#### EC2106 PUBLIC ECONOMICS

David Seim

Fall 2022



#### Course Logistics I

#### Lecture environment:

- Interactions.
- Ask during breaks.
- Contact: david.seim@su.se
- Material:
  - Gruber: "Public Finance and Public Policy", 4th edition or later.
  - Selected research articles.
  - Lecture notes posted on Athena.
- Why many research articles?

## Examination: Two Options

- Option 1:
  - A. Final exam (0 100 points).
  - B. Quizes with 5 multiple choice questions.
    - Open a couple of minutes during the lecture.
    - 3+ correct gives 2 points for exam.
    - Maximum: 2x10=20 credits.
    - Two goals:
      - (i) Incentive for you.; (ii) Feedback for me.
    - Drawbacks: i. Stress (?); ii. Not possible to make up for missed credit.
- Option 2: Option 1, but without the quiz credits.
  - Grade only determined by exam.
- www.menti.com

#### Overview of Today's Lecture

- 1. Talk about Public Economics on a broad level. Where is the government present?
- 2. Lay out four questions that are the core of public finance.
  - Goal of the lecture:
    - To provide an orientation of the role of the government and what this field is about.
    - ii. Motivate why the field is interesting.
  - Based on Gruber's Chapter 1 and research articles.

What do You Think?

Introduction to Public Finance / Public Economics

What do you associate with **Public Economics**? Go to <a href="https://www.menti.com">www.menti.com</a>

**Public Economics** (or **Public Finance**) = Study of the role of government in the economy

Government present in everyday economic life.

- Taxes: Governments collect 30-45 % of GDP in taxes in developed countries
- Expenditures:
  - Public goods (defense, infrastructure, safety, education), welfare programs (health insurance, unemployment insurance, income support, retirement benefits).
  - local and federal governments account for 1/3 of national employment in Sweden.
- Regulation: Minimum wages, labor laws, environment, trade agreements.
  - Sweden's Labor laws (LAS) reformed on October 1 2022.
- Macro-economic stabilization: Central bank policies (Riksbank's inflation target: around 2 %), fiscal stimulus.

**Public Economics** (or **Public Finance**) = Study of the role of government in the economy

Government present in everyday economic life.

- Taxes: Governments collect 30-45 % of GDP in taxes in developed countries.
- Expenditures:
  - Public goods (defense, infrastructure, safety, education), welfare programs (health insurance, unemployment insurance, income support, retirement benefits).
  - local and federal governments account for 1/3 of national employment in Sweden.
- Regulation: Minimum wages, labor laws, environment, trade agreements.
  - Sweden's Labor laws (LAS) reformed on October 1 2022.
- Macro-economic stabilization: Central bank policies (Riksbank's inflation target: around 2 %), fiscal stimulus.

**Public Economics** (or **Public Finance**) = Study of the role of government in the economy

Government present in everyday economic life.

- Taxes: Governments collect 30-45 % of GDP in taxes in developed countries.

#### - Expenditures:

- Public goods (defense, infrastructure, safety, education), welfare programs (health insurance, unemployment insurance, income support, retirement benefits).
- <u>local</u> and <u>federal governments</u> account for **1/3** of national employment in Sweden.
- Regulation: Minimum wages, labor laws, environment, trade agreements.
  - Sweden's Labor laws (LAS) reformed on October 1 2022
- Macro-economic stabilization: Central bank policies (Riksbank's inflation target: around 2 %), fiscal stimulus

**Public Economics** (or **Public Finance**) = Study of the role of government in the economy

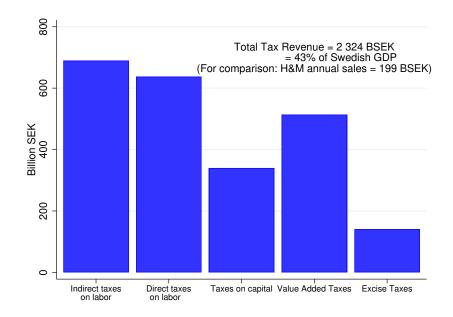
Government present in everyday economic life.

- Taxes: Governments collect 30-45 % of GDP in taxes in developed countries.

