

Public Finance

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Università Cattolica del Sacro Cuore

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Instructors

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Aim of the course

- ▶ Introducing the main concepts of public economics and public finance by means of microeconomic analysis and by illustrating relevant empirical data.
- ▶ The standard economic rationales for government intervention in market economies will be presented along with its possible Pareto improving effect on welfare.
- ▶ The trade-off between the potential welfare-enhancing government intervention and the distortionary effects of its policy instruments will be discussed.

Useful information

Teaching materials

- ▶ *Textbook*: H. ROSEN-T. GAYER, Public Finance, McGraw Hill Education. You are welcome to buy any edition of the textbook.
- ▶ *Slides*: They are uploaded on BB before each class.

The slides are not self explanatory and attending lectures is highly recommended. The textbook is intended to provide a wider understanding of the course program and is essential for the non-attending students.

Assessment method and criteria

- ▶ The exam will be written (60 minutes) and will include 2 open questions and one exercise – for a total of maximum 30 points.
 - ▶ 10 points each per question + 10 points on the exercise
- ▶ Answer to open questions might entail the illustration of a relevant economic model, its application to different scenarios and the illustration of its economic interpretation.
- ▶ Exercises will test the proficiency of the student in using the model to analyze positive and normative questions.
- ▶ The student is expected to prove a good working knowledge of all the material covered by the course.

Presentations by students

- ▶ At the end of the course (Monday June 22 during class), we will have a session in which students (4 students per group) will present to the rest of the class one research paper from the bibliography of the course
- ▶ Depending on the quality of the group's presentation and the individual contribution of each student to the group's success, a maximum of 3 bonus points for the exam will be assigned
- ▶ Students who wish to take part to the presentation session should register at this link (deadline: May 9): <https://forms.gle/qwPVpBmdoXM4Tabs9>

Midterm exam

- ▶ Students may take a midterm exam. The midterm exam will be on the 1st part material and its grade will be from 0 to 30. If the midterm grade is ≥ 18 , the student has the possibility to accept it. In this case the midterm grade will account for 50% of the final grade while the other 50% will be assessed on the 2nd part part of the course material only.
- ▶ The midterm exam will have the same structure as the regular exam (two open questions + one exercise)
- ▶ The midterm exam will take place on Wednesday May 20st at 11.30 (room SF.017)
- ▶ Students who wish to attend the mid-term should register at this link (deadline: May 13): <https://forms.gle/st5xTNeryFtsh7ux6>

Midterm exam

- ▶ The midterm grade will be valid only for the regular summer 2026 exams (July 2 and July 17). A student who rejects the midterm grade (at any point in time), getting a midterm grade <18 or not taking the midterm exam, will be graded on an exam covering the whole course program.
- ▶ A student who rejects the final grade (the average between midterm and final exam) will be graded on a re-exam covering the whole course program

Exercise sessions

- ▶ Two lectures will be devoted to discussing the solutions to exercises relevant for the exam
- ▶ We will cover 4 types of exercises in the first part of the course and 4 types of exercises in the second part of the course
- ▶ Exercise sessions will take place on May 13 at 11.30 and on June 24 at 11.30 during the standard lecture hours

Course Topics (i)

1. REASONS FOR PUBLIC INTERVENTION AND MAIN AREAS OF PUBLIC INTERVENTION

- ▶ Introduction to public economics
- ▶ Review of analytical tools
- ▶ Externalities
- ▶ Public Goods
- ▶ Natural Monopolies
- ▶ Information Asymmetries

2. FUNDAMENTAL ELEMENTS OF TAX THEORY

- ▶ Definitions and types of tax collection
- ▶ Economic effects of taxation: efficiency
- ▶ Economic effects of taxation: distribution
- ▶ Measures of income inequality
- ▶ Personal income tax

Course Topics (ii)

3. FISCAL FEDERALISM

- ▶ Theoretical models of fiscal federalism
- ▶ Data on fiscal federalism

4. THEORY OF COLLECTIVE CHOICES

- ▶ Theory of social choice
- ▶ Political Economy
- ▶ Optimal taxes vs. politically feasible taxes
- ▶ Social preferences

