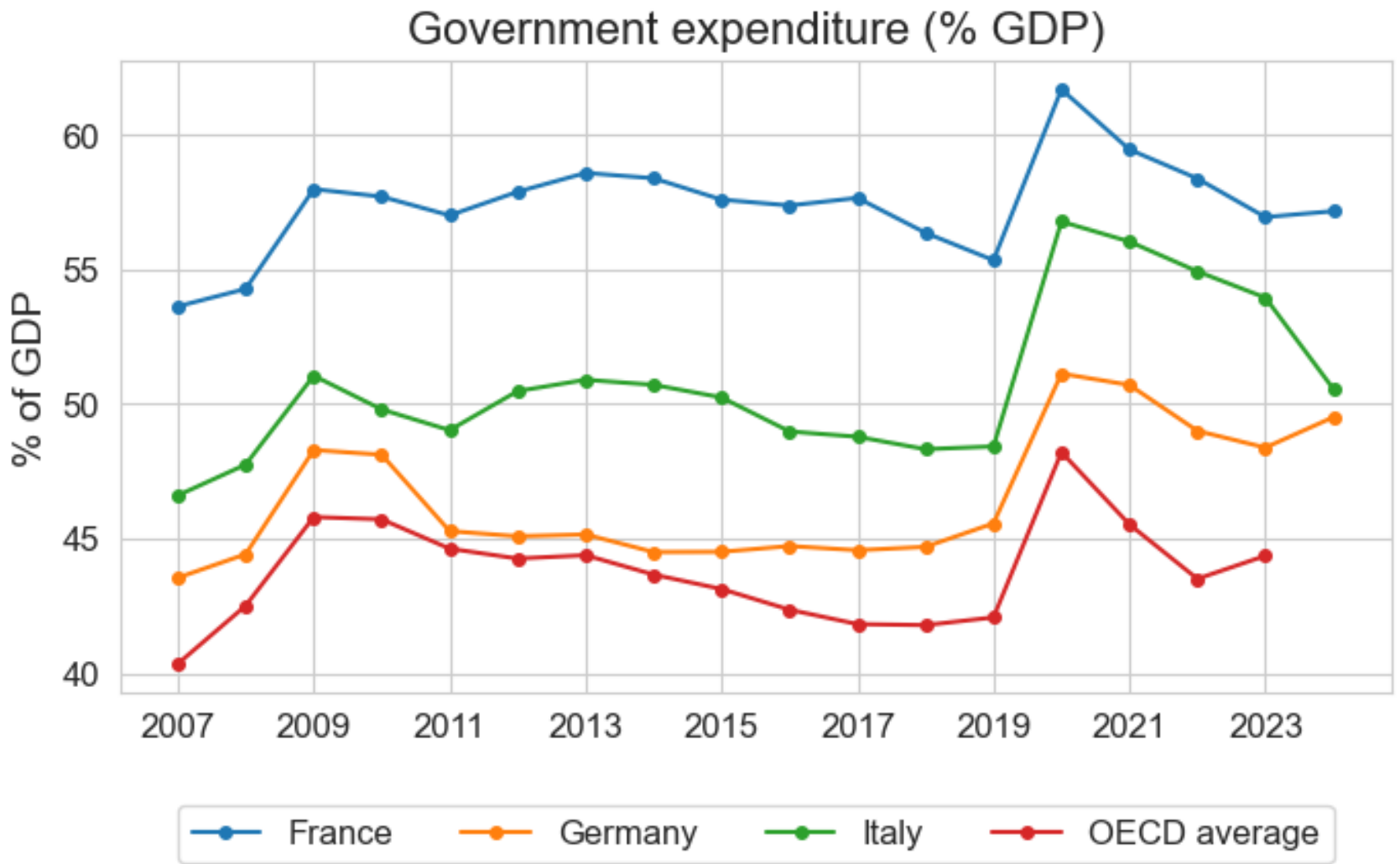


General government US deficit