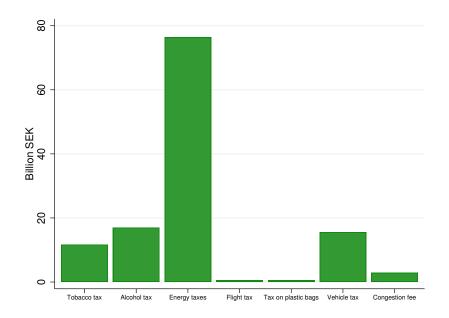
#### - Expenditures:

- Public goods (defense, infrastructure, safety, education), welfare programs (health insurance, unemployment insurance, income support, retirement benefits).
- <u>local</u> and <u>federal governments</u> account for **1/3** of national employment in Sweden.
- Regulation: Minimum wages, labor laws, environment, trade agreements.
  - Sweden's Labor laws (LAS) reformed on October 1 2022.
- Macro-economic stabilization: Central bank policies (Riksbank's inflation target: around 2 %), fiscal stimulus.

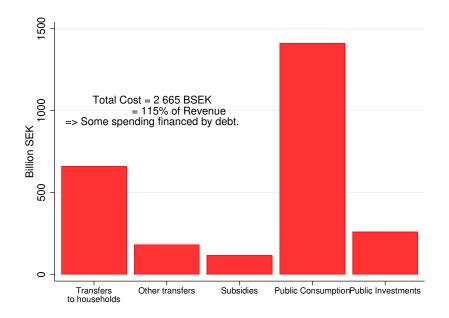
#### Government Revenue in Sweden 2021



#### Excise Taxes in Sweden 2021



## Government Spending in Sweden 2021



## Why Study Public Economics?

- 1. STAKES ARE HIGH.
  - Size of government huge in relation to the economy in developed countries. Gov't revenue amounts to 30-45% of GDP.

#### 2. SCIENCE NEEDED.

- Injecting science to controversial political debates has a high value.
  - Swedish example 1: Contentious debate about benefits and costs of immigration. See <u>Joakim Ruist</u>.
  - Swedish example 2: How to shield citizens from surging energy costs?

#### 3. MAKE THE WORLD A BETTER PLACE.

- Interest in improving the world  $\rightarrow$  Interest in Public Economics.

#### 4. METHODS ARE INTERESTING.

 Public Economics is undergoing an exciting methodological transformation.

#### **DEBATT**

Vad/var | Ämnet

#### 4. Rubrik 18 p på två fina rader ruggrikt 1. Notis ut 3000 for inklusive incressen

Non exped maximpores sit quibust ibusap 3000 tkn inklusive incressen. Non exped

Slopa dyra reformen och få



#### 4. Rubrik 18 p på två fina rader ruggrikt

1. Notis ut 3000 tkn inklusive incressen Non exped maximpores sit quibust ibusapi 3000 tkn inklusive ingressen. Non exped maximpores sit quibust ibusapi tinvel mi



mer för pengarna Fortsatta stödinsatser för sysselsättningen behövs och dessa måste få kosta. Men det finns effektivare åtgärder än sänkningen av arbetsgivaravgifterna för unga

lerna, föreslis en tillfällir minskning av av lönen till knappt 20 procent från I april sånkningen 2007 (som var lika stor som den 2021 och två år framåt. Reformen kostar cirks nu föreslagna) 6 000-10 000 nya jobb för ung-9 miliarder kronor per år. Den är därmed en domar. Men den statsfinansiella bruttokost av de dyraste i budgeten. Huvudsyftet är att | naden var hög; mellan I och 1,6 miljoner kro

heten som nu sker. ná olíka tobb. är hörre än bland äldre och mer till dem som är i arbetskraften, vilket bara är ungefär hälften i äldersgruppen. Dessutom söler minea unea arbetslösa endast deltidsjobb som komplement till sina studier.