5. PUBLIC DEBT, PENSIONS, PUBLIC HEALTH

- ▶ Public debt
- ▶ Pension systems
- ▶ Public health

6. THE ITALIAN TAX SYSTEM

- ▶ National taxes
- ▶ Local taxes

Introduction to public finance

Public Economics definition

- ▶ Public Economics (\approx Public Finance) is the study of the role of the government in the economy
- ▶ Government is instrumental in most aspects of economic activity (*Musgrave, 1959*):
 - ▶ **Regulation and Allocation:** It provides a complex regulatory framework disciplining how resources should be employed in the economic activities
 - ▶ **Redistribution:** It redistributes income and wealth within the population through taxes (35-50% of National Income) and public expenditures in public goods (e.g., infrastructures, public order and safety, defense) and welfare state (e.g., education, pensions, health care, income support)
 - ▶ **Stabilization:** It helps to stabilize macro-economic fluctuations through monetary, fiscal and bailout policies
- ▶ This explain why we pool a large share of our income through government

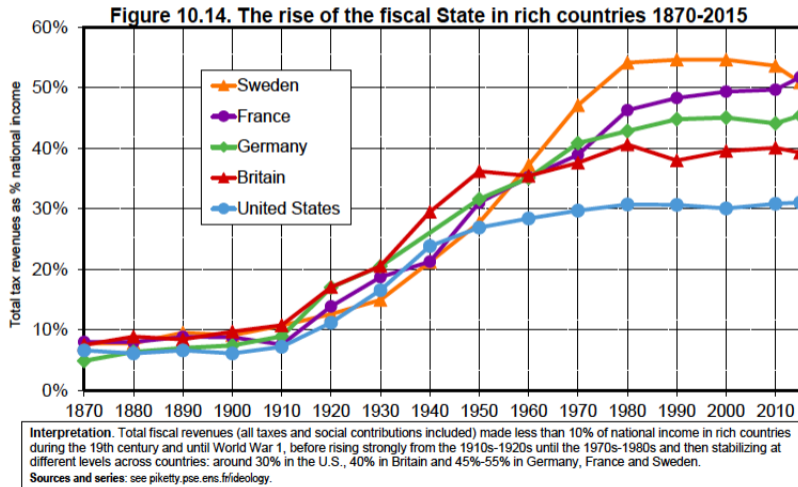
Bigger picture view on government

- ▶ Traditionally, economists used to have a narrow minded view of individual behavior: purely selfish and economically rational agents interacting through markets ⇒ Limitation to fully understand **public economics**
- ▶ Social interactions are critical for humans: we naturally cooperate at many levels: families, communities, nation states, global treaties with very strong/versatile in-group attachments
 - ▶ Through social cooperation it is possible to provide several goods and services that would be infeasible for the individual alone
 - ▶ We can see the modern nation state as a scaled-up version of previous institutions
 - ⇒ Explains why our modern nation states provide defense and education, health care, and retirement benefits

Bigger picture view on government

- ▶ Replacing social institutions by markets does not always work.
 - ▶ Education is primarily government funded: student loans work in economic theory but in practice end up being a huge lifetime burden. For-profit education has a tendency to become a scam
 - ▶ Retirement benefits: Saving for your own retirement works in theory but in practice most people unable to do so unless institutions (employers/government) help them
 - ▶ Health care: Health care relies heavily on government/community support everywhere. People are not able to afford or shop rationally for health care
- ▶ Economists can still play a useful role in understanding when markets can help and how individualistic forces can undermine institutions