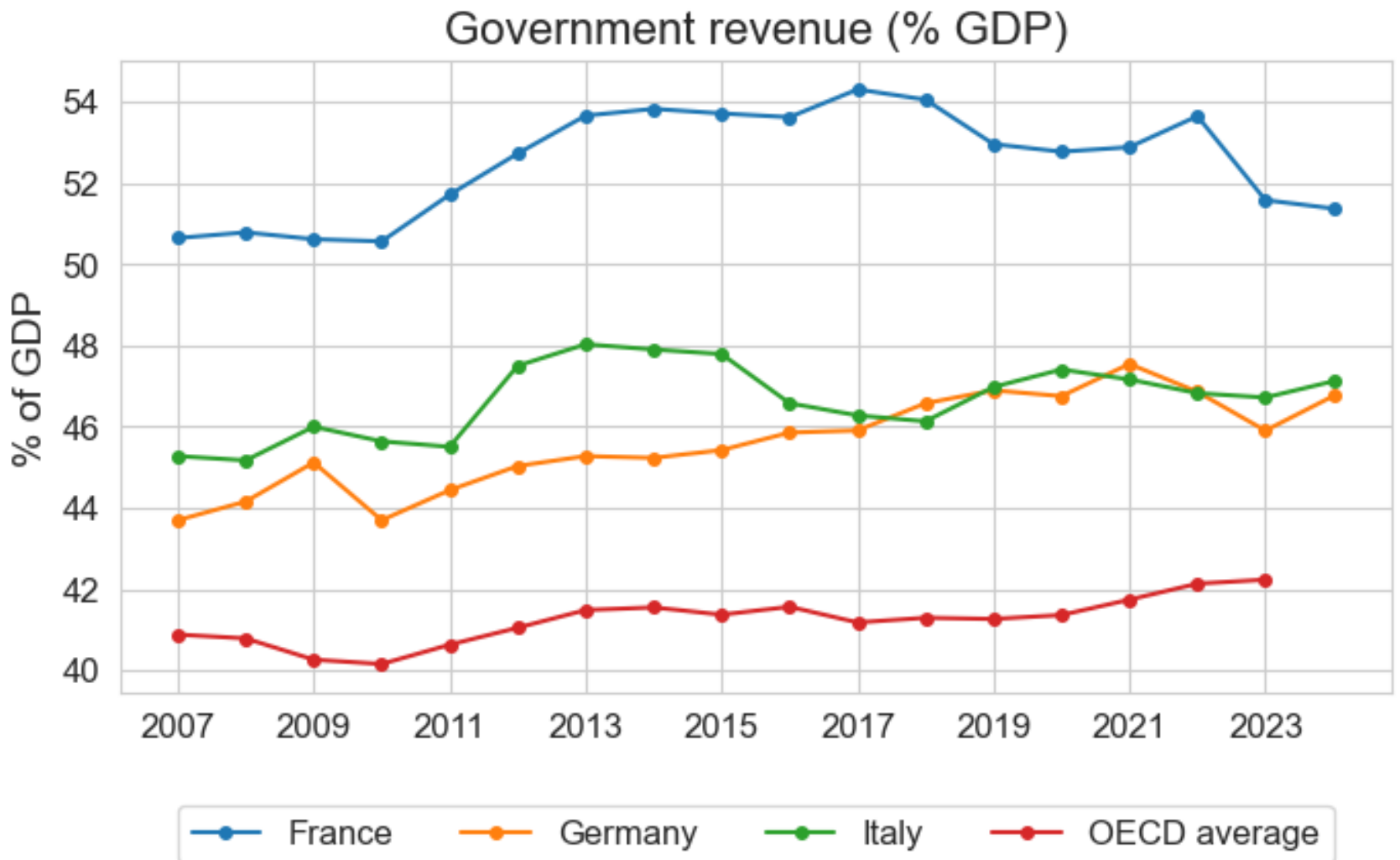


Total Government Debt in the US (% of GDP)