Samtidigt stiger arbetslösheten alltid mer I augusti var knappt 2 procentenheter högre In für ett är sedan, hade den stirit med mer in 6 procentenheter för ungdomar. Arbets- Lööf och Centern för att hävda att lägre löshet som förhindrar ungas etablering på arbetsgivaraveiher för ungdomar är effektiva arbetsmarknaden är djupt problematisk. | för att öka dessas sysselsättning. Tyvärr över-Forskning från USA visar att ungdomar som - tolkas resultaten. I stälva verket finner stu ligt lägre. Viedet av att få arbetslösa unga Det mamed den senare analysen är att den

unndemsarbetslösbeten angelägna. Särskilt Centerportiet tycks i alla lägen vara | överskott att dela mellan ägare och anställda en stark förespråkare för sänkta arbetsetoar- i företaren. Både vinster och löner - för alla avgifter som metod att öka sysselsättningen. medarbetare oberoende av ålder - ökade. Samtidiet finns en utbredd skepsis mot denna. Omsåttningen blev större. Samtidiet ster itglied bland ekonomer. En vanlig invindning investeringarna och såvil fler yngre som flet har varit att en sidan kostnadssänkning kan läldre anställdes. Kapitalet stannade alltså antas leda till att lönerna ökar i motsvarande | inte bara i företagen utan användes på ett grad utan att någon positiv sysselsättnings- produktivt sätt. En IFAU-studie av Johan Egebark och Nik- arbetagivaravgifter för unga kanske inte

escrimens badectropposition, som för- I las Kaunitz 2013 undersökte effekterna av de I handlats fram med Centern och Libera-sånkta arbetsgivaravgifter för unga som alliarbetsgivaravgiftenför unga. Avgiften för 13-23-åringar sänks från drygt 3 procent 1 tydande löneflekter. Enligt stadien skapade motverka den ökning av ungdomsarbetslös- nor ner jobb. Slutsatsen blev därför att åtgär-

Det finns många aspekter på ungdoms- rödgröna regeringen 2015 höjde arbetsetyar

En billigare och bättre

metod är förstärkta

anställningsstöd som

bara subventionerar

nvanställningar.

umga på mytt. Rapporten har amvänts av Annis

i en ramport från SNS Analys 2019 - utydede-Lars Calmfors och David Seim. ras allians reseringens availts sinkningar för

drivit på för sänkta arbets

givacusgifter för unga. Foto

främst ska ses som ett stöd för dessas sysse sysselsätter månra unga. Hotell, restaurans drabbats hårt av coronakrisen, är sådana

verksambeter. Det kan i nuvarande läge finnas skil för selektiva stöd till särskilt utsatta branscher. Men lägre arbetsgivaravgifter för unga är inte ett effektivt slitt att åstadkomma det: dels submånga anstillda unedomar som inte drab domar i sürskilt hör erad (till exempel kultu

Grandproblemet med strikts arbeturious avrifter i syfte att öka unedomssysselsättblir så der. En billieure och bättre metod är förstärkta anställningsstöd som bara subcentionerar manetallningar. Alliansen in riktar sig mot dem som står långt från arbets marknaden, numera främst länetidsarbets subventionsgraden i mystartstobben och sån del av dem. Villkoren skalle kunna söras sär ning och unga i regioner med hög arbetslös-

Även i mayarande situation med stor ente het om att fortsatta stödinsatser för sysse kosta. år det viktiet med noreranna över väganden om olika åtgårders effektivitet Därför bör inte sänkninem av arbetsetvar avgifterna för unga genomföras.

Lars Calmfors

## Four Questions of Public Economics

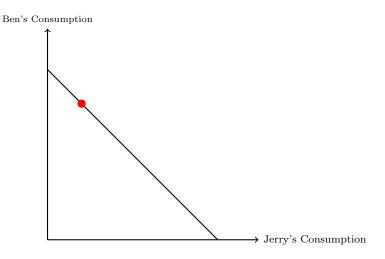
- 1. When should the government intervene in the economy?
- 2. How might the government intervene?
- 3. What is the effect of those interventions on economic outcomes?
- 4. Why do governments choose to intervene in the way that they do?

1. When should the government intervene in the economy?

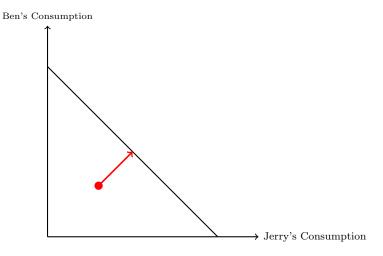
 Market failure: Market economy delivers an outcome which is inefficient.

