

Introduction to GLO375 Political Economy of the Public Sector



Some of the main topics

- What is public sector?
- Why do we need one?
- What public sector does?
- Taxation
- Inequality
- Managing the public sector.



Public Economics

Definitions and more

Political Economy

Political economy: Branch of social science that studies the relationships between individuals and society and between markets and the state, using a diverse set of tools and methods drawn largely from economics, political science, and sociology. (Brittanica)

The term political economy is derived from the Greek *polis*, meaning “city” or “state,” and *oikonomos*, meaning “one who manages a household or estate.”

Political economy thus can be understood as the study of how a country—the public’s household—is managed or governed, taking into account both political and economic factors.

The Economic Problem

The **economic problem** asserts that an economy's finite resources are insufficient to satisfy all human wants and needs. It assumes that human wants are unlimited, but the means to satisfy human wants are scarce.

Four questions emerge:

- What to produce?
- How to produce?
- For whom to produce?
- How are these decisions made?

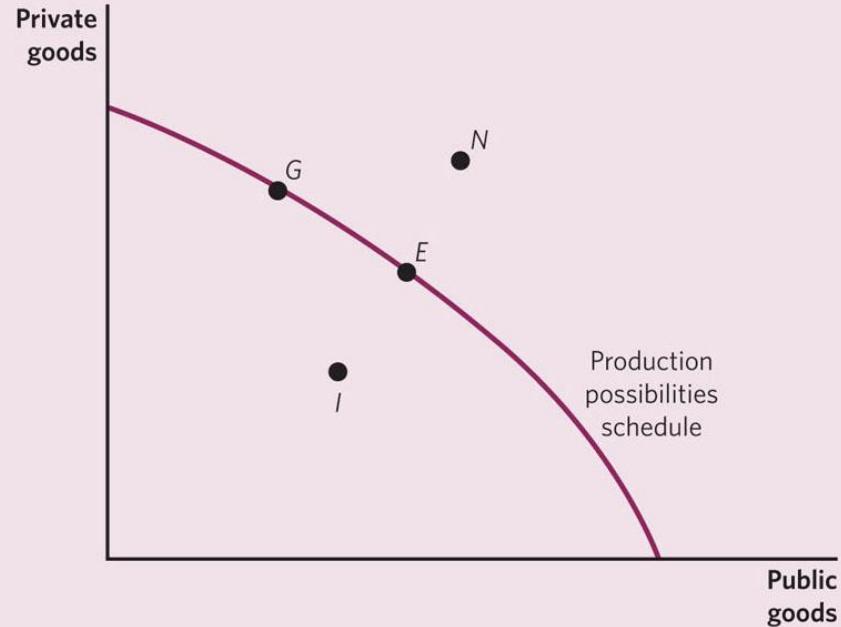
Economics deal with these questions

Public economics study the role of government in the economy. In other words, the role of government in answering these questions.

What to produce?

How much of our resources should we devote to the production of public goods such as defence and highways and how much to the production of private goods such as cars, TV sets and video games?

FIGURE 1.1



Copyright © 2015, W. W. Norton & Company, Inc.

G → E: Public goods are increased but private goods decreased.

I: Inefficient – More private and public goods can be produced

N: Infeasible – Not possible, given the current resources and technology

How to produce?

- Private vs Public Production
- Capital vs Labour intensive production
- Shall we use energy-efficient technologies?



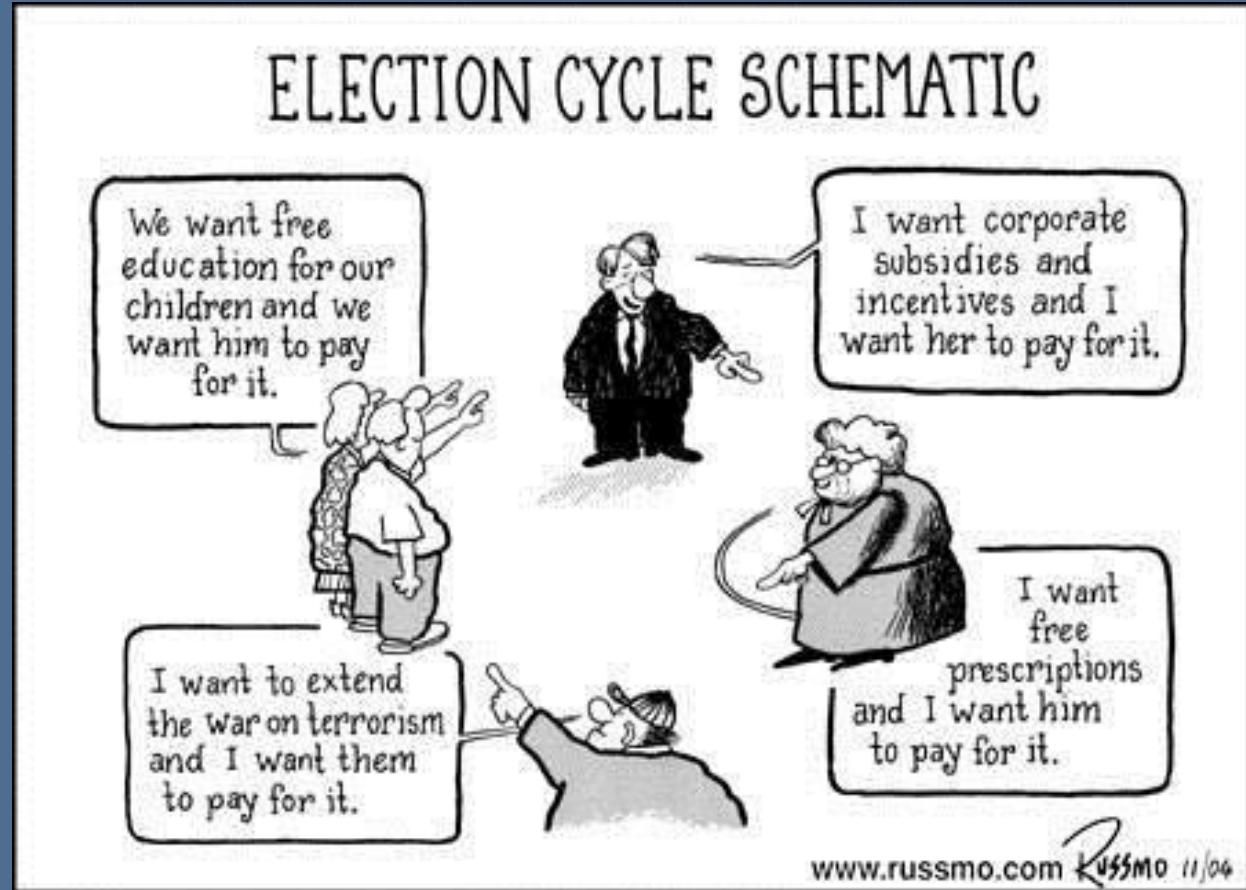
For whom to produce?

- The question of distribution.
- Taxation and welfare programs affect the disposable income of different individuals.
- Different groups benefit from the production of different public goods.



How are these decisions made?

- Public Choice
- In the public sector, choices are made collectively
- Collective decision making is far more complicated



Normative vs Positive

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: 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 1st step before we can complete Normative Public Economics

→ Positive analysis is primarily empirical and Normative analysis is primarily theoretical



The Government

And its role in the economy

— Thomas Jefferson —

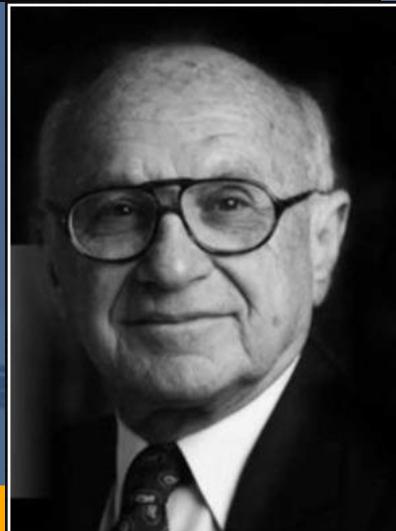


The purpose of government is to enable the people of a nation to live in safety and happiness. Government exists for the interests of the governed, not for the governors.

