Principles of Economics II

Lecture 2: Public policy continued

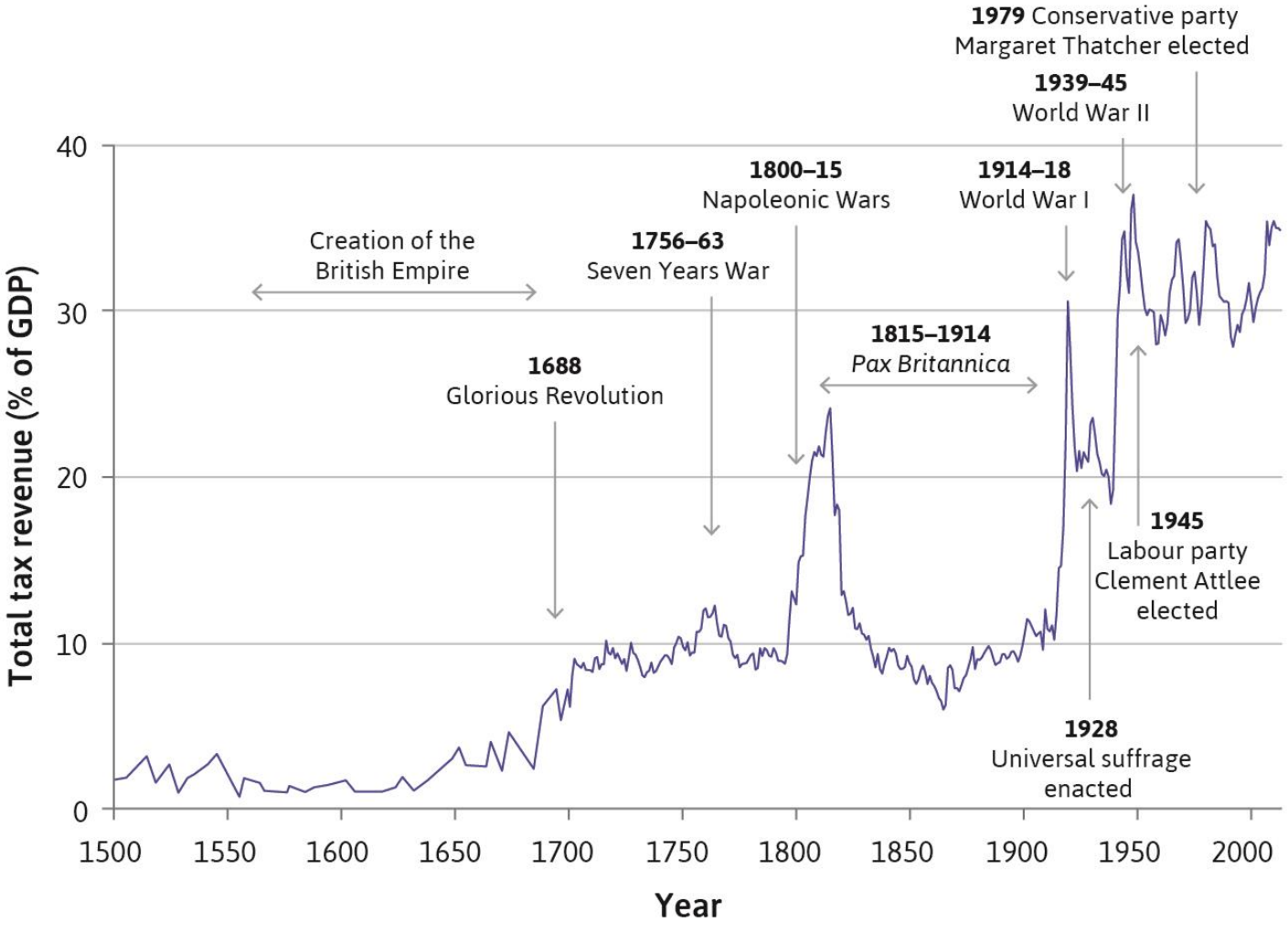
Fall 2020
Tuukka Saarimaa

Outline

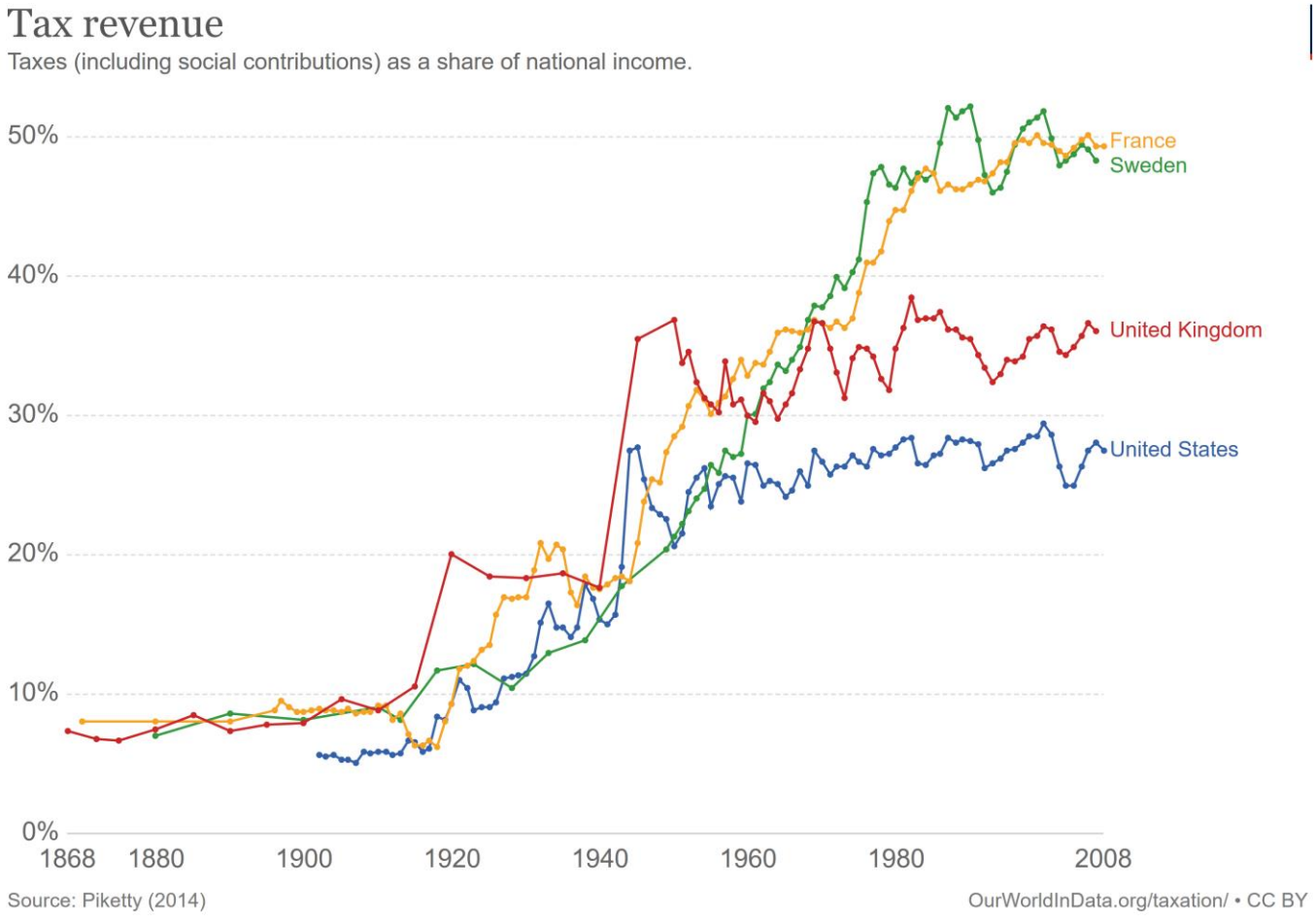
- **Public sector in numbers**
  - Growth of the public sector through time
  - What does the public sector do and tax in Finland and other countries?
- **Designing a tax system**
  - Horizontal and vertical equity
- **Examples**