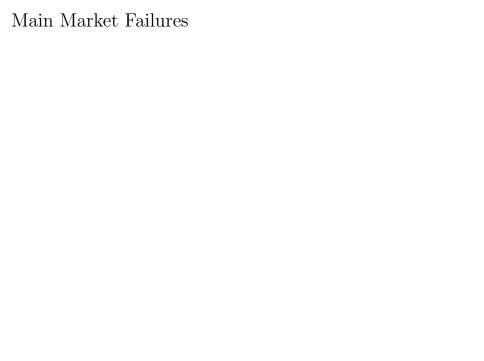
Government intervention  $\Rightarrow$  improve the situation.

#### When Private Market Allocation is Efficient



## First Role of Government: Improve Efficiency





#### Main Market Failures

- **Externalities** Greenhouse gases regulation of emissions and/or pigouvian taxes / subsidies. Mandatory health insurance.
- Imperfect competition Monopolies or oligopolies (small number of sellers) brings prices up too high.
- Imperfect and asymmetric information Example: Mandatory health and unemployment insurance.
- Individual failures People are not always rational. Example: people do not save enough for retirement, people do not care about their health.

#### Paternalism and Individual Failures

Why do people choose actions which are seemingly unrational?

- **Libertarian View:** Individuals always do what they think is right for them. Govt acts **paternalistically** if it distorts individuals' choices.
- Behavioral Economics View: Individuals have self-control problems which the govt should correct.

Example: Sin taxes - taxes on fat and sugar. Should they be present?

1. When should the government intervene in the economy?

 Market failure: Market economy delivers an outcome which is inefficient.

Government intervention  $\Rightarrow$  improve the situation.

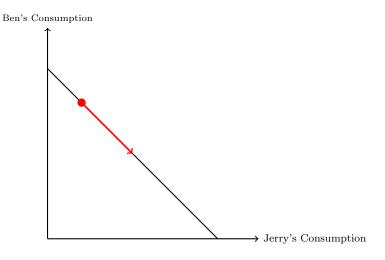
2. **Redistribution**: Market economy delivers an efficient but highly unequal outcome.

Government intervention  $\Rightarrow$  reduce inequality through redistribution.

## Inequality and Redistribution

- Market outcome may be Pareto efficient, but there could still be room for government intervention if the distribution of resources is very unequal.

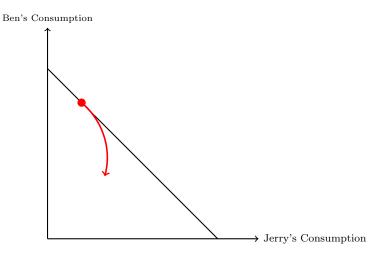
## Second Role of Government: Improve Distribution



## Inequality and Redistribution

- Market outcome may be Pareto efficient, may want government intervention if the distribution of resources is very unequal.
- Redistribution creates a trade-off between **equity** (a more equal distribution of the pie) and **efficiency** (redistribution achieved through taxes and subsidies that lowers incentives to work).

## Equity-Efficiency Trade-Off



At present, there is a **highly contentious debate** in the US about inequality of resources and policy responses.

- Rising inequality is the narrative of our time
  - $\Rightarrow$  More redistribution.

Academically: What is the level of inequality today? How has it changed over time?

Input 1: Inequality concepts.

Inequality of income or wealth?

Input 2: Data.

Where do we get data? And what type of data do we use?

Survey data or Administrative data.

At present, there is a **highly contentious debate** in the US about inequality of resources and policy responses.

- Rising inequality is the narrative of our time
  - $\Rightarrow$  More redistribution.

Academically: What is the level of inequality today? How has it changed over time?

Input 1: Inequality concepts.

Inequality of income or wealth?

Input 2: Data.

Where do we get data? And what type of data do we use?

Survey data or Administrative data.

At present, there is a **highly contentious debate** in the US about inequality of resources and policy responses.

- Rising inequality is the narrative of our time
  - $\Rightarrow$  More redistribution.

Academically: What is the level of inequality today? How has it changed over time?

Input 1: Inequality concepts.

Inequality of income or wealth?

Input 2: Data.

Where do we get data? And what type of data do we use? Survey data or Administrative data.

At present, there is a **highly contentious debate** in the US about inequality of resources and policy responses.

- Rising inequality is the narrative of our time
  - $\Rightarrow$  More redistribution.

Academically: What is the level of inequality today? How has it changed over time?