Source: OECD statistics



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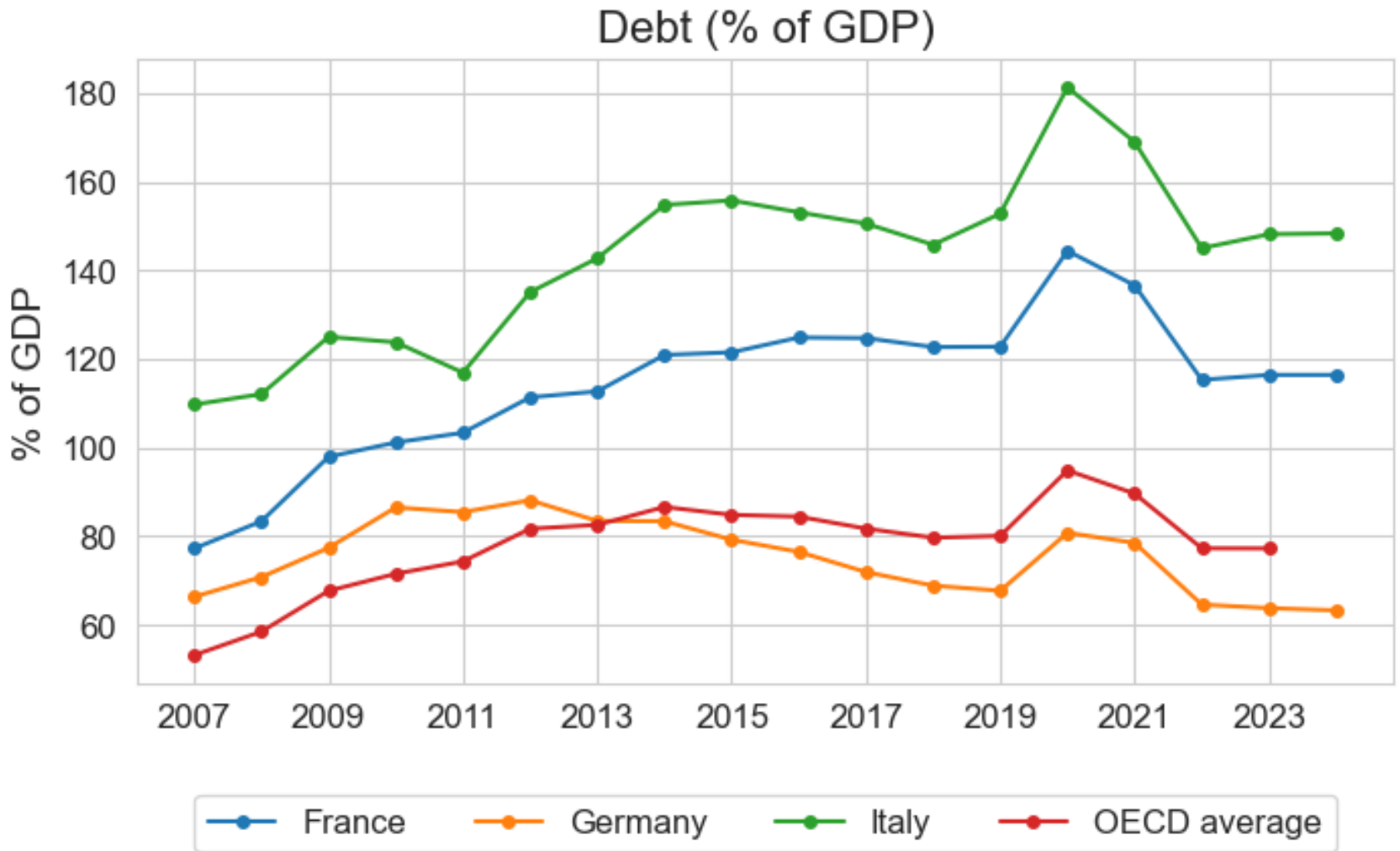

