The analysis of government intervention – (Stiglitz ch.10; Gruber ch.2)

- How does the government intervene: some comparative data
- Effects of government interventions
- ➢ the importance of design features
- ➢ evaluating efficiency and distributional effects

What have we learned up to now

A. When should the government intervene?
- Lesson of basic micro: the private market equilibrium is optimal for a market that meets the criteria of perfect competition.
- Need to ask: where is the market failure that causes a deviation from perfect competition?
- Even if there is a market failure, we only want the government to intervene if the government can make things better. Some types of intervention may be worse than the market outcome.

B. How should the government intervene?
- Often multiple options; to choose, need answer to know effects of policies.

C. What is the effect of government intervention on economic outcomes?
- Sometimes, one policy is more efficient. Example: externality with heterogeneous firms.
- Important to think about direct and indirect effects of a policy. Individuals and firms change their behavior in response to the policy. Example: free care for people without insurance.

D. Why do governments do what they do?
- This is political economy, the study of how governments behave.

Public expenditures in OECD countries

- **Public expenditures** have two main objectives: produce and/or pay for the goods and services delivered to citizens and businesses, and redistribute income. **They are sensitive to the business cycle and reflect political decisions**.

- General **government expenditures** represented on average around 42% of GDP across OECD countries in 2014. **European countries** present generally higher public expenditures on GDP than non European countries, due to their **more generous welfare system**.

- Finland (58.7%), France (57.3%) and Denmark (57.2%) reported the highest spending as a share of GDP in 2014, whereas Korea (31.8%) and Mexico (24.4%) spent the least.

- Since 2009 government expenditures as a share of GDP decreased on average by 2.5 p.p, as most EU countries cut back on expenditures.

- OECD countries display large differences in per capita gvt expenditures, ranging from USD 39 518 PPP in Luxembourg to USD 4 128 PPP in Mexico.