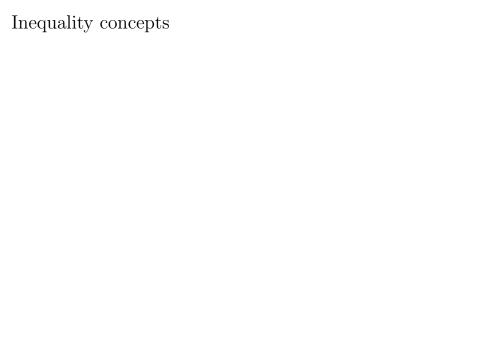
Input 1: Inequality concepts.

Inequality of income or wealth?

Input 2: Data.

Where do we get data? And what type of data do we use?

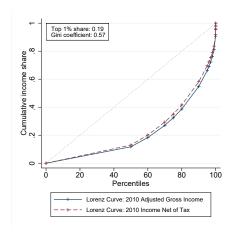
Survey data or Administrative data.



#### Inequality concepts

- Lorenz curve L(p) at percentile p is the share of total income earned by individuals below percentile p.

$$0 \le L(p) \le p$$
.



#### Common inequality concepts

1. **Gini** coefficient measures the area between perfect equality and Lorenz curve.

Gini=0: perfect equality. Gini=1: complete inequality (top earner earns everything).

- 2. Income quantile shares measure the share of total income going to given quantile  $[p_1, p_2]$  from percentile  $p_1$  to  $p_2$ . Examples: top 1% income share is around  $20\% \Leftrightarrow \text{Top } 1\%$  incomes are 20 times larger than the average.
- 3. Percentile ratios (Kuznets ratios) are  $z_{p_2}/z_{p_1}$ .
- 4. Poverty rate is the fraction of population below  $z^*$ . NB! Not constructed with Lorenz-curve.

## Essential preliminaries

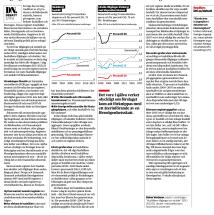
- 1. Inequality of what: income, consumption or wealth?
- 2. Time-period: measure outcome quarterly, annually or over the life-cycle?
- 3. Unit of observation: individual or household.
- 4. Data sources:
  - i. Survey data, e.g. LNU survey data administered at Stockholm  $\overline{\text{U}}$ .
  - ii. Administrative data, e.g. Income Tax Registers.

#### Limitations in the Swedish context



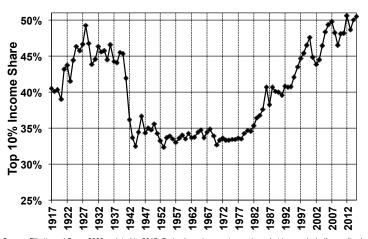
# och skulder bör registreras"

Hur sårbara är svenska hushåll, och vilka konsekvenser har amorteringskravet haft? Det är frågor vi i dagsläget inte kan ge ett tillräckligt bra svar på, vilket försvårar en väl avvägd penningpolitik. I dag överlämnas ett förslag till finansministern om ett nytt register över svenska hushållens tillgångar och skulder, skriver Roine Vestman, expert i utredningen.

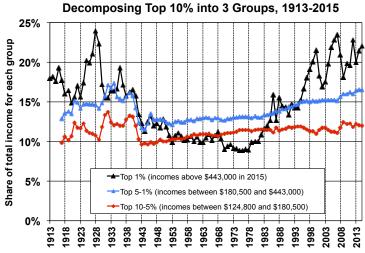


## Inequality in the US

Top 10% Pre-tax Income Share in the US, 1917-2015

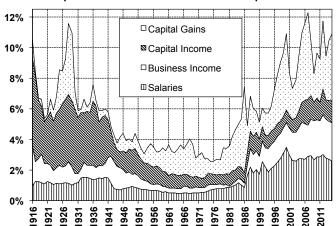


Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.



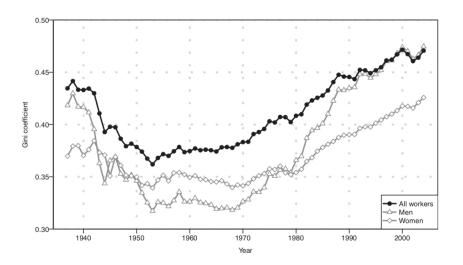
Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

US Top 0.1% Pre-Tax Income Share and Composition



Source: Piketty and Saez, 2003 updated to 2015. Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Until 1998: "Working rich have overtaken coupon-clipping rentiers."