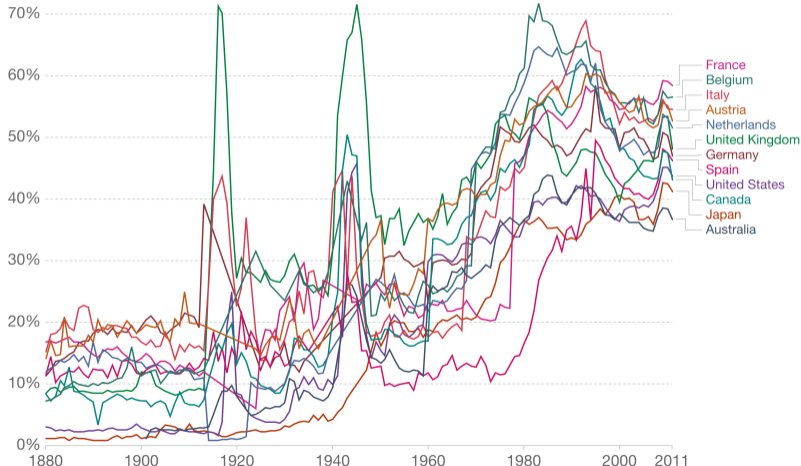
How large are governments?



How large are governments?

Government spending, 1880 to 2011

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



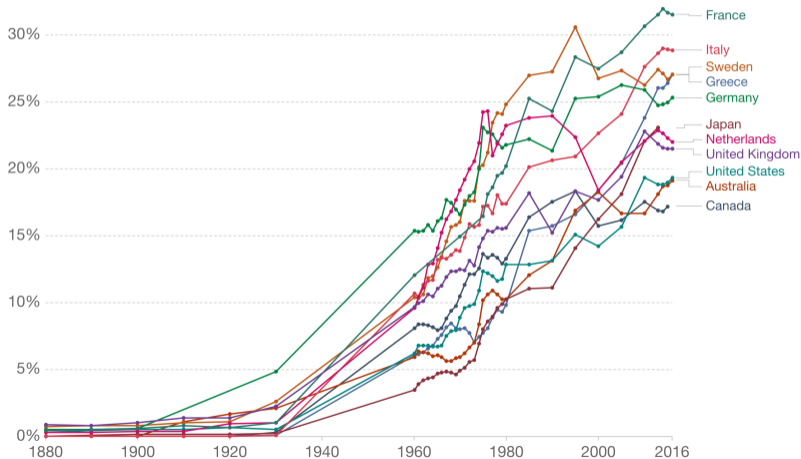
Source: IMF Fiscal Affairs Departmental Data, based on Mauro et al. (2015)

OurWorldInData.org/government-spending • CC BY

How large are governments?

Public social spending as a share of GDP, 1880 to 2016

Social spending includes, among others, the following areas: health, old age, incapacity-related benefits, family, active labor market programmes, unemployment, and housing.

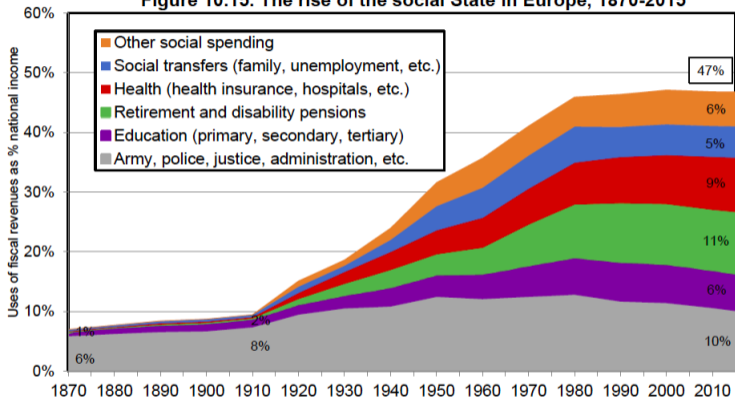


Source: Our World in Data based on OECD and Lindert (2004)

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How large are governments?

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.

How large are governments?