Total general government expenditure in OECD countries, % of GDP- Source OECD
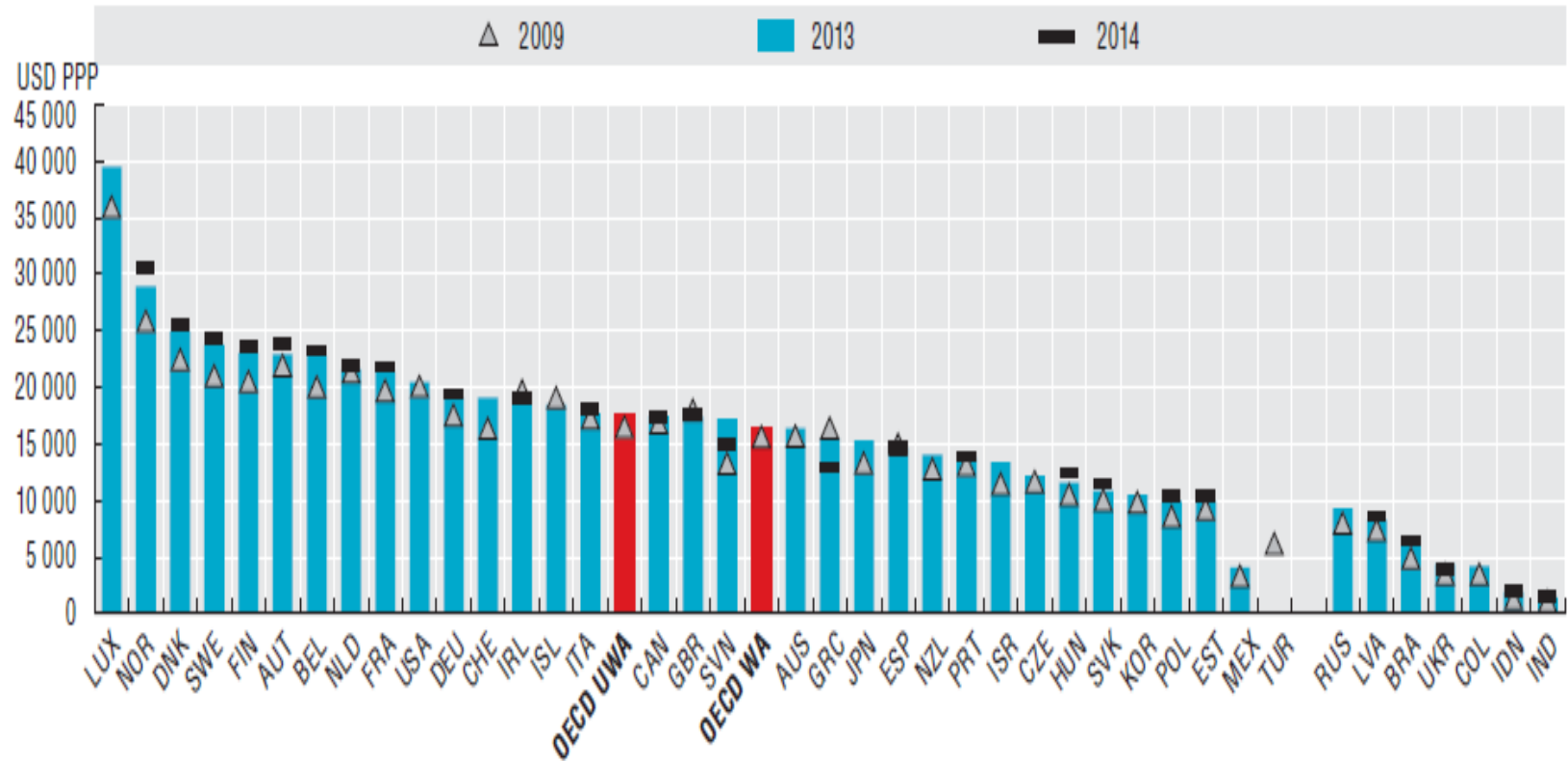
2.28. General government expenditures as a percentage of GDP, 2007, 2009, 2013 and 2014
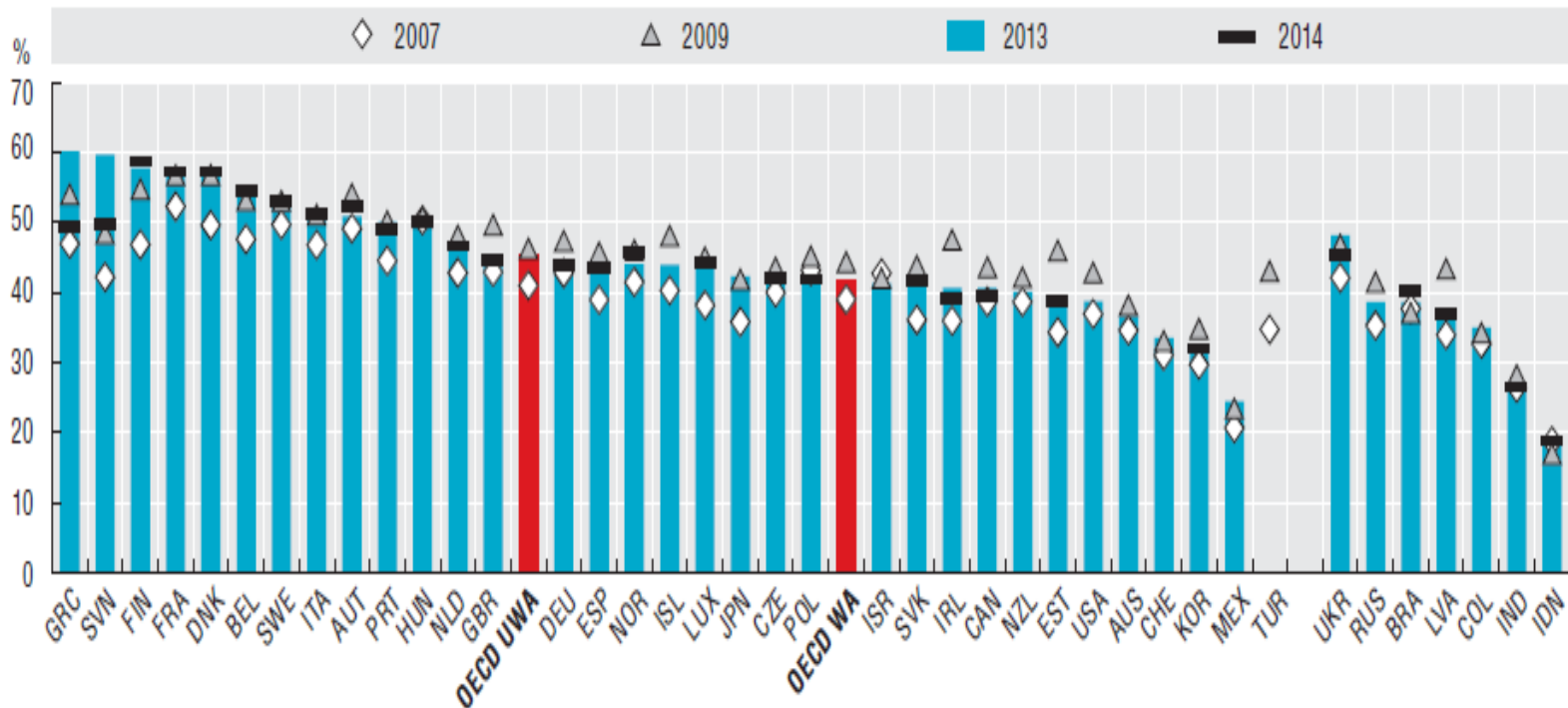
Source: OECD National Accounts Statistics (database). Data for the other major economies of Brazil, India, Indonesia and Ukraine are from the IMF Economic Outlook (April 2015).