Source: Kopczuk, Saez and Song, 2010, QJE.

# Piketty, Saez and Zucman (2018)

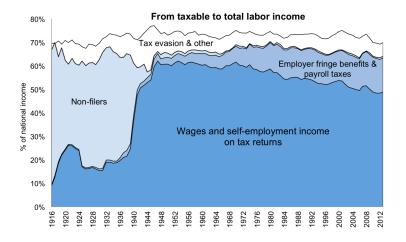
### Gap between

- macro-measurements of growth and
- micro-measurements of inequality.
- How much of total economic growth accrued to the bottom 50% or the top 10%?
- How does government revenue/spending affect the distribution of growth?

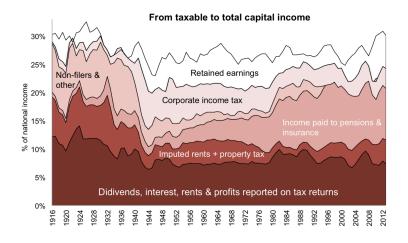
#### Innovation:

- Bridge the gap by distributing **national income** to the citizens.
- Use tax returns, surveys and assumptions to allocate these income.

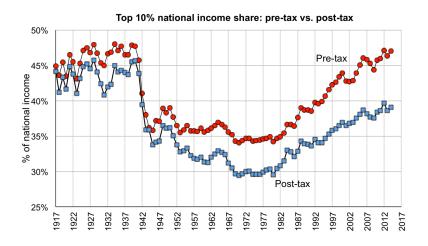
# How much labor income is missing?



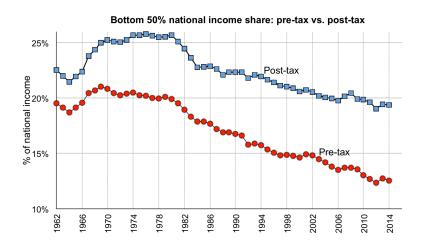
# How much capital income is missing?



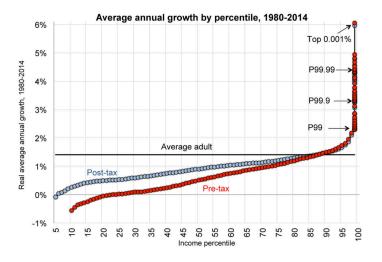
# New series confirm tax-data picture

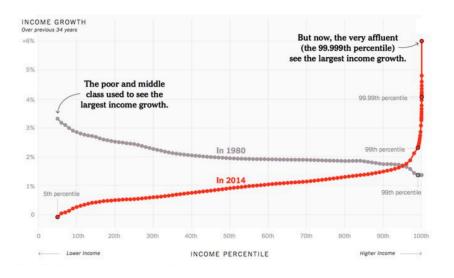


# Collapse of the bottom 50 %



# How is economic growth distributed?



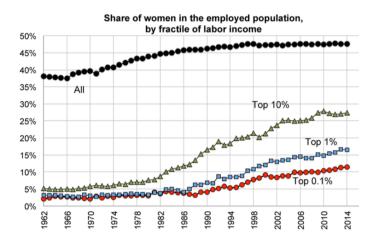


Source: Piketty, Saez and Zucman (2018) on request from NYTimes.

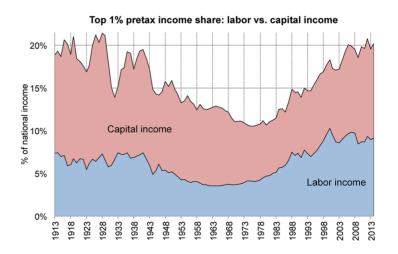
# Gender inequality



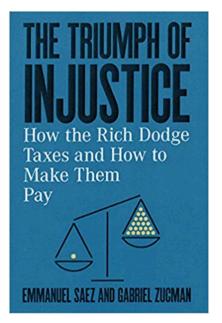
# Gender inequality



## Capital and labor shares



# Recommended reading



# Criticism: Auten and Splinter (2022)

Rising income inequality is partly an artefact of measurement changes.

(i) 40 % of the increase in top share from 1960 to 2015 due to Tax Reform Act (TRA) in 1986.

#### Reform:

lowered top statutory taxes,

 $\rightarrow$  firm owners **choose** to report firm profits as wage income.