Spesa delle amministrazioni pubbliche: uscite per funzione, 2015
percentuale sul PIL

Settore	FRA	GER	ITA	UK	SPA	USA
Protezione sociale	24.55	18.95	21.43	16.43	17.12	7.84
Sanità	8.17	7.16	7.11	7.62	6.19	9.12
Servizi generali	6.29	5.95	8.37	4.54	6.50	5.21
Affari economici	5.71	3.14	4.05	3.05	4.38	3.30
Istruzione	5.46	4.20	3.96	5.12	4.09	6.12
Difesa	1.76	1.01	1.20	2.13	0.97	3.32
Ordine pubblico e sicurezza	1.63	1.57	1.87	2.00	2.03	2.04
Attività ricreative, culturali e di culto	1.33	1.02	0.74	0.65	1.13	0.25
Abitazioni e assetto del territorio	1.07	0.38	0.61	0.48	0.48	0.53
Protezione dell'ambiente	1.01	0.61	0.96	0.79	0.86	0.00

Public expenses (%GDP) in selected countries by function. Source: italiadati.

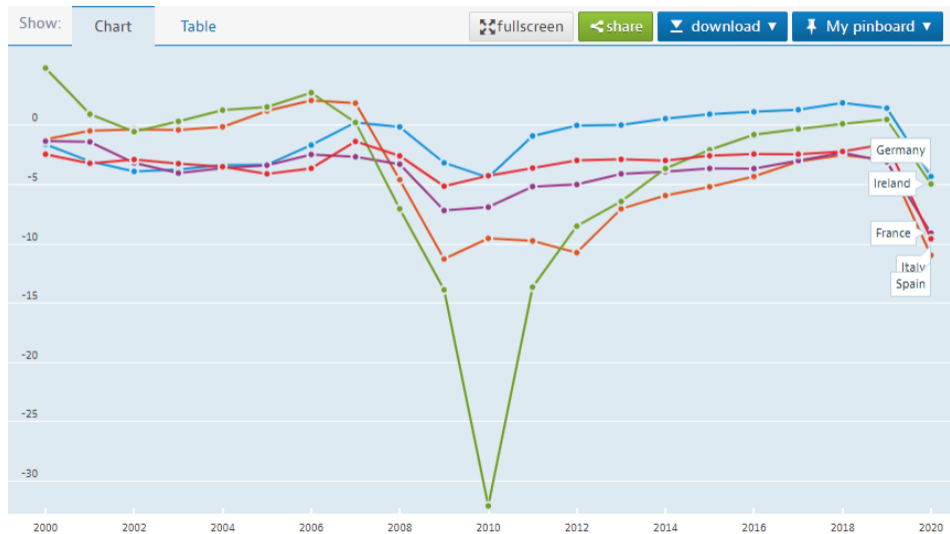
Key facts on taxes and spending

- ▶ **Government Growth:** Size of government relative to GDP 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 Growth is due to the expansion of the welfare state:** (a) public education, (b) public retirement benefits, (c) public health, (d) income support programs
- ▶ **Government Size Stable (as % of GDP)** in richest countries after 1980. Given GDP growth the size of Government increased in levels
- ▶ **Govt spending > Taxes:** Most rich countries run deficits and have significant public debt (relative to GDP), particularly during recessions

Government deficit (% of GDP)