Public sector in numbers

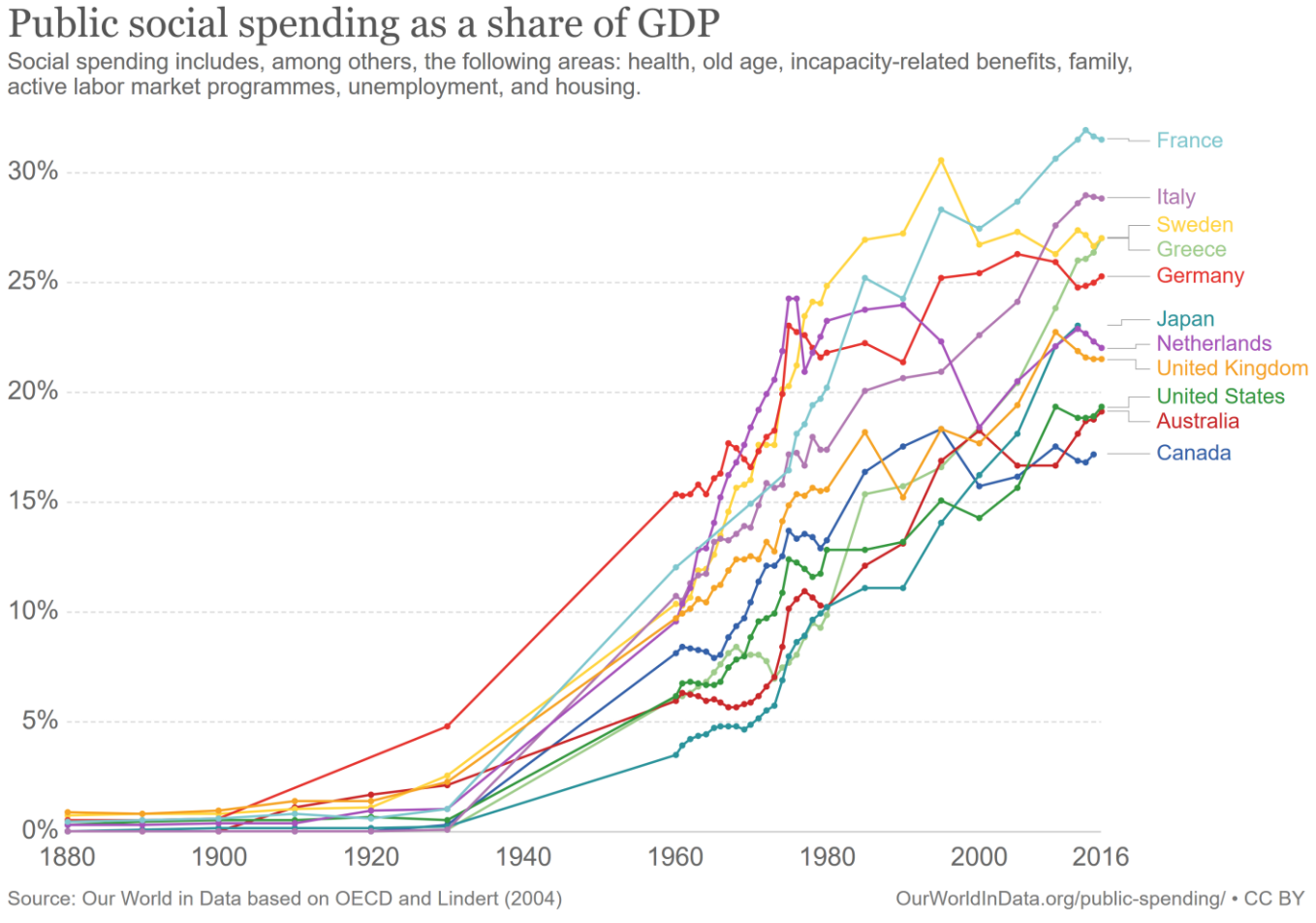
Role of government – taxation



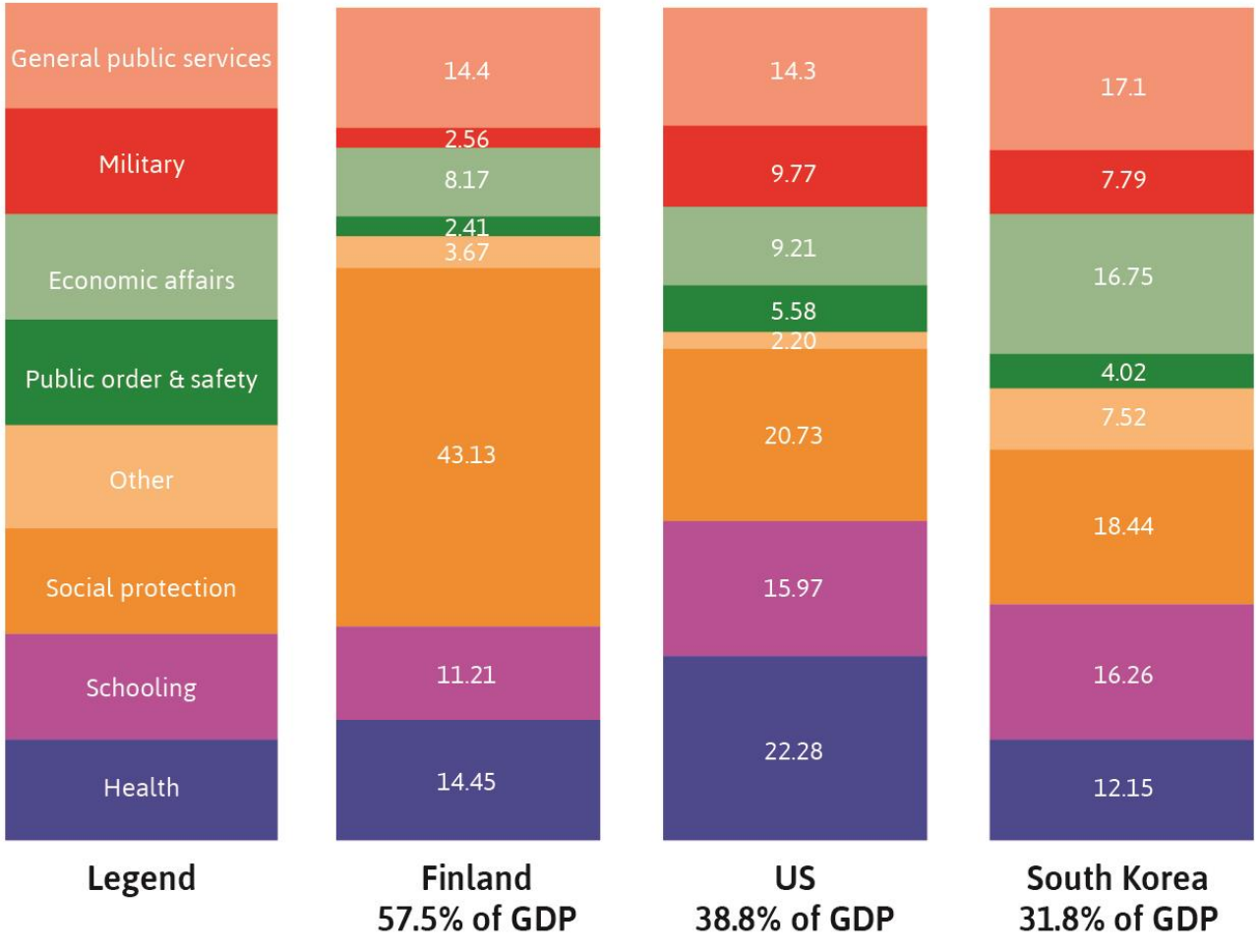