AZ QUOTES

The government solution to a problem is usually as bad as the problem.

— Milton Friedman —



AZ QUOTES

What is Government?

Three branches

- Stabilization
- Allocation
- Distribution

PUBLIC SECTOR

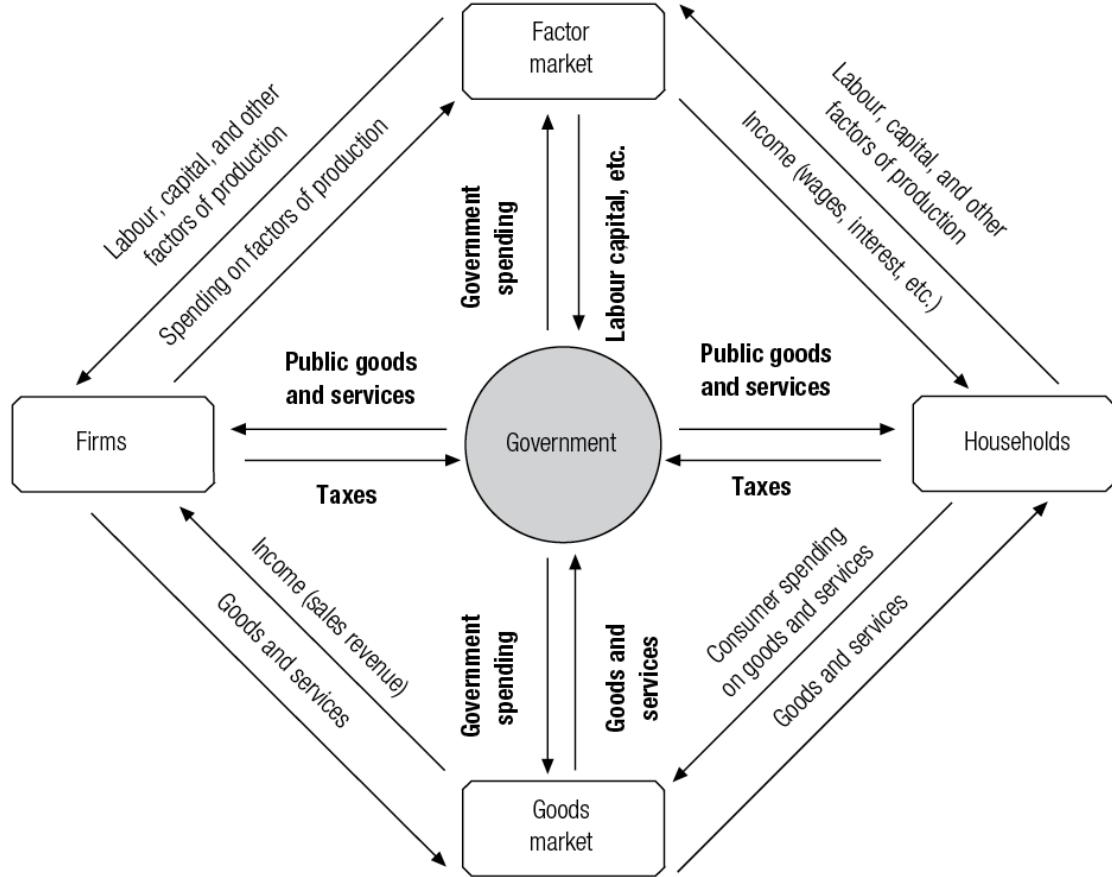
GENERAL GOVERNMENT

CENTRAL
GOVERNMENT
(e.g. government
departments)

Local government
Provincial government

Public enterprises or corporations

Government in the economic system





Government provides the legal framework

In other words, sets the rules of the game... and enforces them!

Four categories of economic activity for the government

Production of goods and services



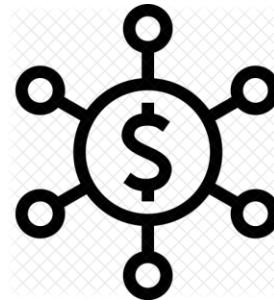
Purchase of goods and services



Regulation and subsidization or taxation of private production



Redistribution of income



Production of goods and services

- Governments undertake certain types of production directly
- Differs from country to country
- **Privatization vs Nationalization**
- New models: GLC, PPP, PSP
- Best metric: employment



Regulation and subsidization or taxation of private production

- Three main ways to subsidize:
 - Direct payments to producers
 - Indirect payments through taxation
 - Other hidden Expenditures
- Government Credit: Special form of subsidy when below market interest rates
- Regulation e.g. Environmental Protection Agency

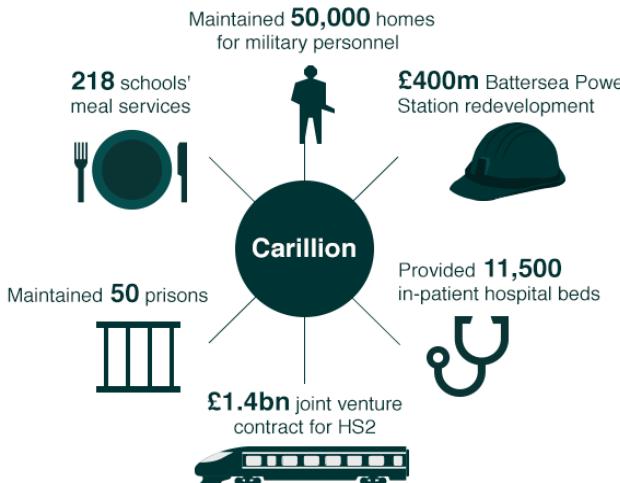


Purchase of goods and services

- Governments spend millions in purchases of goods and services



What did Carillion do?



Redistribution of income

- Public Assistance Programs (cash or in-kind benefits)
- Social Insurance Programs
- Redistribution through the tax system



Direct and indirect government intervention

- **Direct government intervention** refers to the actual participation of government in the economy.
- **Indirect government intervention** refers to the regulatory function of government.



Mixed Economies

Definitions and more

Mixed Economy



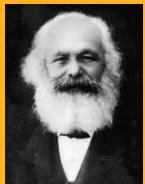
Every country in the world
(North Korea might be the exception) is a mixed economy

Mixed Economy: An economy where some economic activities are undertaken by private firms and others are undertaken by the government. The government alters the behaviour of the private sector through a variety of regulations, taxes, and subsidies.

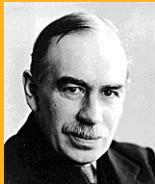
Command Economy: An economy where the government, rather than the free market, determines what goods should be produced, in what quantities, and the price at which the goods are offered for sale.

Free Market Economy: An economy where the prices for goods and services are set freely by the forces of supply and demand and are allowed to reach their point of equilibrium without any intervention by the government.

The Economic Spectrum



Marx



Keynes



Krugman



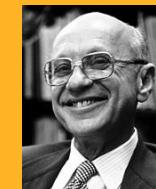
Stiglitz



Mankiw



Hayek



Friedman



Smith

Marxist

Keynesian

Neo-Keynesian

Neoclassical
Austrian School

Neoclassical
School of Chicago

Classical

Command Economy
Planned Economy
Communism

Mixed Economy
Social Democracy

Christian Democracy

Market Economy
Free Market
Capitalism



North Korea

Cuba

China

Sweden

France

Germany

UK

United States

Singapore

Size changes over time...