General government deficit Total, % of GDP, 2000 - 2020

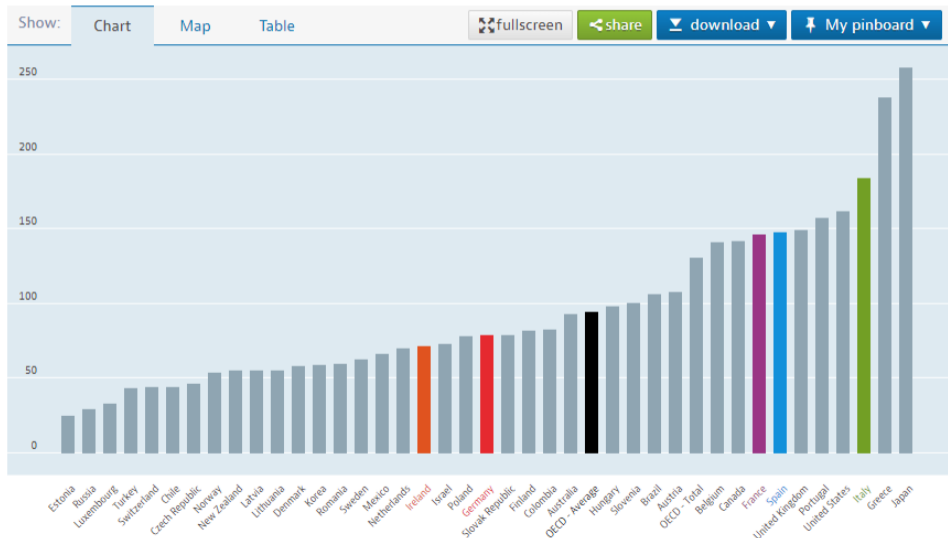
Source: National Accounts at a Glance



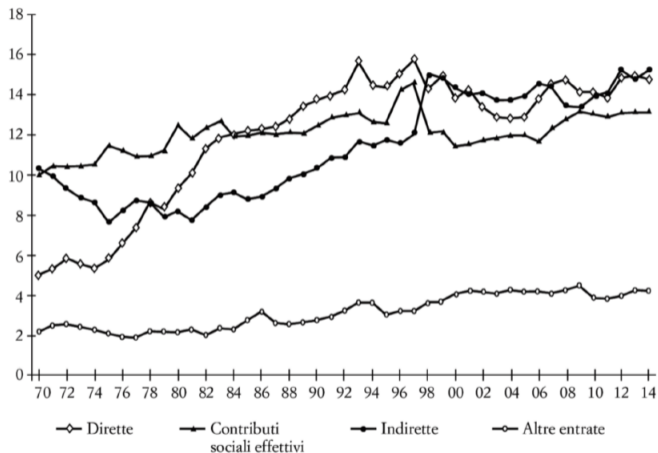
Government debt (% of GDP)

General government debt Total, % of GDP, 2020 or latest available

Source: National Accounts at a Glance

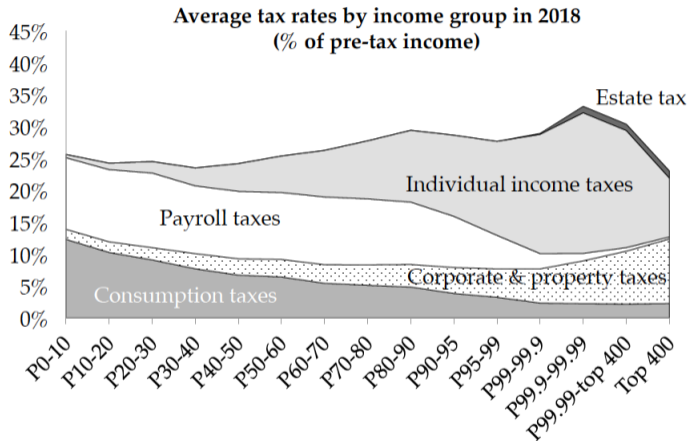


Composition of tax revenues



Revenues collected as %GDP in IT. Source: Bosi (2015)

Distribution of tax rates by income groups



Source: Saez and Zucman (2019)

Normative VS. Positive Public Economics

- ▶ **Positive Public Economics:** Analysis of how things really are (e.g., Does govt provided health care crowd out private health care insurance? Do higher taxes reduce labor supply?)
- ▶ **Normative Public Economics:** Analysis of how things should be (e.g., should the government intervene in health insurance market? how high should taxes be?, etc.)

Positive Public Economics is *necessary* for normative Public Economics

Four questions in public economics

1. **When** should the government intervene in the economy?
2. **How** might the government intervene?
3. **What** is the effect of those interventions on economic outcomes?
4. **Why** do governments choose to intervene in the way that they do?

When should the government intervene in the economy?