Role of government – taxation



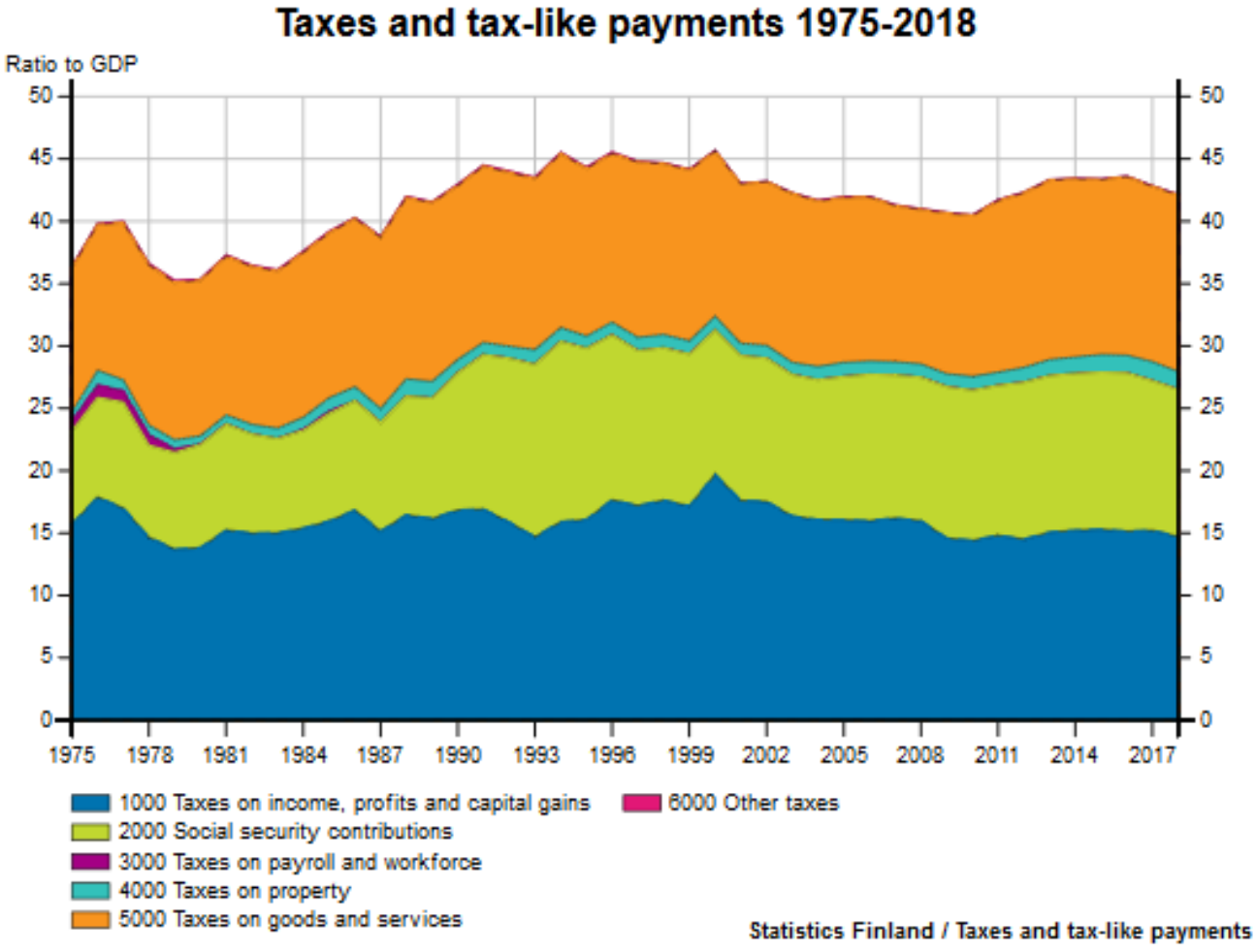
Role of government – spending



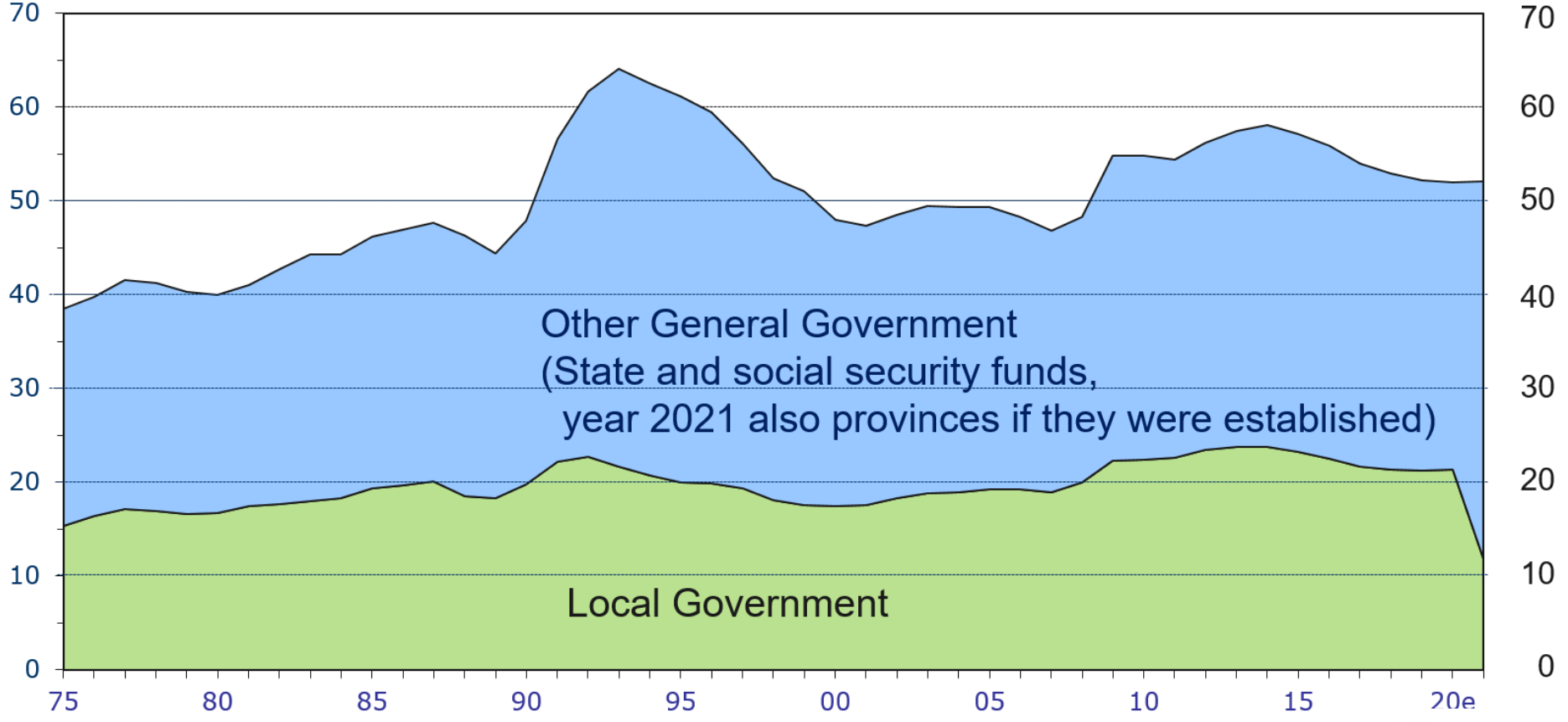