Deregulation

Reducing the role of government in regulating the economy.



Privatization

Turning over to the private sector activities previously undertaken by the government.



Nationalization

Turning over to the public sector activities previously undertaken by the private sector.



Measuring the size of the public sector

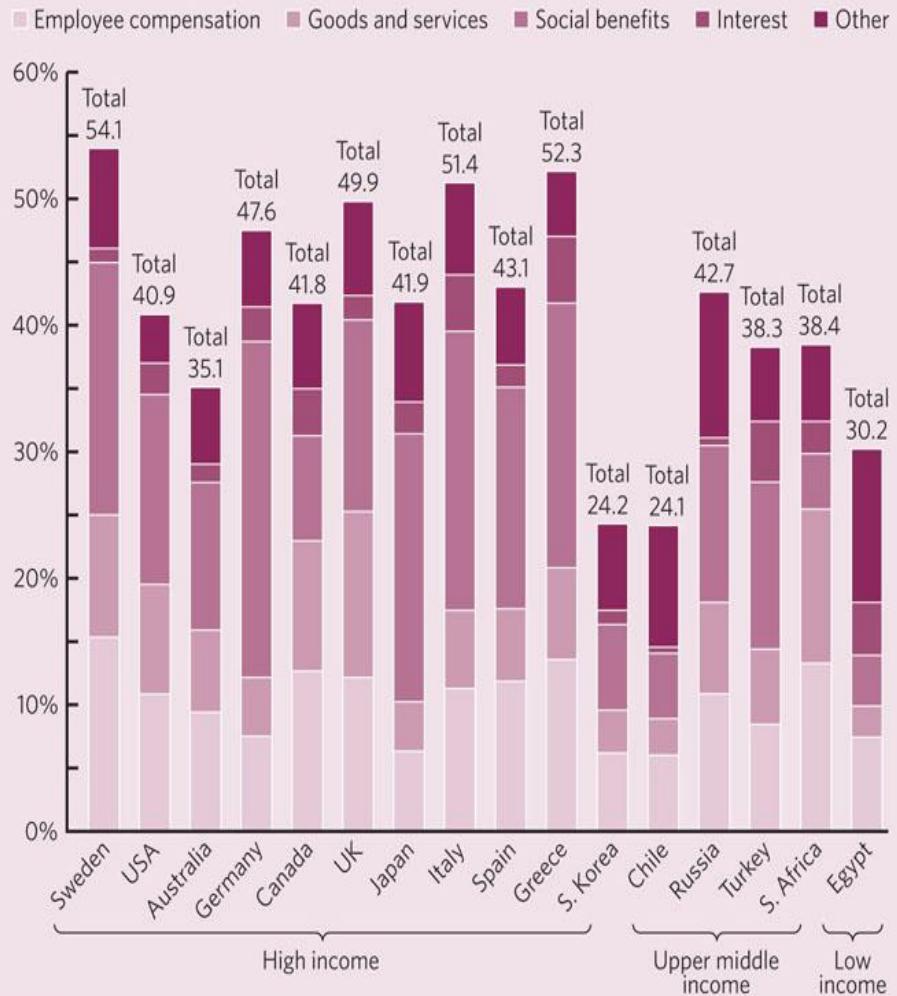
Different ways to measure

Expenditures

Public Sector or Government Expenditure as percentage of GDP is the most commonly used metric for the size of the Public Sector



FIGURE 2.7

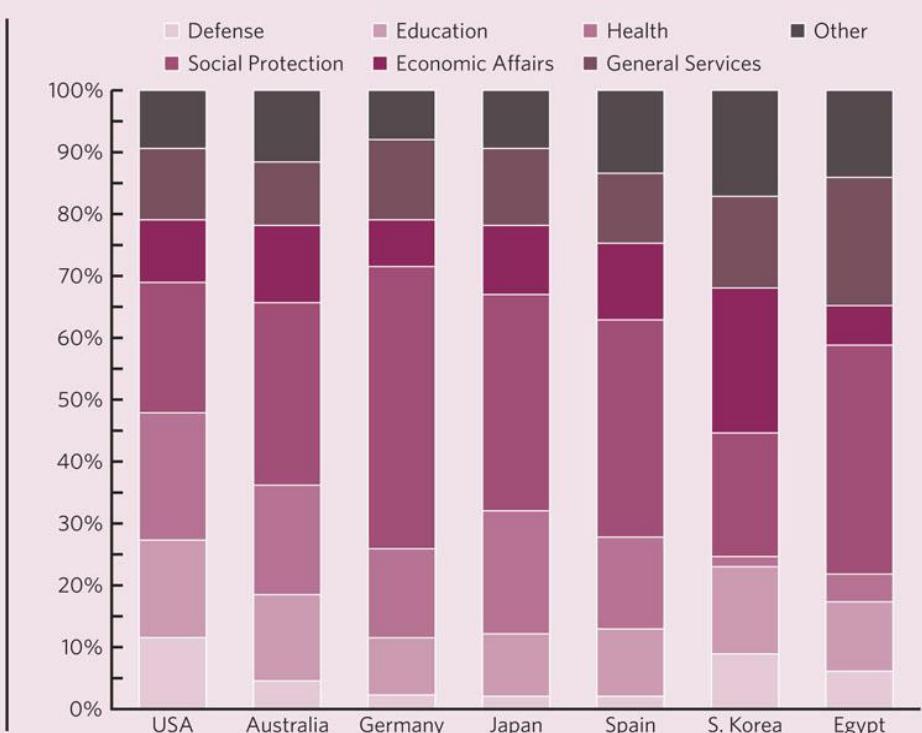


SOURCES: IMF, *Government Finance Statistics Yearbook 2010*, Tables W3 and W5; and World Bank, *World Development Indicators*.

- Allocation of public expenditure should also be taken into consideration

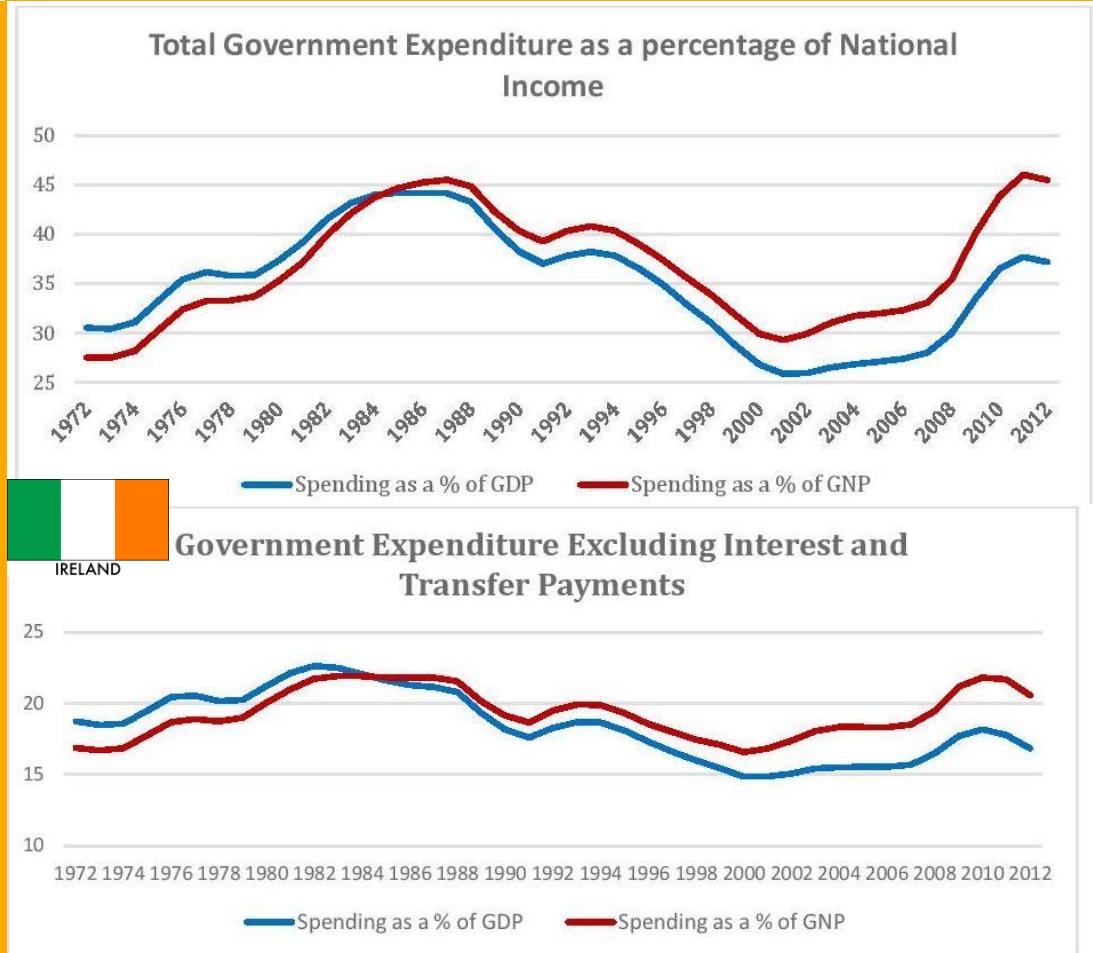
But where is money spent?