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2.29. General government expenditures per capita, 2009, 2013 and 2014

△ 2009   ■ 2013   ▬ 2014

Source: OECD National Accounts Statistics (database). Data for the other major economies of Brazil, India, Indonesia and Ukraine are from the IMF Economic Outlook (April 2015).

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Composition and evolution of Government expenditures in EU countries

- **Social protection** is the most significant part of government expenditure in EU countries**: around 41% of total gvt expenditure and 19% of EU28 GDP (2016).**

- Nordic countries, France, Germany and Austria spend the most in social protection (over 40% of total exp.compared with 20.7% in the US). The **share of social protection expenditures increased since 1995** in all countries, except for the USA, UK and Ireland, which present small decreases. With the crisis social protection expenditure in % of GDP increased in the EU due to higher expenditure and lower GDP growth.

- The next most important functions in terms of government expenditure were **'health' and 'general public services**', amounting to 7.1 % and 6.0 % respectively of GDP in the EU-28 in 2016.

- **Education** (4.7 % of GDP) and **'economic affairs**' (4.0 % of GDP) follow.

- **Defence'** (1.3 % of GDP on average in EU countries compared to 9.8% in the US and 14.4% in Israel), '**public order and safety**' (1.7 % of GDP), '**environmental protection**' (0.7 % of GDP), '**housing and community amenities**' (0.6 % of GDP) and '**recreation, culture and religion**' (1.0 % of GDP) - together represented 5.3 % of EU-28 GDP in 2016.

Evolution of total general government expenditure, EU-28, 2006-2016, % of GDP and % of total expenditure- Eurostat

% of GDP	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
general public services	6.8	6.6	6.5	6.5	6.3	6.3	6.5	6.6	6.7	6.8	6.9	6.9	6.7	6.2	6.0
defence	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.3
public order and safety	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.7
economic affairs	4.1	4.1	4.2	4.2	4.2	4.0	4.6	4.9	5.1	4.5	4.6	4.3	4.3	4.2	4.0
environmental protection	0.7	0.7	0.7	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7
housing and community amenities	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.8	0.7	0.7	0.7	0.7	0.7	0.6
health	6.2	6.4	6.4	6.5	6.6	6.5	6.7	7.3	7.3	7.1	7.1	7.2	7.2	7.1	7.1
recreation, culture and religion	1.0	1.1	1.0	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0
education	5.0	5.1	5.0	5.0	5.0	4.9	4.9	5.3	5.3	5.1	5.0	4.9	4.9	4.8	4.7
social protection	17.5	17.9	17.7	17.6	17.3	17.0	17.5	19.4	19.3	19.0	19.4	19.5	19.3	19.1	19.1
total	45.5	46.1	45.7	45.8	45.2	44.6	46.2	50.0	49.8	48.5	48.9	48.6	48.0	47.0	46.3
% of total expenditure	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
general public services	14.9	14.4	14.2	14.1	13.9	14.1	14.1	13.3	13.4	14.1	14.1	14.1	13.9	13.2	12.9
defence	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.0	3.0	2.9	2.9	2.8	2.9	2.9
public order and safety	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.6	3.7	3.7
economic affairs	9.0	9.0	9.1	9.1	9.2	9.0	9.9	9.8	10.2	9.3	9.5	8.9	8.9	9.0	8.6
environmental protection	1.6	1.6	1.6	1.9	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.6
housing and community amenities	1.8	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.6	1.5	1.4	1.4	1.4	1.4	1.3
health	13.7	13.8	14.0	14.2	14.5	14.5	14.5	14.7	14.6	14.7	14.6	14.8	15.0	15.2	15.3
recreation, culture and religion	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.2
education	11.1	11.0	10.9	10.9	11.0	10.9	10.7	10.5	10.5	10.5	10.2	10.1	10.2	10.2	10.2
social protection	38.4	38.7	38.8	38.5	38.3	38.2	37.8	38.8	38.8	39.2	39.6	40.1	40.3	40.6	41.2