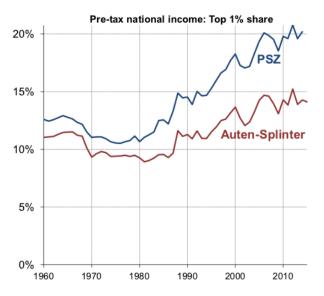
broadened tax base,

 $\rightarrow$  more income had to be reported in tax files.

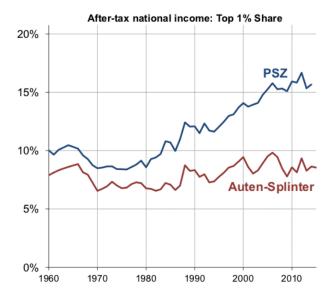
increased dependent filers.

 $\rightarrow$  nr of low-income filers  $\uparrow \rightarrow$  threshold for top  $X \% \downarrow$ 

(ii) Declining marriage rates in the lower part of the distribution.

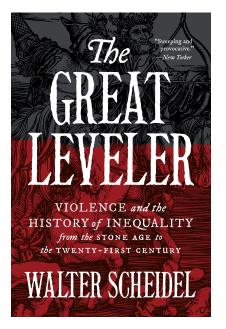


Source: Auten and Splinter (2022).



Source: Auten and Splinter (2022).

### How can we affect the trends?



## How can we affect the trends?

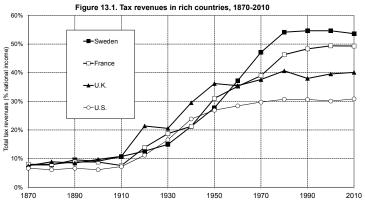
- Can the government do anything?
- Walter Scheidel, "The great Leveler":
  - Questions the  ${\bf 2nd}$  question of Public Economics.
- 1. Large wars
- 2. Revolution
- 3. State collapse
- 4. Natural disasters

### Government the fifth leveler?

- i. Expansion of the public sector during 20th century.
- ii. Post-tax inequality much lower than pre-tax (cf. Aaberge et al, 2010).
- iii. External shocks (which Scheidel describes) triggered policy reforms.

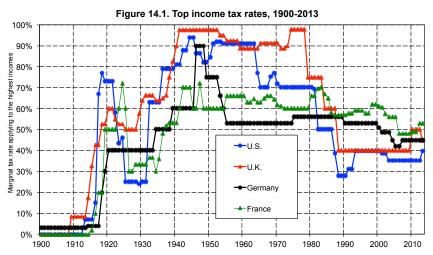
iv. Policy changes have long-lasting influences.

# Argument i. Size of gov't ↑



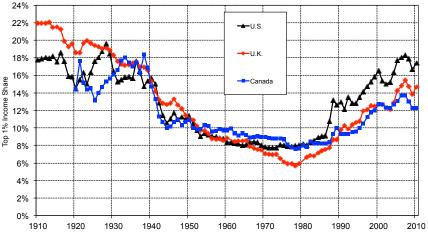
Total tax revenues were less than 10% of national income in rich countries until 1900-1910; they represent between 30% and 55% of national income in 2000-2010. Sources and series: see piketty.pse.ens.fr/capital21c.

# Argument ii. Progressive taxes



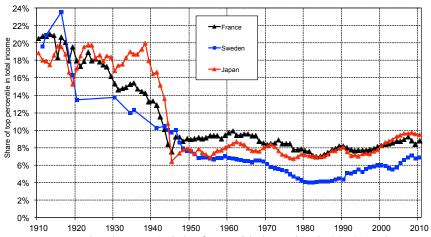
The top marginal tax rate of the income tax (applying to the highest incomes) in the U.S. dropped from 70% in 1980 to 28% in 1988. Sources and series: see piketty.pse.ens.fr/capital21c.

Figure 9.2. Income inequality in Anglo-saxon countries, 1910-2010



The share of top percentile in total income rose since the 1970s in all Anglo-saxon countries, but with different magnitudes. Sources and series: see piketty.pse.ens.fr/capital21c.

Figure 9.3. Income inequality: Continental Europe and Japan, 1910-2010



As compared to Anglo-saxon countries, the share of top percentile barely increased since the 1970s in Continental Europe and Japan. Sources and series: see piketty.pse.ens.fr/capital21c.