FIGURE 2.8



SOURCES: IMF, *Government Finance Statistics Yearbook 2010*, Tables W3 and W6; and World Bank, *World Development Indicators*.

The impact of the business/economic cycle



Government spending increases relative to the economy in periods of economic difficulty for three main reasons:

First, difficult economic conditions lead to higher unemployment which results in larger expenditure on government transfers.

Due to the decrease in income tax and increase in government transfers associated with greater unemployment, the public finances deteriorate. This leads to both higher public debt which accrues interest and an increase in government bond yields due to increased default risk.

Finally, even if government spending were to remain constant in nominal terms, contracting national output means that the size of the government sector relative to the economy will increase.

In an attempt to remove the effects of the business cycle, we look at government expenditure excluding government transfers and interest costs.

Revenues

Public Sector or Government Revenue as percentage of GDP is another commonly used metric for the size of the Public Sector

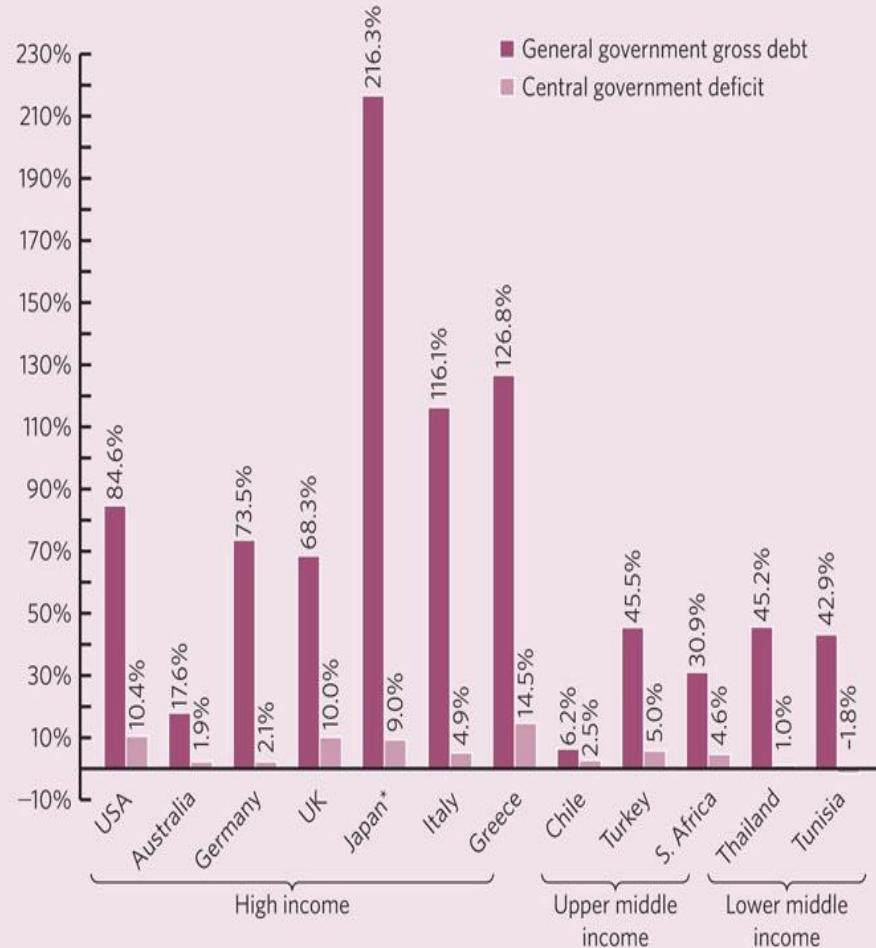


SOURCE: IMF, *Government Finance Statistics Yearbook 2010*, Tables W3 and W4.

Fiscal Deficit

- A fiscal deficit occurs when a government's total expenditures exceed the revenue that it generates, excluding money from borrowings.
- Deficit differs from debt, which is an accumulation of yearly deficits.

FIGURE 2.14



SOURCES: IMF, *Government Finance Statistics Yearbook 2010*, Table W3; IMF, *World Economic Outlook Database*, April 2011; and World Bank, *World Development Indicators*.

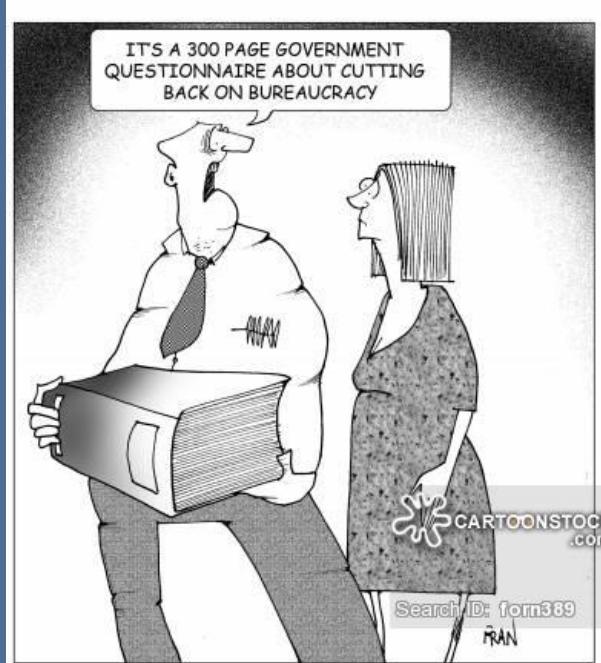
* Japan deficit is for general government.

Problems when using public finances

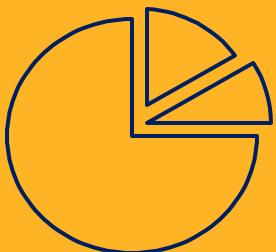
- The aspect of **off-budget items** contains all state-owned companies and participations in private companies held by the state.
- **Hidden costs of government** contains all those regulatory activities of the state which do not directly affect state expenditures, but which result nevertheless in high costs for those who have to adapt to the regulations.



Over-regulation and extensive bureaucracy for example lead to hidden costs because growth is hampered and at the same time private resources are bound inefficiently.