How to analyse and evaluate public expenditure programmes

1. Identify the need for a programme
2. Identify the market failure if present (efficiency reason for intervention) and/or a relevant issue in relation to income distribution or a merit good (equity reason for intervention)
3. Identify alternative programmes which might address the perceived problem
4. Evaluate the possible impact of alternative programmes, considering:
   - design features
   - private sector responses
   - efficiency and distributional consequences of alternative programmes and their trade offs
5. Evaluate the political process at the basis of decision making, policy design and implementation

The importance of design features/1 Alternative forms of government intervention

- **Government regulation** of: quality, quantity and prices
- **Public provision**: free distribution (ex. compulsory education), distribution at below the cost of production (health or higher education), distribution at cost (electricity)
- **Public financing of private provision:** as for example reimboursement of private insurers for specific groups of population
- **Government transfers** (affect income) **or subsidies /taxes** (affect prices) on producers and/or consumers.

The importance of design features/2 Defining eligibility standards for transfer or subsidies

- **How broad should eligibility standards be**?

Trade off:

   a) Too narrow: risk of excluding somebody in need;

   b) Too broad: risk of supporting those not in need

- In addition, **risk of altering individuals'/firms behaviour in order to gain eligibility or receive larger benefits** (e.g. the so called indirect effects of gvt intervention)

Ex. a) **Food stamps** aimed only at lone mothers may discourage marriages among low income groups;

   b) **Unemployment benefits** may discourage low wage individuals to accept jobs until the end of the benefits;

   c) **Employment subsidies** related to certain categories of workers may induce firms to hire only eligible workers and lay off non eligible ones

The importance of design features/3 Defining forms of erogation

- **Monetary transfers:** produce income effects
- **Specific transfers** (in kind or targeted to the purchase of specific goods/services) : produce substitution effects

According to economic theory monetary transfers should be preferred to in kind or targeted transfers because they leave more freedom of choice to individuals and do not alter marginal incentives.

BUT in **some cases (education, health services, etc.)** in kind transfers are preferred because they guarantee reaching a certain level of consumption, since:

- These services are considered merit goods (paternalistic government)
- There are positive externalities
- Specific egualitarism (all citizens have the right to access to basic goods/services: health, education, etc.)

The importance of design features/4 How to fund government programmes?

- **Social contributions on labour costs**, usually to finance programmes related to the labour market and based on insurance approach (unemployment benefits, sickness, pensions, ..)

- **General Taxation**, usually to finance programmes aimed at all citizens to cover citizenship rights andn public goods (defence, health, education, minimum income and anti-poverty programmes, large infrastructures, etc.)

- **Participation to costs** (user fees), usually to finance programmes aimed at specific targets that may pay for them and to reduce the risks of moral hazard (infrastructures, health insurance, kindergarten,…)

Government revenues in OECD countries

- **Government revenues** derive from taxes, social contributions, property income, payments for public services/products / infrastructures

- **Scandinavian countries** (Sweden, Norway, Denmark and Finland) and **France** present the highest absorption of GDP by government (between 50 and 60% of GDP) to pay for the generous welfare expenditures. On the other side, the US, Greece, Japan and Mexico present the lowest absorption.

- **Taxes** represent **more than half of general government revenue** in all OECD countries. Eastern and continental European countries tend to use social contribution to a larger extent than other countries.