Government priorities



Taxes and tax-like payments in Finland



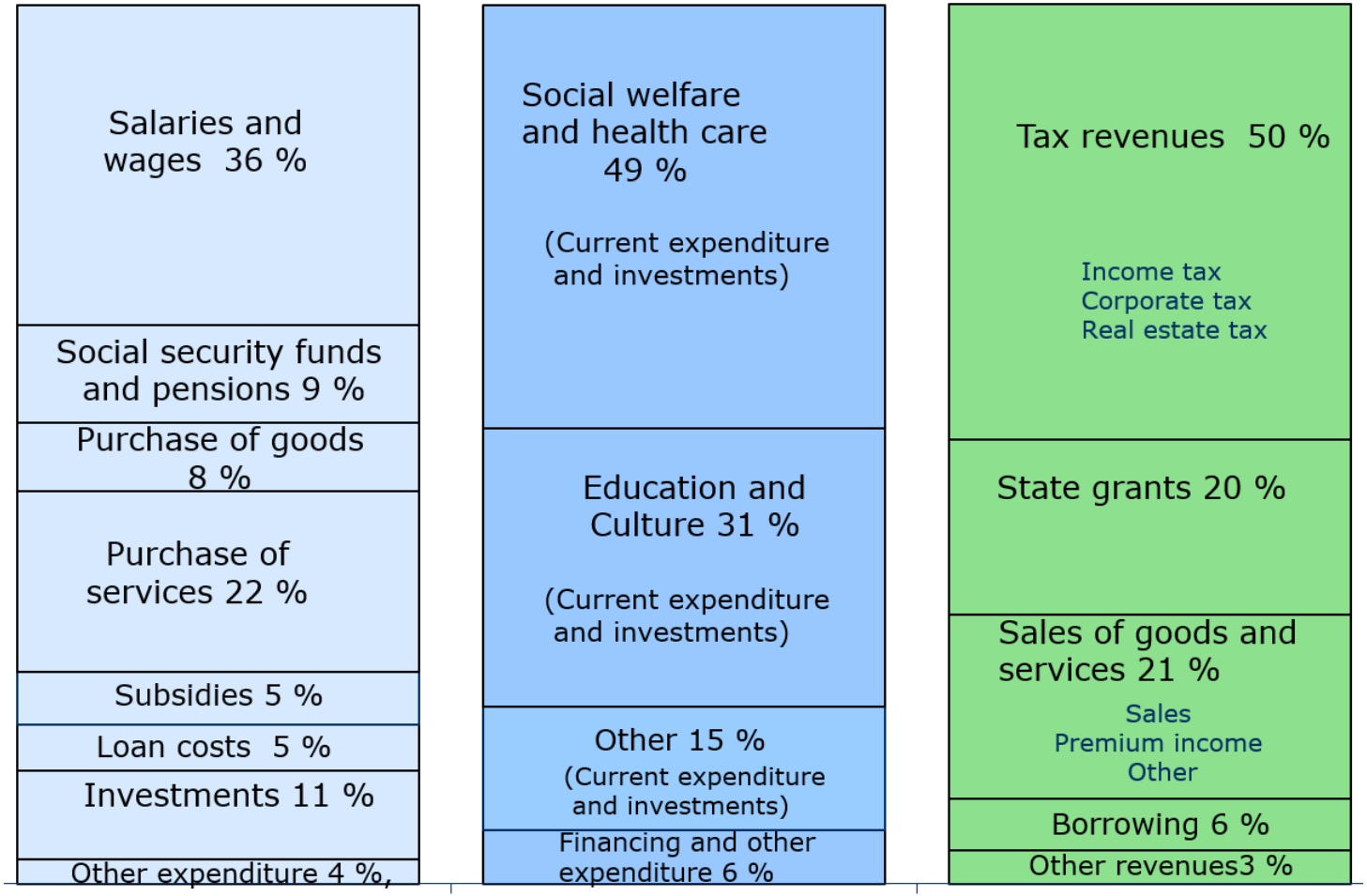
Central and local governments, ratio to GDP