Employment



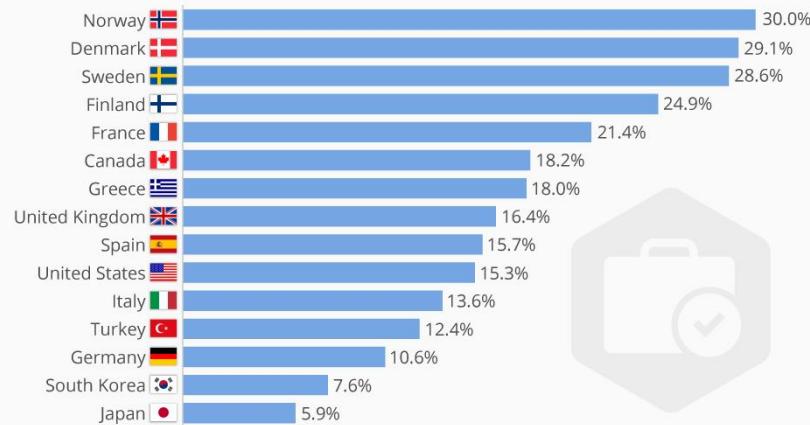
- Gov. Employment as % of Total Employment

- Number of Civil Servants per Capita



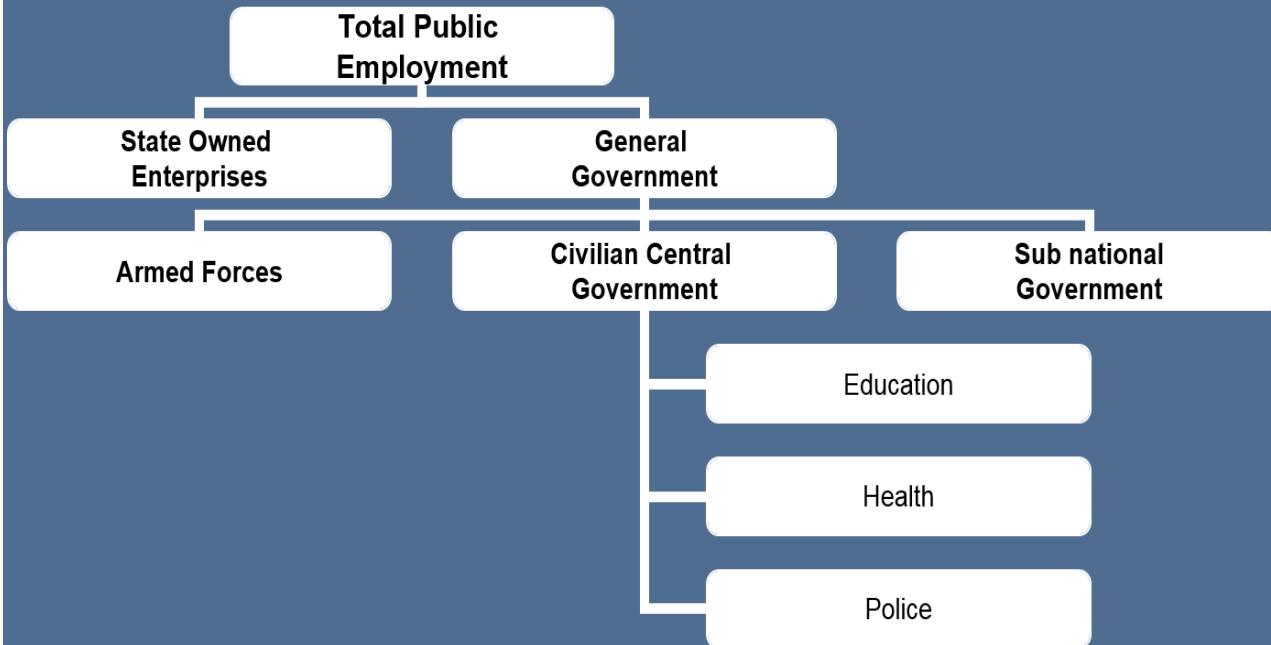
Scandinavia: First For Public Sector Employment

Employment in general government as a percentage of total employment (2015)



Which employees shall we include?

- ❑ Sometimes aggregated numbers might be misleading
- ❑ Shall we take productivity into consideration?



Can you think other ways /
metrics to capture the size of the
public sector and/or its role in an
economy?

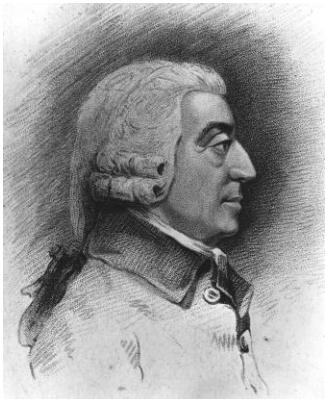


Market Efficiency

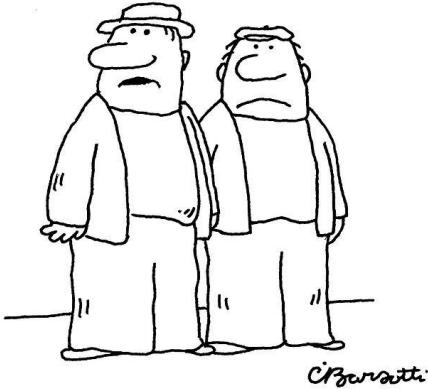
Invisible hand and Pareto Improvements

Self-interest, according to Adam Smith is a much more persistent characteristic of human nature than a concern to do good. Therefore self-interest provides a more reliable basis for the organisation of the society.

The Invisible Hand



Market efficiency



"There, there it is again—the invisible hand of the marketplace giving us the finger."

- The intuition behind Smith's insight: if there is some commodity or service that individuals value but is not produced, then they will be willing to pay something for it. If the value to a consumer exceeds the cost of production, there is a potential for profit and an entrepreneur will produce.
- If there is a cheaper way of production an entrepreneur will be able to make more profit by adopting it.
- No government intervention is needed at any point.



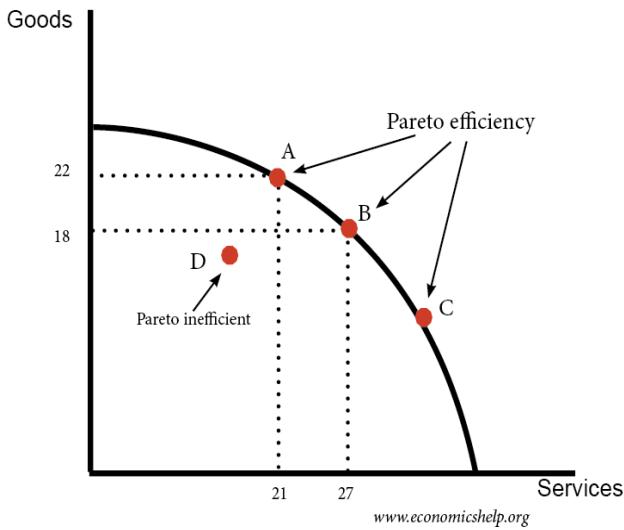


Welfare Economics

Pareto efficiency

Welfare economics is the branch of economics that focuses on the *normative* issues – what should be produced, how it should be produced, for whom and who should make this decisions.

Welfare Economics

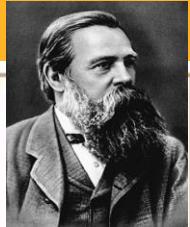


How can we evaluate the different mixes in the mixed economies around the world?