- ▶ Economists' traditional view:
 - ▶ **Market failures:** Sometimes market economy fails to deliver efficient outcomes
 - ⇒ Government intervention may improve the situation
 - ▶ **Redistribution:** Market economy generates substantial inequality in economic resources across individuals. Inequality is an issue because we are "social beings"
 - ⇒ People may be willing to pool their resources (through government taxes and transfers) to help achieve socially better allocations
 - ⇒ Redistribution comes as an outcome of **equity-efficiency trade-off**

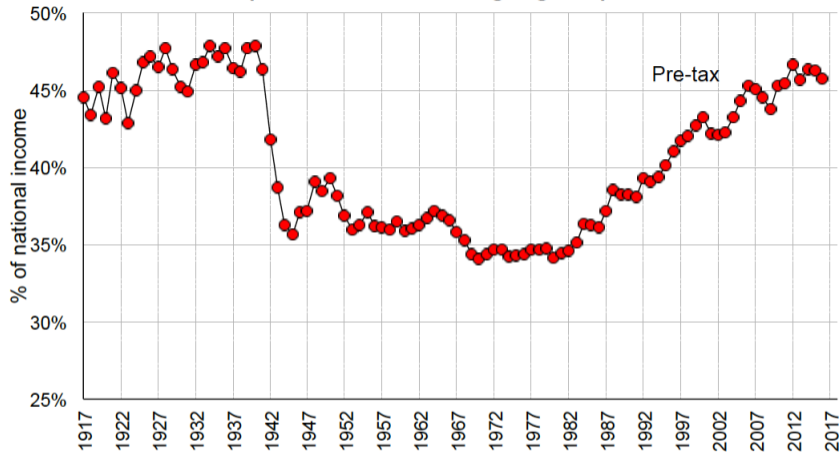
Main market failures

1. **Externalities:** (example: greenhouse carbon emissions) \Rightarrow require govt interventions (such as corrective taxation)
2. **Natural monopoly:** (example: railroads) \Rightarrow requires regulation
3. **Imperfect or Asymmetric Information:** (example: health insurance markets are subject to vicious circles)
4. **Individual failures:** People do not behave as “fully rational individuals”. This is analyzed in behavioral economics which is a field in huge expansion (example: myopic people may not save enough for retirement)

Inequality and redistribution

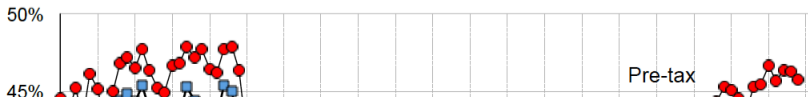
- ▶ Even when market delivers an efficient outcome, society might not be happy with the market outcome because market equilibrium might generate very high economic disparity across individuals
- ▶ Governments may use taxes and transfers to redistribute from rich to poor and reduce inequality
- ▶ Redistribution through taxes and transfers has efficiency costs.
 - might reduce incentives to work
 - (efficiency costs)**
 - ⇒ 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 (e.g., Piketty's 2014 book success)

Share of pre-tax national income going to top 10% adults



Source: Piketty, Saez, and Zucman (2018)

Top 10% national income share: pre-tax vs. post-tax



How might the government intervene?

- ▶ **Price incentives - Tax or Subsidize Private Sale or Purchase:** Tax goods that are overproduced (e.g. carbon tax) and subsidized goods underproduced (e.g., flu shots subsidies)
- ▶ **Regulation - Restrict or Mandate Private Sale or Purchase:** Restrict the private sale or purchase of overproduced goods (e.g. fuel efficiency requirements), or mandate the private purchase of underproduced goods (e.g., auto insurance)
- ▶ **Public Provision:** The government can provide the good directly, in order to potentially attain the level of consumption that maximizes social welfare (example is National Defense)
- ▶ **Public Financing of Private Provision:** Government pays for the good but private sector supplies it (e.g., privately provided health insurance paid for by US government in Medicare-Medicaid)

What is the impact of government intervention?

- ▶ **Direct (mechanical) effects:** The effects of government interventions that would be predicted if individuals did not change their behavior in response to the interventions.