Source: Years 1975-2017 Statistics Finland, Forecasts Ministry of Finance

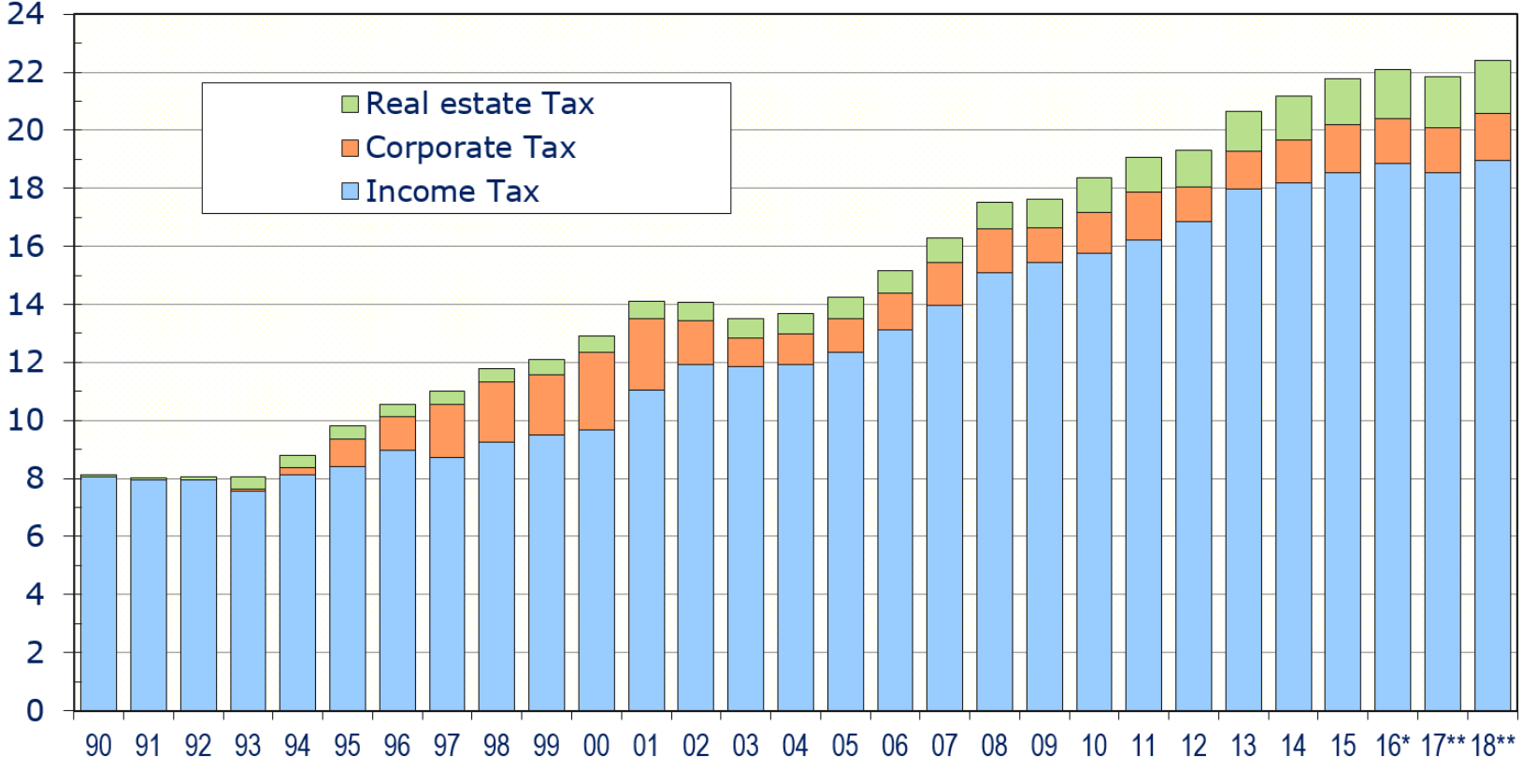
Local and Regional Government Finland

Local governments, billion EUR



Local and Regional Government Finland

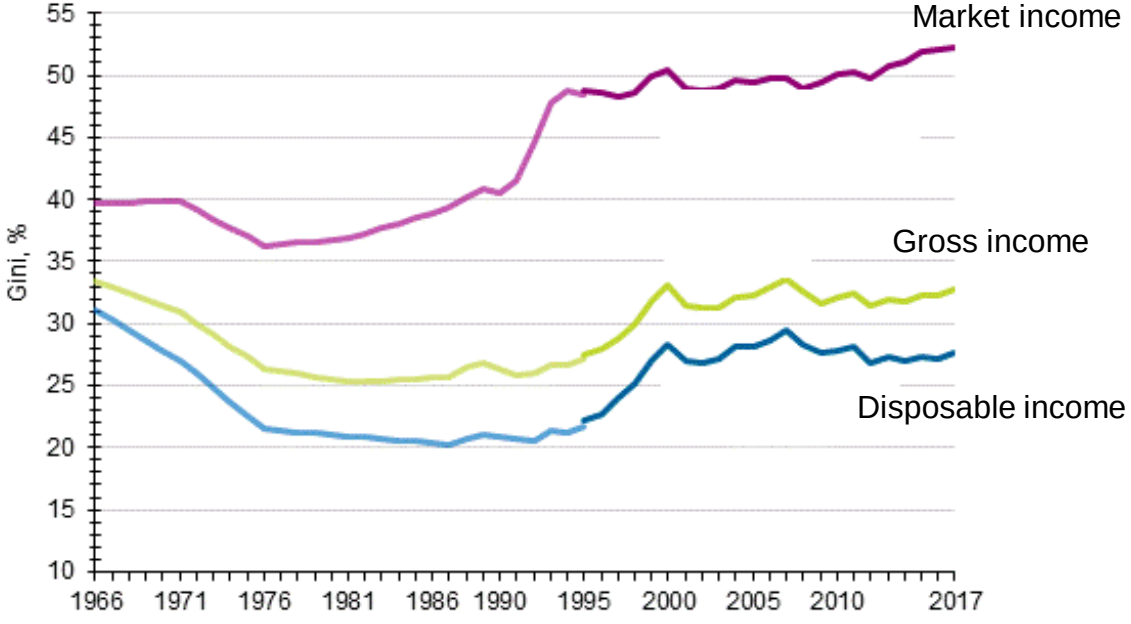
Local government tax revenue, billion EUR