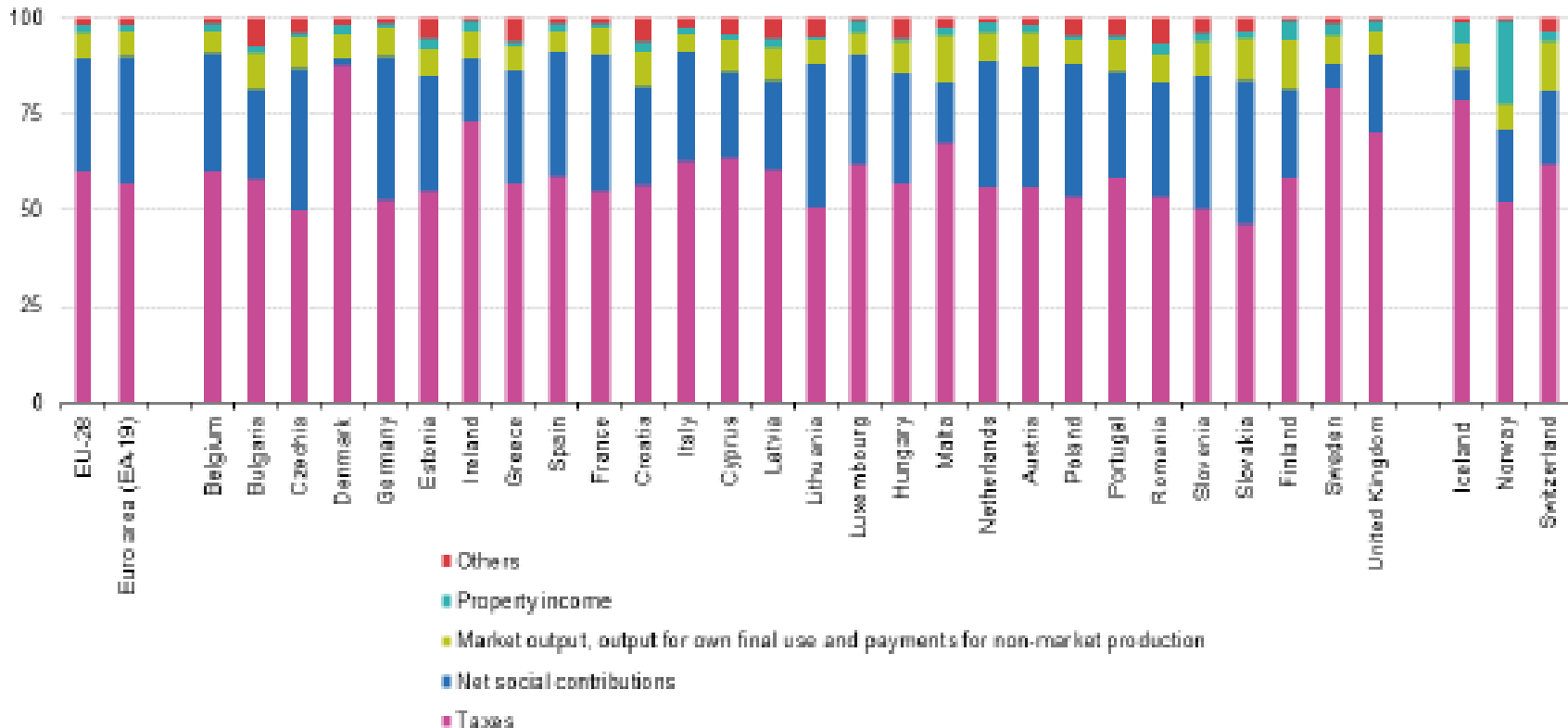# Total tax revenue by Member States and EFTA countries, 2016 and 2017, % of GDP