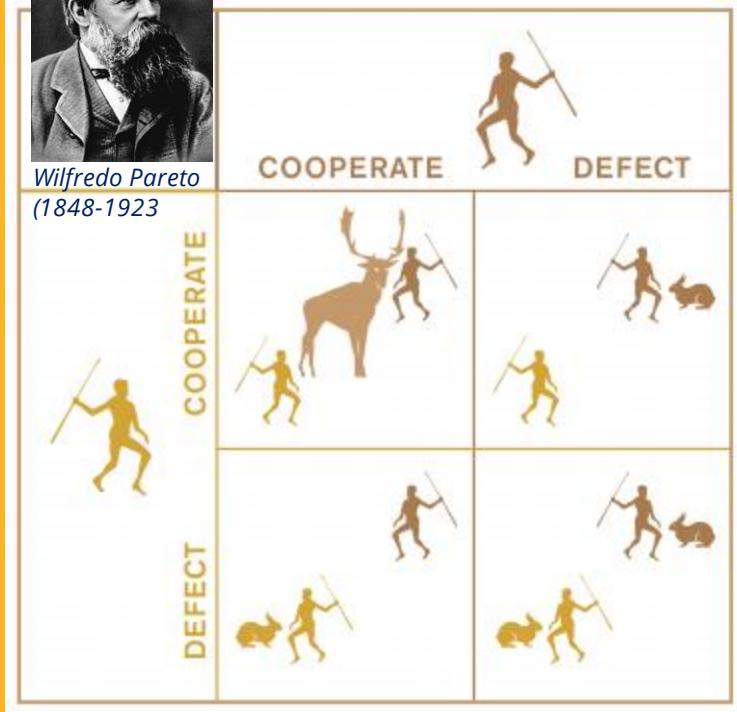
Most economists embrace a criterion called **Pareto Efficiency**

Resource allocations, when no one can be made better off without someone being made worse off are said to be *Pareto efficient* or *Pareto optimal*

Moving to such an equilibrium is known as *Pareto Improvement*. *Pareto Principle* refers to the need of instituting such improvements.



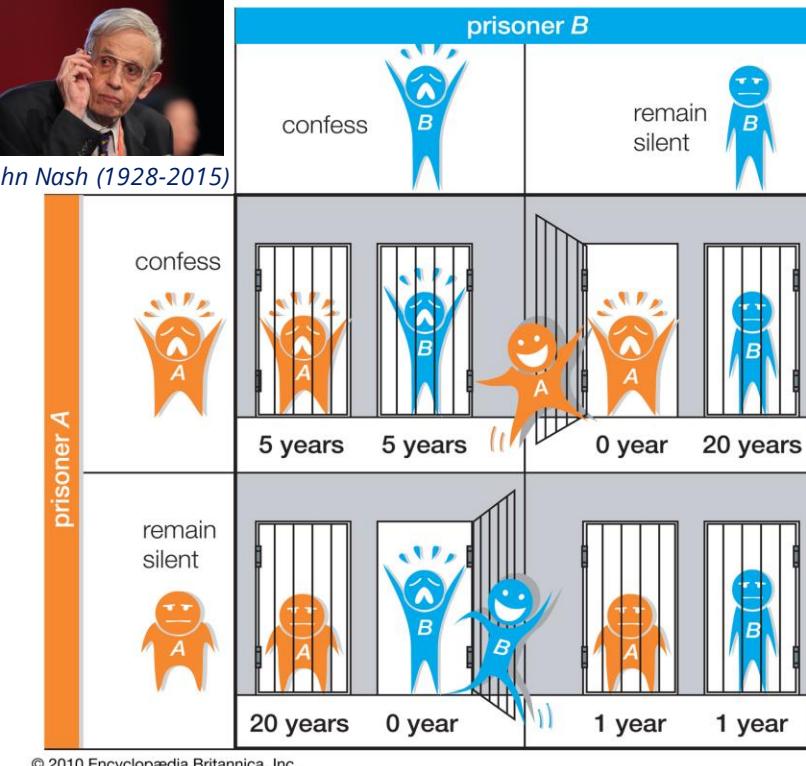
Wilfredo Pareto
(1848-1923)



The option of both players hunting a stag is considered *Pareto optimal* because players can not switch to any other outcome and make at least one party better off without making anyone worse off.



John Nash (1928-2015)



© 2010 Encyclopædia Britannica, Inc.

Nash equilibrium is an outcome in which every player is doing the best he possibly can given other players' choices. So, no player can benefit from unilaterally changing his choice.



The criterion of Pareto is individualistic in two senses:

- It is concerned with each individual's welfare, not with the relative well-being of different individuals.
- It is each individual's perception of his/her own welfare that counts (consumer sovereignty)

Two fundamental theorems of welfare economics



1st Theorem

Every competitive economy is Pareto efficient.

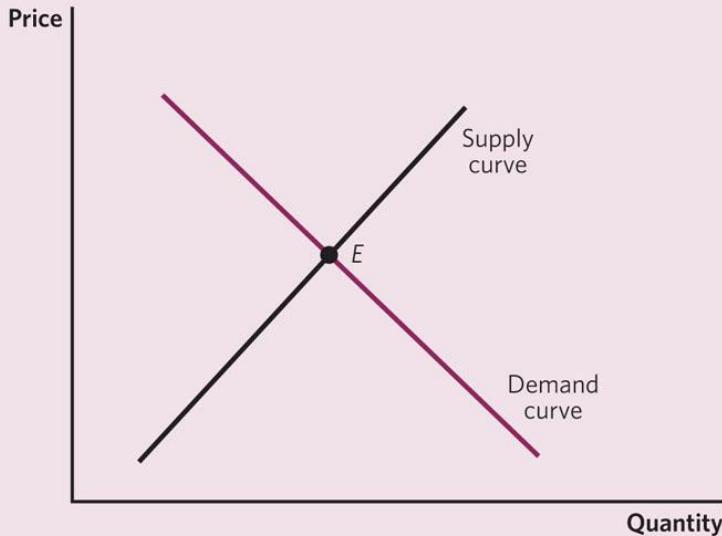
2nd Theorem

Every Pareto efficient resource allocation can be obtained through a competitive market process with an initial redistribution of wealth.

Note that: The second theorem says that the only thing government needs to do is to redistribute initial wealth. In other words, Pareto efficient allocation can be attained by means of a *decentralized market mechanism*.

Efficiency in a market

FIGURE 3.1



In deciding how much to demand, consumers equate the marginal benefit they receive from an extra unit with the marginal cost, the price.

In deciding how much to supply, firms equate the marginal benefit they receive, the price with the marginal cost

→ At the market equilibrium, where supply equals demand, the marginal benefit (to consumers) is equal to the marginal cost (to firms) – and each equals the price.

Three types of efficiency

Economists consider three aspects of efficiency, all of which are required for Pareto efficiency.

Exchange efficiency

Whatever goods are produced have to go to the individuals who value them most.

Production efficiency

Given the society's resources, the production of one good cannot be increased without decreasing the production of another.

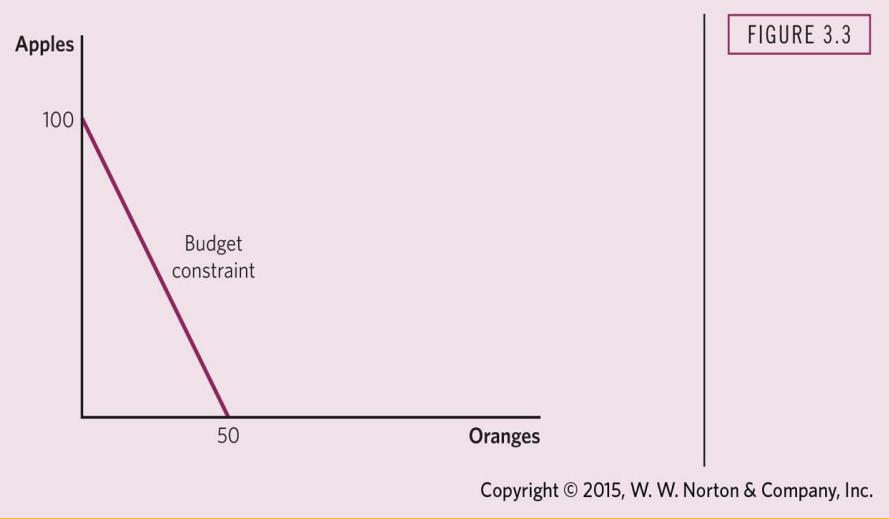
Product Mix efficiency

The goods produced correspond to those desired by individuals.