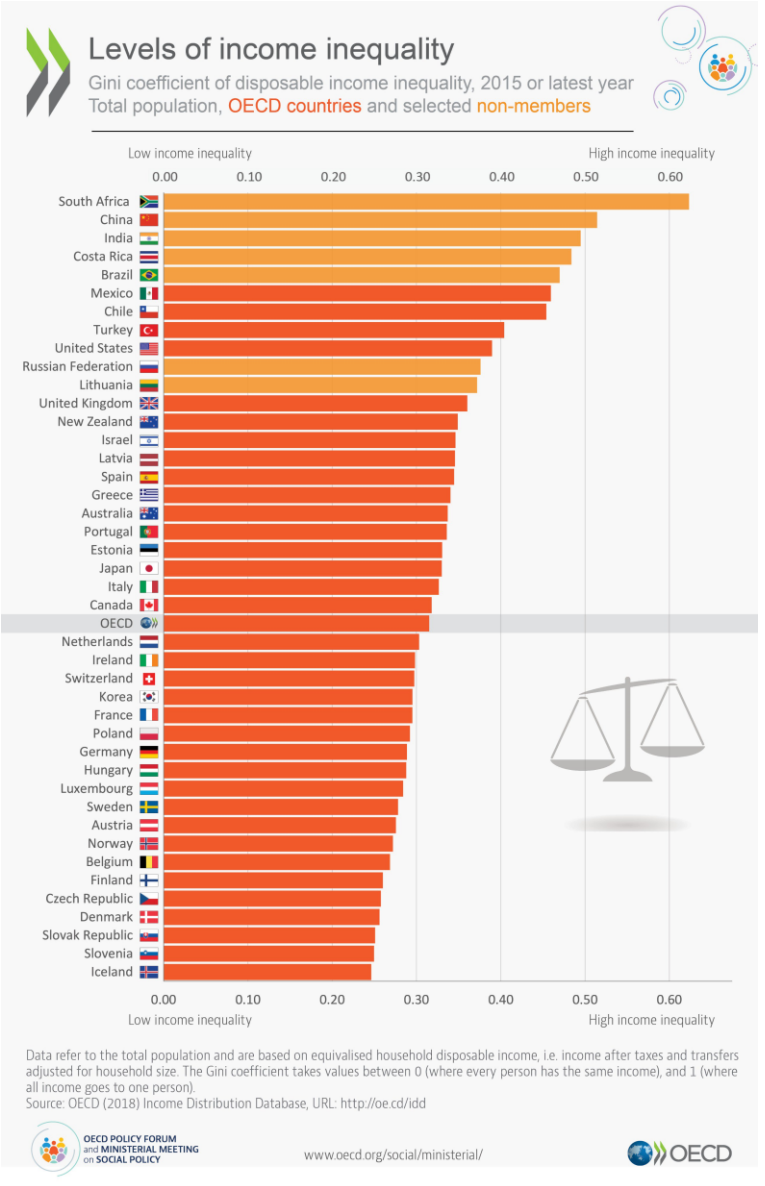


Source: 1990-2016 Statistics Finland. Years 2017-2018 forecasts Ministry of Finance

Local and Regional Government Finland

Redistribution





Designing a tax system

How should we evaluate tax policy?

- **The aim of a tax system is to raise revenue for the government, but there are many ways to raise a given amount**
  - VAT, income tax, property or a land tax, corporate tax etc.
- **In designing a tax system, policy-makers have two objectives:**
  - Efficiency and equity

Taxes and efficiency

- **One tax system is more efficient than another if it raises the same amount of revenue at a smaller cost to taxpayers and the government**
- **There are two costs that a well-designed tax policy tries to avoid (given the revenue and equity concerns)**
  - Deadweight losses that result when taxes distort the decisions that people make (e.g. commodity tax in Principles I)
  - Administrative costs that that taxpayers bear as they comply with the tax laws

Why do we use distortive taxes?

- **We could collect all tax revenue using lump-sum taxes that do not affect taxpayers' behavior**
  - In Finland, we collect roughly EUR 100 billion in taxes => could collect this through a lump-sum tax of €24,000 from everyone in the labor force
  - This tax does not create deadweight losses
- **If all people were identical, this would be the optimal way to tax, but people are not identical**
  - Some people have higher earnings abilities than others
  - People would find this type a tax unfair

Why do we use distortive taxes?

- **If the government was able to observe earnings ability, it could levy lump-sum taxes that would differ according ability**
  - This tax would also be a lump-sum tax!
- **The government cannot observe ability and it must resort to taxes that are based on observable actions of taxpayers**
- **Use of distortive taxes is an unavoidable consequence of two things:**
  - People's desire to redistribute income and
  - Governments inability to perfectly observe taxpayers' attributes
- **These questions are analyzed in the optimal taxation literature**

Taxes and equity

- **Benefits principle**
  - People should pay taxes based on the benefits they receive from government services
- **Ability-to-pay principle**
  - Taxes should be levied on a person according to how well the person can shoulder the burden
  - Horizontal and vertical equity

Horizontal and vertical equity

- **Horizontal equity:**
  - If taxes are based on ability to pay, then taxpayers with similar ability to pay should pay similar amounts of taxes
- **Vertical equity:**
  - If taxes are based on ability to pay, richer or higher income taxpayers pay more taxes
  - But how much more should the high-income taxpayers pay?
  - This is the central issue in many public discussions over taxes
  - This a value judgement and economics cannot provide an answer
  - Tax incidence is an extremely important issue here

Progressivity

	Proportional		Regressive		Progressive	
Income	Amount of tax	Tax rate	Amount of tax	Tax rate	Amount of tax	Tax rate
€50,000	€12,500	25%	€15,000	30%	€10,000	20%
€100,000	€25,000	25%	€25,000	25%	€25,000	25%
€200,000	€50,000	25%	€40,000	20%	€60,000	30%

- **Note that under all taxes in the table, the high-income people pay more taxes**

Mirrlees' review (2011) recommendations

1. **Consider the system as a whole, not all taxes need to address all objectives**
   - Not every tax needs to be 'greened' to tackle climate change as long as the system as a whole does so
   - Not all taxes need be progressive as long as the overall system is
   - In general, the right tools for achieving distributional objectives are direct personal taxes (income tax) and benefits
   - Since the rates on these can be adjusted to achieve the desired degree of progressivity, other aspects of the tax system can be focused on achieving efficiency

Mirrlees' review (2011) recommendations

2. **Seek neutrality**
   - Treats similar economic activities in similar ways => less distortions and simpler tax system
   - But remember that sometimes it is efficient to discriminate between different activities: for example activities that damage the environment (Pigouvian taxes)
3. **Achieve progressivity as efficiently as possible**
   - One cannot tax the rich, or top up the incomes of the poor, without affecting behaviour
   - But one can design the system carefully to minimize the efficiency loss associated with achieving progressivity

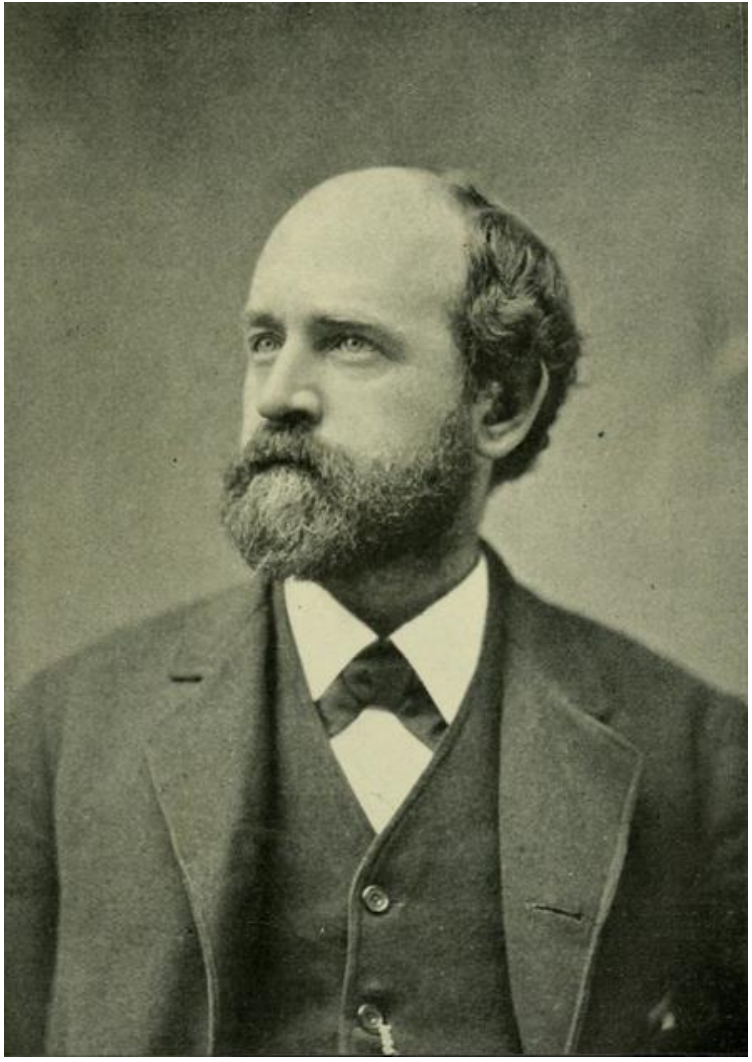
Examples

Land tax

The 19th century American economist Henry George argued that the government should raise all its revenue from a tax on land value

- Most economists agree that the land tax is particularly good, although few think that it should be the only tax
- Why is the land tax so popular among economists?