Total tax revenue by Member States and EFTA countries, 2016 and 2017, % of GDP
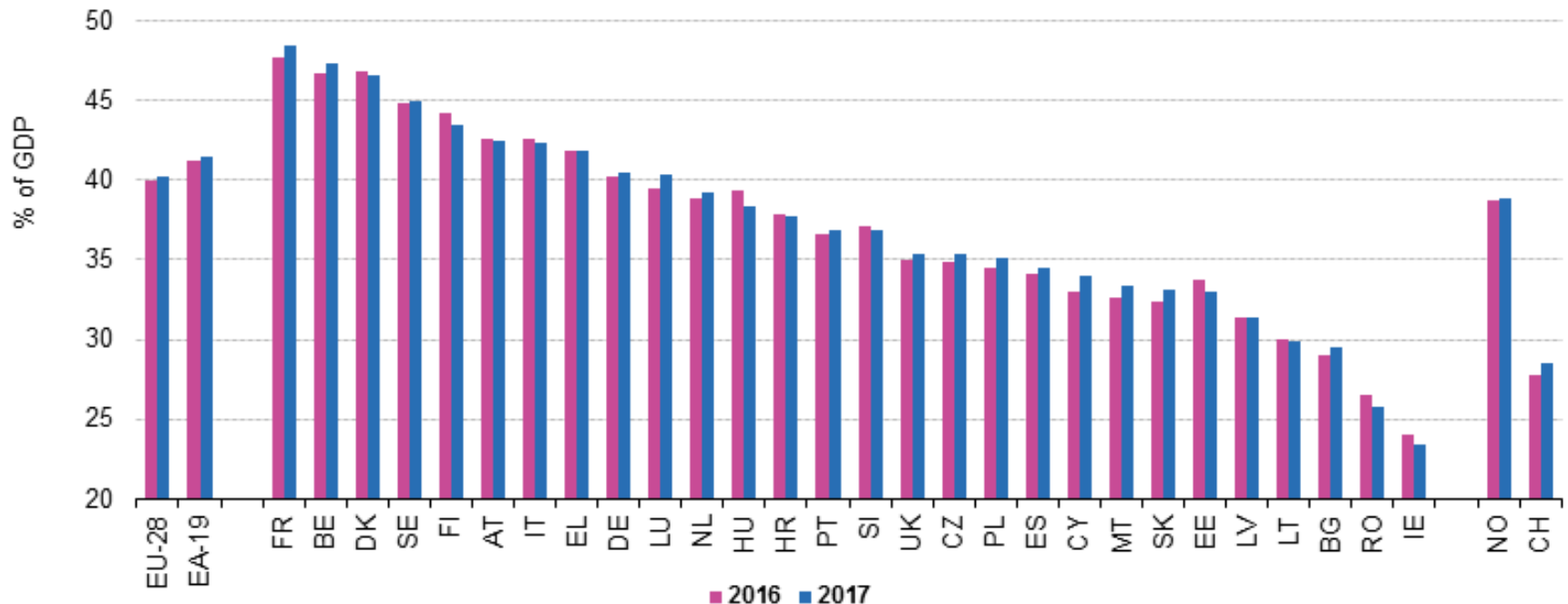
Source: gov_10a_taxag

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Main components of government revenue, 2017 (% of total revenue) - Source: Eurostat

Main components of government revenue, 2017 (')

(') Data extracted on 22.10.2018.
Source: Eurostat (online data code: gov_10a_main)

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Evaluating the efficiency effects of public programmes

- Need to consider:
  - **Crowding out effects**
  - **Substitution and income effects**
  - **Deadweight losses**

  - **Marginal incentive effects,** which may be very different even in programs with the same average subsidy.
  - **Short run and long run effects**
  - **Direct and indirect effects** in order to assess the real incidence of public policies

Effects of public programmes: crowding out

- Public intervention may **crowd out** private intervention and reduce the impact of programmes.

- Examples:
  - Public pensions may discourage individuals to save for retirement
  - Rent controls may reduce in the long run the supply of new housing

Substitution and income effects

➢ **Substitution effects**: when public programmes reduce the relative price of a commodity/service (as in the case of specific **subsidies/taxes**) consumers substitute the cheaper commodity/service for other goods. Examples: tuition subsidies for higher education or food stamps; taxes on cigarettes, petrol,..)

➢ **Income effects**: public **grants or transfers** (for example unemployment benefits) which do not affect the relative prices of different commodities, result in income effects.

■ **Inefficiency (deadweight loss) is associated with substitution effects**, because policies acting on relative prices directly affect the market performance. Deadweight loss: the loss of consumer and/or producer surplus due to departures of prices from marginal costs.

■ In some cases (merit goods) the government may **want** to affect relative prices and marginal incentives.