Let's see if a competitive market has all three types of efficiency



Budget Constraint



Given income £100, $P_o = £2$ and $P_A = £1$, an individual can purchase any combination of apples and oranges along or to the left of the budget constraint.

Any combination to the right is unaffordable.

The slope of the budget constraint is based on the relative price of goods

Indifference curve

An indifference curve (I_0, I_1, I_2, I_3, I_4) gives the combinations of apples and oranges among which a consumer is indifferent. The amount of one commodity that an individual is willing to give up in exchange for a unit of another commodity is called **marginal rate of substitution**.

As long as different individuals have different marginal rates of substitution there will be room for a deal.

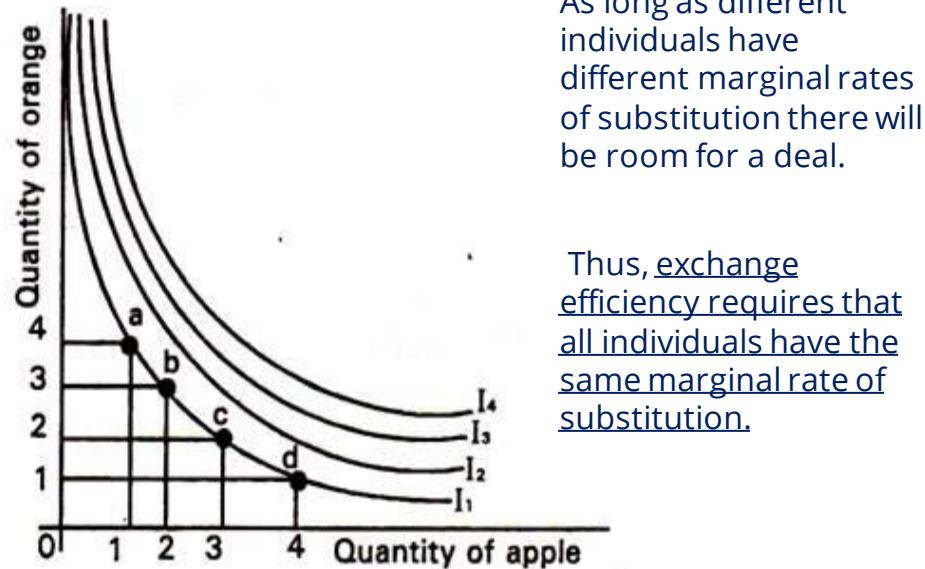


Fig. 4.7. An Indifference Map

Consumer's choice problem

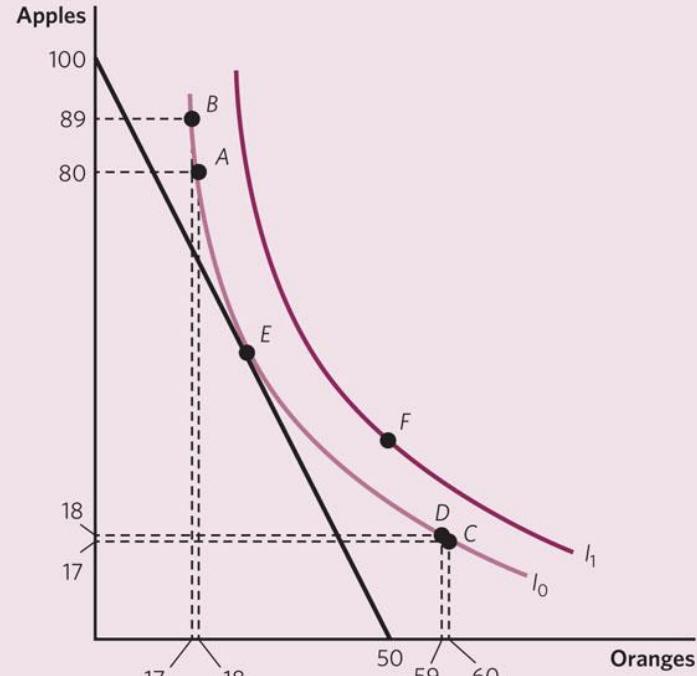
Because all consumers face the same prices in a competitive economy, and each sets his/her marginal rate of substitution equal to the price ratio, they all have the same marginal rate of substitution.

In the previous slide we showed that the condition for exchange efficiency was that all individuals have the same marginal rate of substitution.

Thus, competitive markets have exchange efficiency.



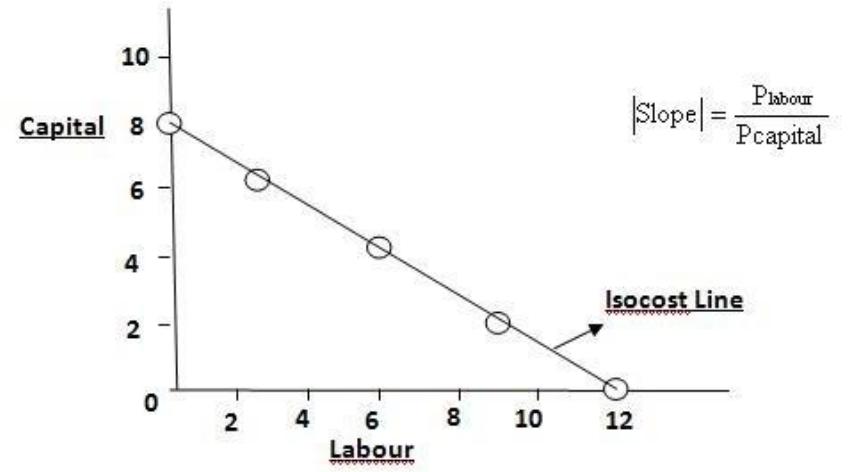
FIGURE 3.4



Copyright © 2015, W. W. Norton & Company, Inc.

Consumer chooses the point along the budget constraint that most prefers; that is the point at which the indifference curve I_0 is tangent to the budget constraint (point E). At that point the marginal rate of substitution equals the relative price of the commodities.

Isocost Line



An isocost line shows the different combinations of inputs that cost a firm the same amount.

The slope of the isocost line is the relative price of the two production factors.

Isoquants

Isoquants trace the different combination of inputs that produce the same quantities of outputs.

The slope of an isoquant is called **marginal rate of technical substitution**.

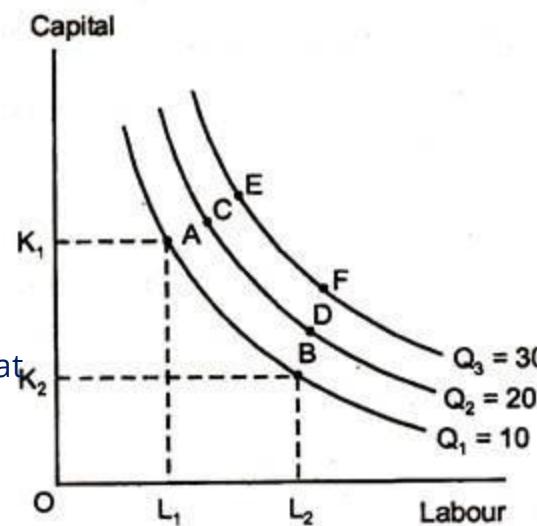


Fig. 6.3 : Isoquant Curve/Isoquant Map

Whenever marginal rates of technical substitution differ, we can switch resources around to increase production.