We can think about the land tax in terms of its incidence and deadweight loss



Determination of land value

How is land value determined?

- Consider a lot zoned for housing
- How much would you be willing to pay for it?

Land value depends on the demand for housing at this location

- Land value is equal to the net present value of rental income received from the building

Determination of land value

Value of a Land Parcel

Net Rent in Year 2

$$V_L = \frac{R_1}{(1+i)} + \frac{R_2}{(1+i)^2} + \frac{R_3}{(1+i)^3} + \frac{R_4}{(1+i)^4} + \cdots$$

Discount Rate

$$= \sum_{t=1}^{\infty} \frac{R_t}{(1+i)^t} \approx \frac{R}{i}$$

Assumes *R* is constant over time

Land tax – incidence

- **Introducing a property tax gives us:**

$$V'_L = \frac{R_1 - T_1}{(1+i)} + \frac{R_2 - T_2}{(1+i)^2} + \frac{R_3 - T_3}{(1+i)^3} + \cdots$$

$$V'_L = \sum_{t=1}^{\infty} \frac{R_t - T_t}{(1+i)^t} \approx \frac{R}{i} - \frac{T}{i}$$

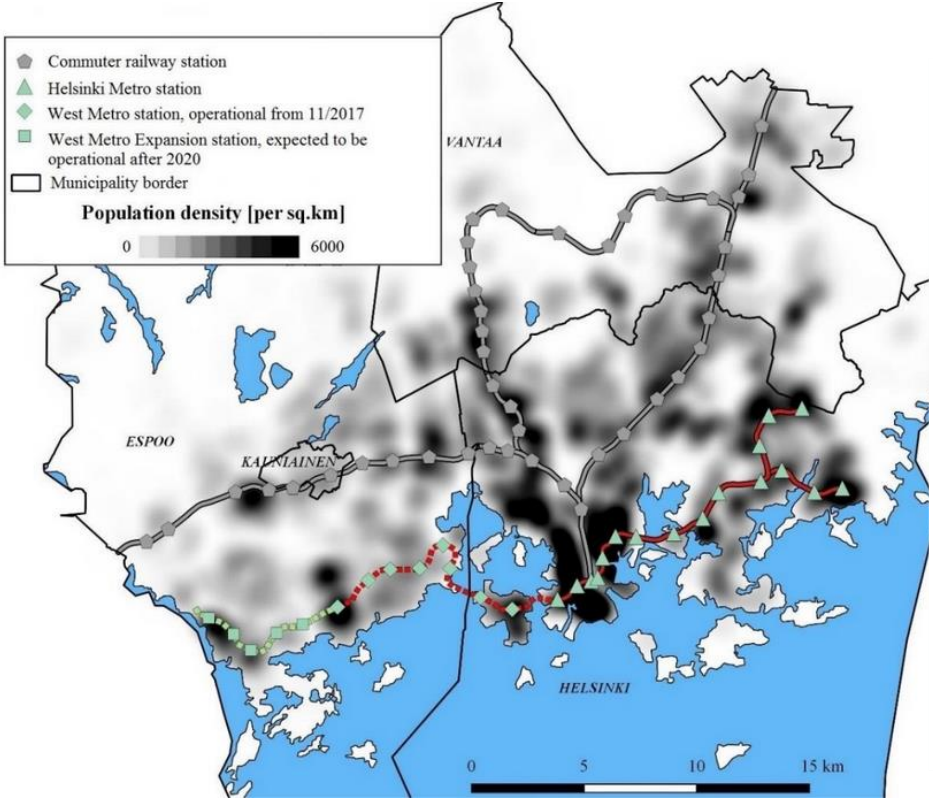
$$V_L - V'_L = \frac{T}{i}$$

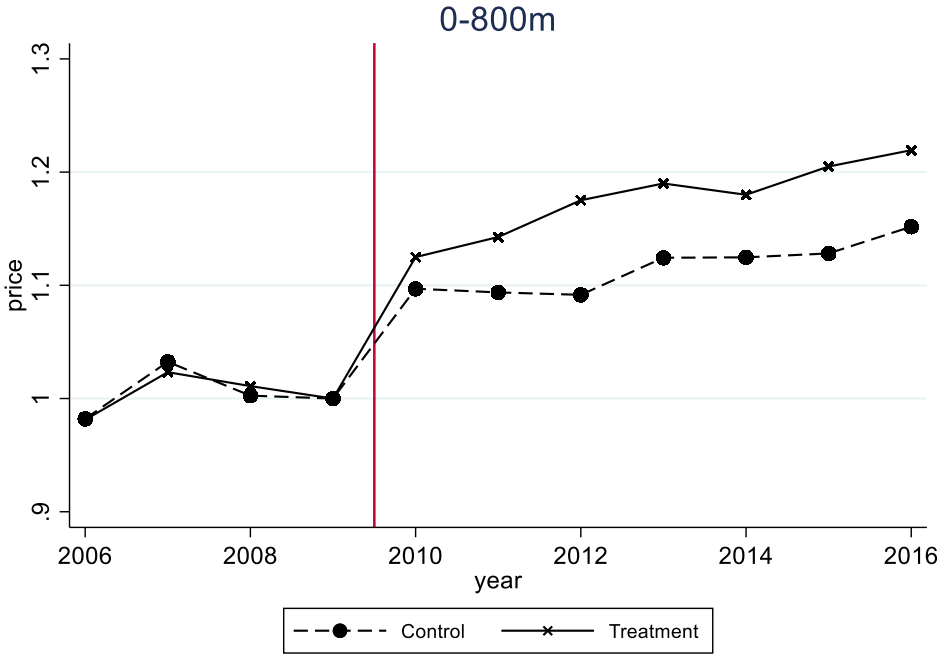
- So land value goes down immediately by the net present value of future tax payments when the tax is introduced, and the landowner bears the total burden of the tax (why does R remain the same?)