⇒ Relatively easy to compute

- ▶ **Indirect (behavioral) effects:** The effects of government interventions that arise only because individuals change their behavior in response to the interventions

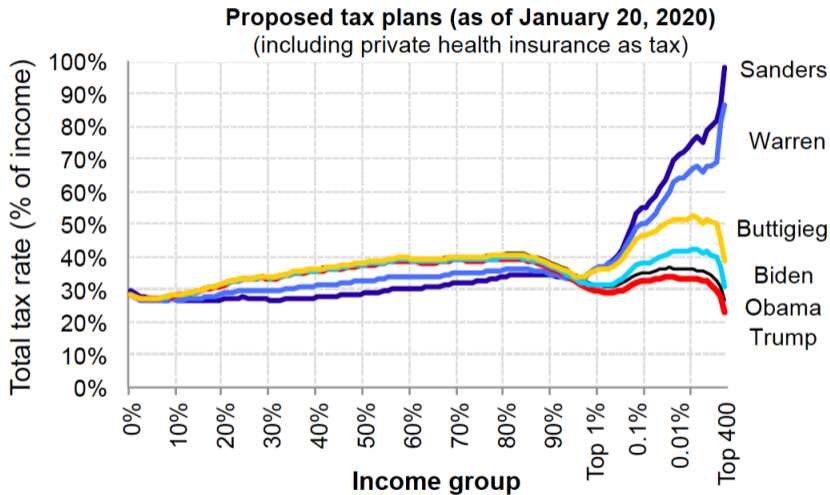
⇒ **Example:** increasing top income tax rates mechanically raises tax revenue but top earners might find ways to evade/avoid taxes, reducing tax revenue relative to mechanical calculation

⇒ Empirical public economics analysis tries to estimate indirect effects to inform the policy debate

Why do governments intervene the way they do?

- ▶ Not all the economic equilibria are implementable, due to how the political process produces decisions affecting individuals and economy
- ▶ Governments do not necessarily act only to maximize individuals' welfare
 - ⇒ **Economic equilibrium** \neq **Political equilibrium**
 - ⇒ **Example:** Understanding how the level of taxes and spending is set through voting and voters' preferences
- ▶ **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 in the benefit of society (e.g., government captured by special interests or a self-perpetuating bureaucracy)

The political economy of taxation in the 2020 US elections



Paternalism vs. Individual failures

- ▶ In many situations the government intervenes when individuals may not or do not seem to act in their best interest.
- ▶ Example: **Many individuals are not able to save for retirement for themselves.**
- ▶ **Paternalism view (or Libertarian):** Government wrongly believes individuals are not able to act in their best interest
 - ▶ Individuals should be free to decide to consume today instead of saving for the future.
 - ▶ Government wants to impose its own preferences against individuals' will.
 - ▶ Under paternalism individuals are opposed to government interventions.
- ▶ **Behavioralist (individual failures) view:** Individuals fail in taking the right decision due to cognitive biases.
 - ▶ Government wants to nudge people to undertake the right behavior
 - ▶ Under individual failures, individuals understand they have failures, and they will support government's intervention

Regulatory role of government

- ▶ Another critical role the government plays in all nations is that of *regulating economic and social activities*
- ▶ **Production of laws to:**
 - ▶ Regulate private activities (civil law)
 - ▶ Preserve the social order (penal law)
 - ▶ Regulate the power of government (public law)
- ▶ **Examples:** Food and Drug regulation (labeling and safety of food products and approval of drugs), Occupational Safety and Health (regulating the workplace safety), Environmental Protection (safeguarding the environment from pollutants)

References

- ▶ Musgrave, R.A. *The Theory of Public Finance*. New York: McGraw Hill, 1959.
- ▶ Piketty, Thomas, *Capital in the 21st Century*, Cambridge: Harvard University Press, 2014, Chapter 13
- ▶ Piketty, Thomas, *Capital and Ideology*, Cambridge: Harvard University Press, 2020, Chapter 10
- ▶ Piketty, Thomas, Emmanuel Saez, and Gabriel Zucman, “Distributional National Accounts: Methods and Estimates for the United States”, *Quarterly Journal of Economics*, 133(2), 553-609, 2018
- ▶ Rosen, Harvey, and Ted Gayer. *Public finance*, McGraw Hill Education, 2014, Ch.1
- ▶ Saez, Emmanuel and Gabriel Zucman. *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make them Pay*, New York: W.W. Norton, 2019.