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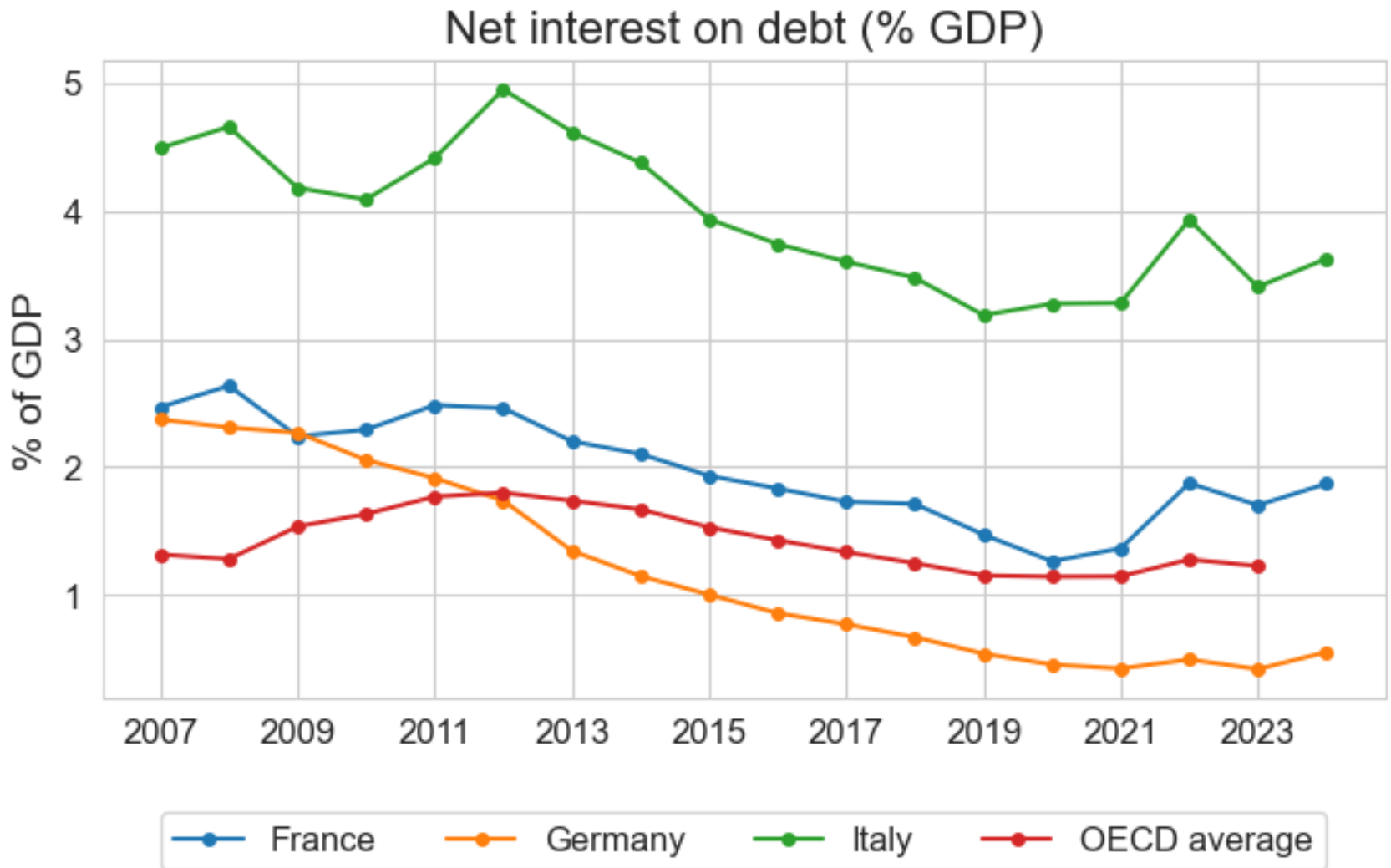

Source: OECD statistics

Regulatory Role of Government

- Another critical role the government plays in all nations is that of **regulating economic and social activities**
- Some examples of regulatory organizations in Europe
  - European Food Safety Authority **(EFSA)**
  - European Medicines Agency **(EMA)**
  - European Environment Agency **(EEA)**
- Some examples in the United States:
  - Food and Drug Administration **(FDA)**
  - Occupational Safety and Health Administration **(OSHA)**
  - Environmental Protection Agency **(EPA)**
- Recently, there has been a lot of discussions about how to properly regulate big data companies (e.g., social media).

Conclusion

- It is clear from the facts presented here that the government plays a central role in the lives of citizens.
- It is also clear that there is ongoing disagreement about whether that role should expand, stay the same, or contract.
- The facts and arguments raised in this chapter provide a backdrop for thinking about the set of public finance issues that we explore in the remainder of the lectures.

Akcigit, U., Baslandze, S., and Stantcheva, S. (2016). Taxation and the international mobility of inventors. *American Economic Review*, 106(10):2930–2981.

Gruber, J. (2005). *Public finance and public policy*. Macmillan.

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Piketty, T., Saez, E., and Zucman, G. (2018). Distributional national accounts: methods and estimates for the united states. *The Quarterly Journal of Economics*, 133(2):553–609.

Saez, E. and Zucman, G. (2019). *The triumph of injustice: How the rich dodge taxes and how to make them pay*. WW Norton & Company.