Land tax – deadweight loss

- **Land supply is totally inelastic and the optimal use for the lot does not change when the land tax is introduced or increased**
- **The land tax has no effects on the incentives of landowners, and thus, it has no deadweight loss**
  - If a ten-storey apartment building was the most profitable use of the lot, it remains so even after the land tax

Land tax as a benefit tax





Source: Harjunen 2019

Land tax as a benefit tax

- **Land value is determined by locational attributes**
  - Accessibility, local amenities and disamenities
  - Many of these attributes are created by the public sector: roads, public transit
- **When the local government invests, say, in public transit land values go up in areas where accessibility increase**
  - The land tax automatically taxes some of this benefit back to the taxpayers who funded the local investment
  - Those who benefit from the investment pay for it
- **This is why the land tax is especially useful for local governments (municipalities)**

Corporate tax

- **The importance of understanding tax incidence is especially clear with the corporation or corporate tax**
  - A tax on corporate profits
- **Voters are often eager to have their taxes reduced and let the faceless corporations pick up the bill**
- **But what they forget is that *people pay all taxes***
  - The burden of the tax ultimately falls on people: owners, customers or workers
  - Which group bears the largest burden?

Corporate tax – incidence

- **Remember from Principles I: the most inelastic party bears more of the tax burden**
- **Need to ask: which of the parties involved is most elastic?**
  - In a small open economy, it could be the firm owners
  - Initially profits go down and Finland becomes a less lucrative place to invest
  - Less investment, lower capital stock => lower wages
  - Do the workers now move away from Finland?
- **Aside: can the Finnish government tax international investors like Warren Buffett by increasing the corporate tax?**

Do Higher Corporate Taxes Reduce Wages? Micro Evidence from Germany

Clemens Fuest

Andreas Peichl

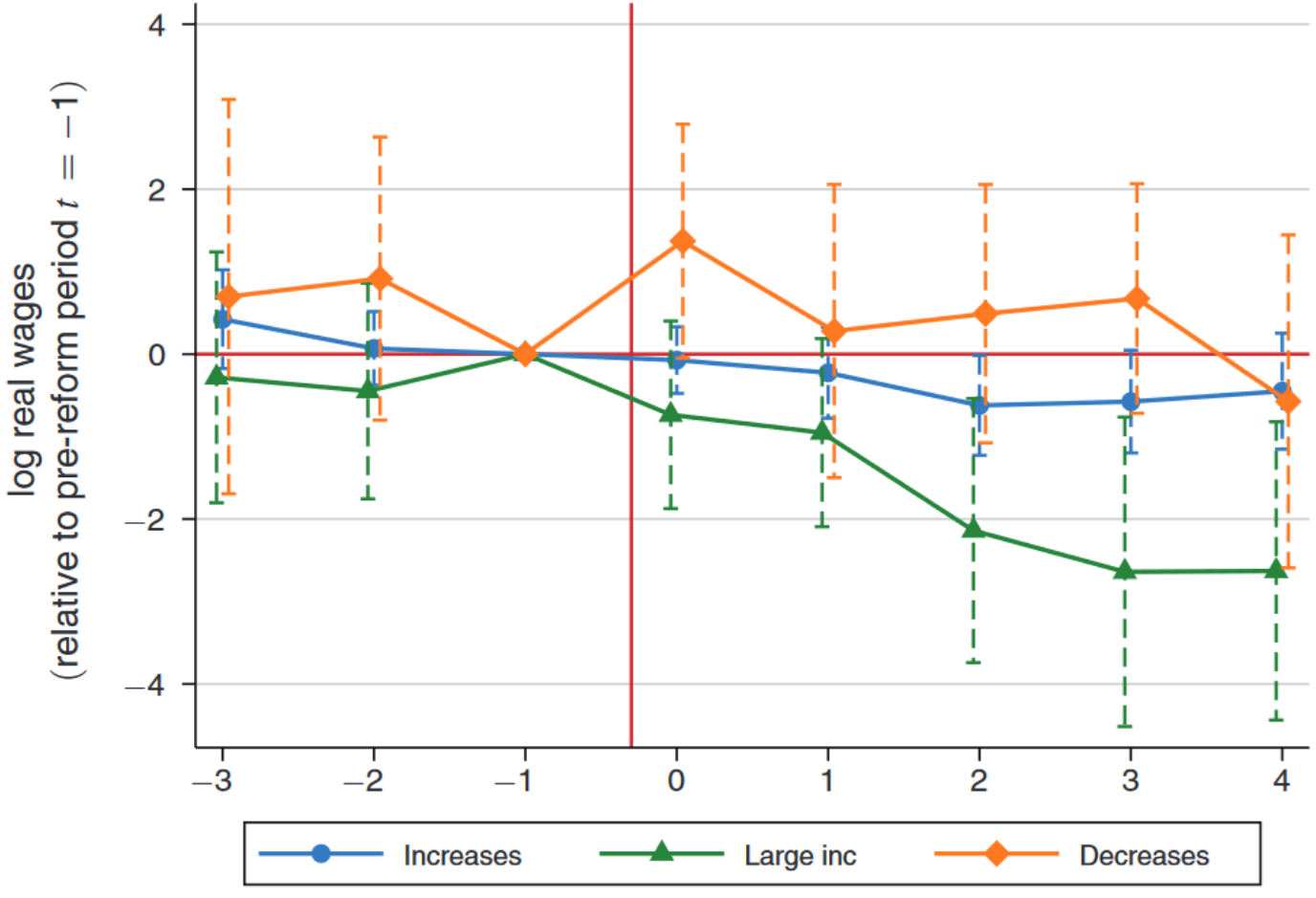
Sebastian Siegloch

AMERICAN ECONOMIC REVIEW
VOL. 108, NO. 2, FEBRUARY 2018
(pp. 393-418)

Abstract

This paper estimates the incidence of corporate taxes on wages using a 20-year panel of German municipalities exploiting 6,800 tax changes for identification. Using event study designs and difference-in-differences models, we find that workers bear about one-half of the total tax burden. Administrative linked employer-employee data allow us to estimate heterogeneous firm and worker effects. Our findings highlight the importance of labor market institutions and profit-shifting opportunities for the incidence of corporate taxes on wages. Moreover, we show that low-skilled, young, and female employees bear a larger share of the tax burden. This has important distributive implications.

Corporate tax – incidence



Why tax corporate profits?

- **Corporation tax as a benefit tax**
  - Limited liability status as major benefit
  - Sate insurance for ‘too big to fail’
- **Backstop for personal income taxation**
  - In order to escape income taxation, individuals could accumulate earnings tax-free within the corporation
  - Corporate taxation is a way to limit income tax avoidance
- **Taxation of pure profit or rents**
  - Returns that exceed the return to both labour and capital e.g., rent from extracting oil
  - Pure profit taxation does not distort investment decisions
  - Hence low efficiency cost of taxing rents

Other issues

- **There a lot of interesting questions concerning taxation that we do not have time to go into**
  - Should we tax earned income and capital income with the same tax rate? Should we tax capital income at all?
  - Should we tax income or consumption?
  - Should we tax wealth? Lively debate in the US
  - What taxes should be levied at the local level and what at the central government level?
- **These issues are covered in courses devoted to public economics**

Summary

- **The large public sectors we see currently in many countries are a relatively new phenomenon**
- **Designing a tax system (optimal taxation)**
  - Horizontal and vertical equity
  - Progressivity
  - Deadweight loss