Example: Income effects of monetary transfers on Sam consumption choices

Qa (vertical axis)

Qb (horizontal axis)

Points labeled: D, E, U1, U0
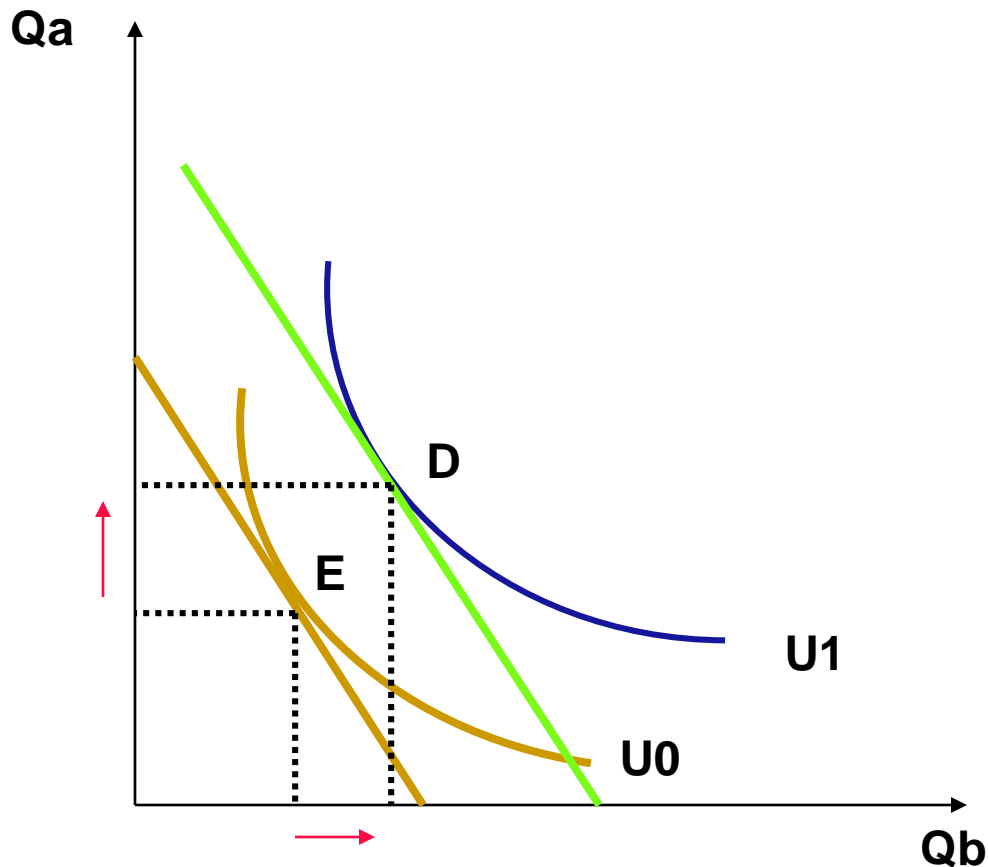
Sam receives a **monetary transfer** from the government (for example unemployment benefits), as a consequence his budget constraint shifts up, maintaining the same slope because relative prices of the goods he wants to consume do not change.

There is an **income effect** as Sam is able to consume more of both goods because he is richer. **The income effect is represented as a move from point E to point D.** We will see that this income effect may also reduce Sam labour supply, as he will be less prone to accept available jobs for the duration of the unemployment benefits.

Example: Income and substitution effects of tax on goods on Sam consumption choices