### Conclusion

- Q: Should the government intervene by redistributing resources from rich to poor?
  - Question also depends on the efficiency-costs of intervening.
  - Not clear there is a trade-off b/w equity and efficiency.
    - → Some evidence suggests rent-seeking important at the top of the distribution.

2. **How** might the government intervene?

### 1. Tax / Subsidize Sales or Purchases:

- Use government policy to change the price of goods.
- Taxation, ex: labor income taxes, fuel taxes, alcohol taxes.
- Elizabeth Warren: Tax wealth!
- Subsidies, ex: food stamps, flu shots.

2. How might the government intervene?

- 2. Quotas and Mandates: Restrict sales of goods that are overproduced (quotas). Ex: import quotas. Require purchases of goods that are underproduced (mandates). Ex: auto insurance.
- 3. **Public Provision:** Government provides the good directly. Ex. defense.
- 4. Public Financing of Private Provision: Government pays, private companies provide the good.

- 3. What are the effects of interventions on economic outcomes?
  - 1. **Direct Effects / Mechanical effects:** The predicted effects if individuals do not change their behavior.
    - Example: Raise taxes by 10 percentage points (from 20% to 30%). If average income is 300,000 SEK, this effect amounts to  $30\% \times 300,000 20\% \times 300,000 = 30,000$ .
  - Indirect effects / Behavioral effects: The effects that arise
    only because individuals change their behavior (also called
    unintended effects).
    - Suppose individuals change behavior and work less with higher taxes. Average income is 250,000 after reform. Then revenue effect  $30\% \times 250,000 20\% \times 300,000 = 15,000$ .
      - 30,000 15,000 = 15,000 lost due to **behavioral responses**

- 3. What are the effects of interventions on economic outcomes?
  - 1. **Direct Effects / Mechanical effects:** The predicted effects if individuals do not change their behavior.
    - Example: Raise taxes by 10 percentage points (from 20% to 30%). If average income is 300,000 SEK, this effect amounts to  $30\% \times 300,000 20\% \times 300,000 = 30,000$ .
  - Indirect effects / Behavioral effects: The effects that arise only because individuals change their behavior (also called unintended effects).
    - Suppose individuals change behavior and work less with higher taxes. Average income is 250,000 after reform. Then revenue effect  $30\% \times 250,000 20\% \times 300,000 = 15,000$ .
      - 30,000 15,000 = 15,000 lost due to **behavioral responses**.

4. Why do governments do what they do?

**Political Economy:** The theory of how the political process produces decisions that affect individuals and the economy.

Example: How is the level of taxes and spending affected through voting and voters' preferences?

# Normative versus Positive Questions

- Normative analysis How should things be? How should policies be designed optimally?
  - When should the government intervene in the economy?
  - How Might the Government Intervene?
- Positive analysis How are things? Do income taxes influence labor supply? How do governments choose policies?
  - What are the Effects of Interventions on Economic Outcomes?
  - Why Do Governments Do What They Do?
- Positive analysis is mainly empirical and normative analysis is mainly theoretical.

# My Research

- Within Public Economics
- Available on my webpage.
- 1) Analyses of the effects of taxes, transfers and social insurance schemes on individuals' and firms' behavior.
- 2) Determinants of inequality.
- 3) Political economy: How are individuals' political preferences shaped?

Some of my work will appear in the course.

#### REFERENCES

- Jonathan Gruber, Public Finance and Public Policy, Sixth Edition,
   2019 Worth Publishers, Chapter 1, "Why Study Public Finance?"
- Auten, Gerald and David Splinter, 2022. "Income Inequality in the United States: Using Tax Data to Measure Long-term Trends", unpublished, (link).
- Kopczuk, Wojciech, Emmanuel Saez and Jae Song, 2010. "Earnings Inequality and Mobility in the United States: Evidence from Social Security Data since 1937", Quarterly Journal of Economics, 125(1): 91-128. (link).
- Piketty, Thomas, Capital in the 21st Century, Cambridge: Harvard University Press, 2014, Chapter 13, (<u>link</u>)
- Piketty, Thomas and Emmanuel Saez "Income Inequality in the United States, 1913-1998", Quarterly Journal of Economics, 118(1), 2003, 1-39, series updated to 2015 (<u>link</u>)
- 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 (<u>link</u>)