Qa

D

E₁ **E₀**

U₁

U₀

Qb

Income effect   **Subst. effect**
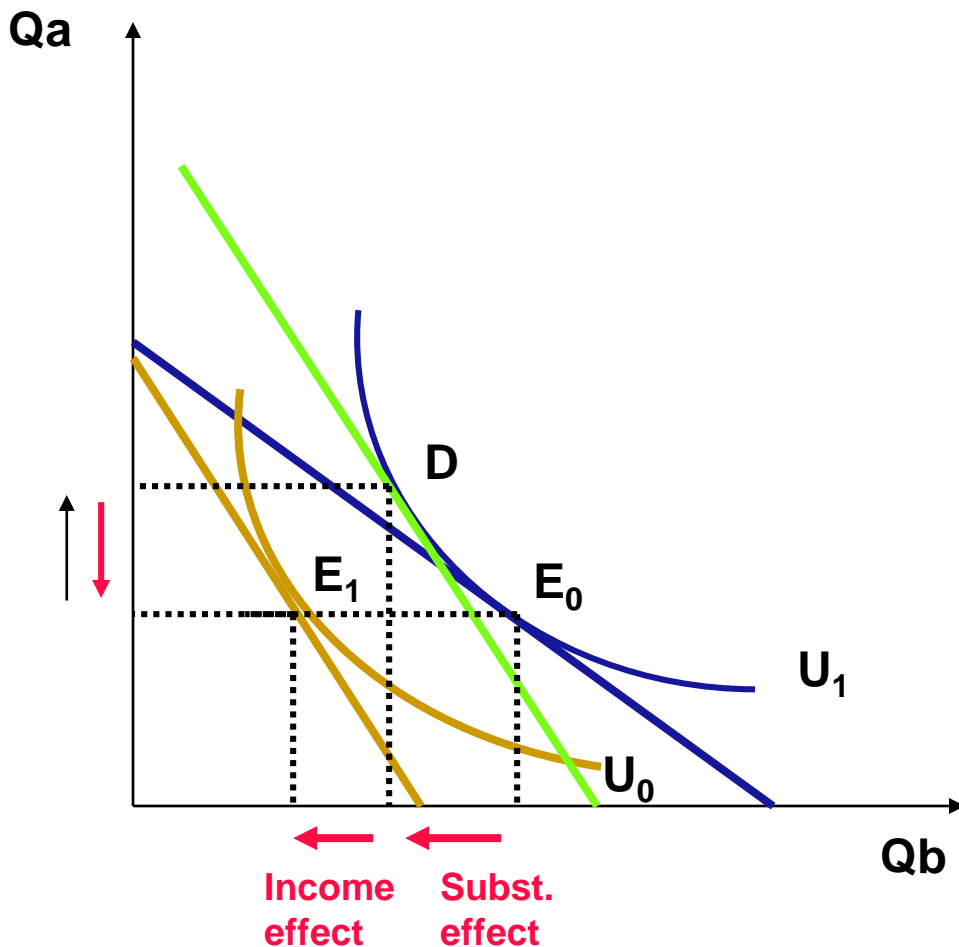
Sam initial equilibrium is at E_0.
A tax on good B increases its price with two effects.

- **First**, holding utility U_1 constant, there is a **substitution effect**, which causes Sam to reduce the consumption of good B, because it is now more expensive than good A. The substitution effect is represented as a move **from point E_0 to point D** on the initial indifference curve U1.
- **Second**, holding relative prices constant, there is an **income effect**, which causes Sam to demand less of both goods because he is poorer. The income effect is represented as a move **from point D to point E_1** on the lower indifference curve U_0.

The two effects result in a **reduction in Sam demand for good B,** while the **final demand for good A depends on the relative weight of the SE and IE effects**:

- **SE>IE** the demand for good A increases,
- **SE<IE** the demand for A decreases,
- **SE=IE** (as in the graph) the demand for A does not change.

Distributional consequences of public policies: Incidence of public policies/1

- The Incidence of a government expenditure or tax considers **who really benefits from, or is hurt by, or bears the costs of the programme or tax**. The actual incidence may be different from the intended one.

- The **incidence** may be different in the short and in the long run, since **in the short run price effects prevail on quantity effects**, which take a longer time to take place.

- When evaluating the distributional consequences of a public programme or tax it is important to evaluate its impact on different groups of population and to assess if its distribution effect is **progressive** (i.e. the poor receive more than their contribution to the costs of the programme) or **regressive** (the poor receive less that their contribution to the cost of the programme) .

Distributional consequences of public policies/2

- Examples:

a) *Housing subsidies*: in the **short run** the main effect is to increase the price of housing, since the demand increases, while the supply is rather unelastic in the short run. In the **long run**, however the supply of new housing will increase and contain price increases. Hence in the short run the subsidy mainly benefits current owners of houses, in the long it also benefits renters.

b) *Subsidies to support a new subway*: the effect is to increase the value of areas and houses near the subway, so the beneficiaries are property owners near the subway lines. Commuters are better off because of improved transportation services, but worse off because of higher housing rents in areas close to the subway.

c) *Health care support for the elderly*: the programme beneficiaries are not only the elderly, but also their children (especially women) which do not have to support their elderly privately (public expenditures crowds out private ones)