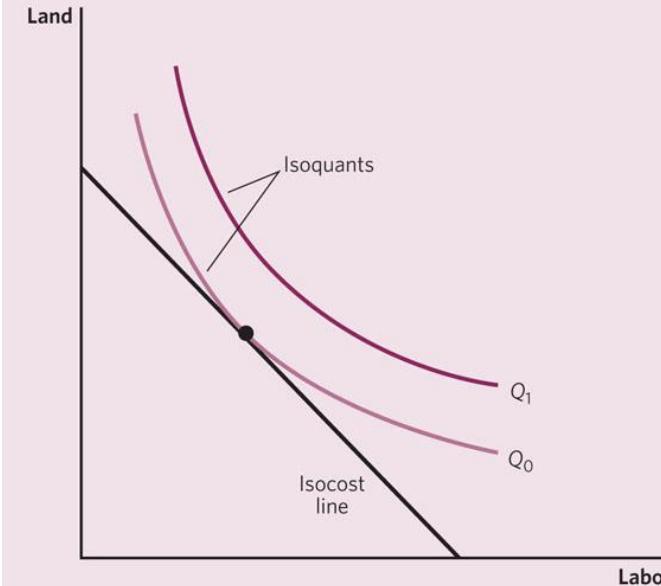
Thus, production efficiency requires that all firms have the same marginal rate of technical substitution.

Isoquants and Isocost lines

In a competitive economy all firms face the same prices, so all firms will set their marginal rate of technical substitution equal to the same price ratio. Hence, they all have the same marginal rate of technical substitution.

In the previous slide we showed that the condition for production efficiency was that all firms have the same marginal rate of technical substitution.

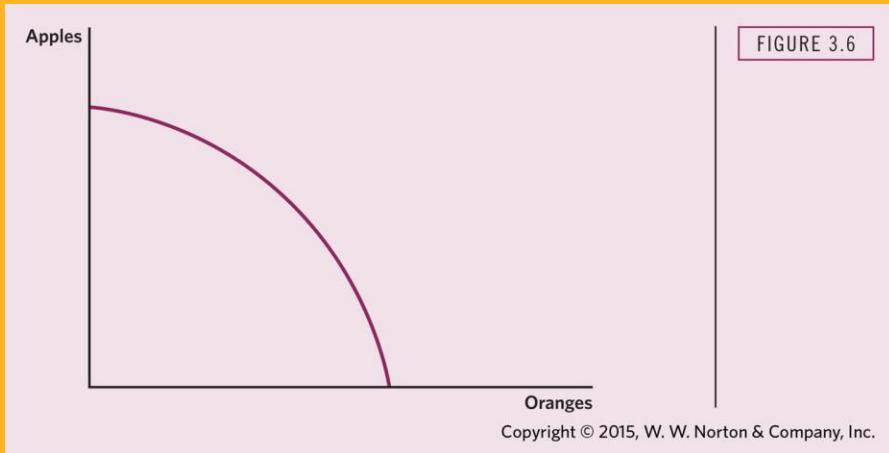
Thus, competitive markets have production efficiency.



Copyright © 2015, W. W. Norton & Company, Inc.

A firm maximizes its output, given a particular level of expenditure on inputs, at the point where the isoquant is tangent to the isocost line. At that point the marginal rate of technical substitution equals the relative price of the inputs.

Production Possibilities Schedule



For each level of output of one commodity, we can determine from the technology the maximum feasible level of output of the other commodity.

This generates the *Production Possibilities Schedule*. The slope of the production possibilities schedule is called **marginal rate of transformation**.

Indifference curve

An indifference curve (I_0, I_1, I_2, I_3, I_4) gives the combinations of apples and oranges among which a consumer is indifferent. The amount of one commodity that an individual is willing to give up in exchange for a unit of another commodity is called **marginal rate of substitution**.

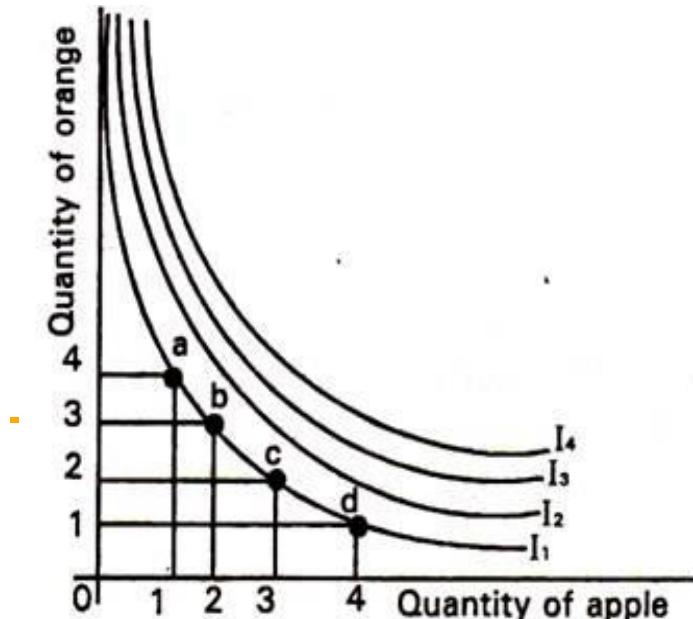


Fig. 4.7. An Indifference Map

Product mix efficiency requires that the marginal rate of transformation equals consumers' marginal rate of substitution

Production Possibilities Schedule and Indifference Curves

Under competition, the marginal rate of transformation will equal the relative price of the commodities.

We have already shown that, under competition, consumers' marginal rate of substitution will equal the price ratio.

Because both the marginal rates of substitution and the marginal rate of transformation equal price ratio, the marginal rate of transformation must equal the marginal rate of substitution.

Thus, competitive markets have product mix efficiency.

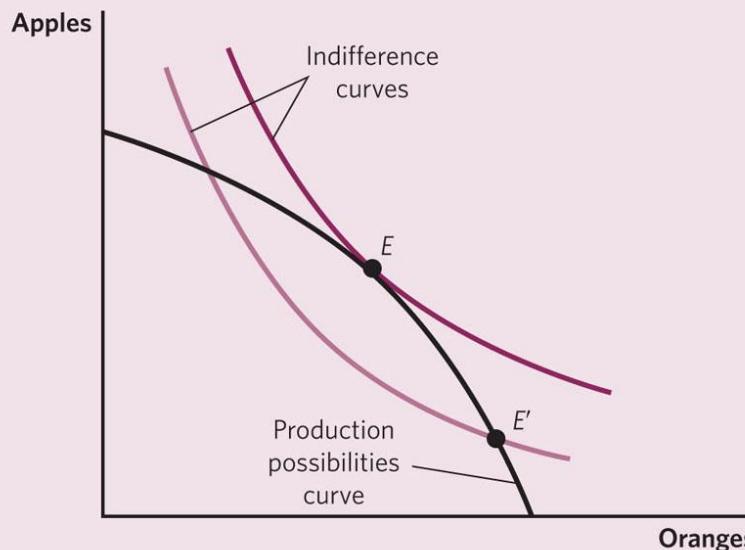
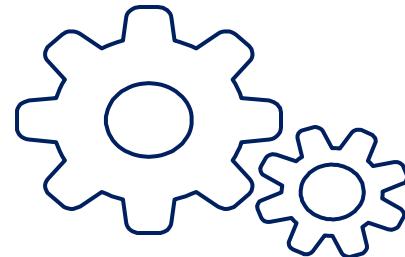


FIGURE 3.9

Copyright © 2015, W. W. Norton & Company, Inc.

To reach the highest level of consumers' utility, the indifference curve and the production possibilities schedule must be tangent (point E). At any other point, such E', consumer utility is lower than E.

Market seems to be really efficient!



Then why do we need a Public Sector (and this course)?





Property Rights

Tragedy of the commons and tragedy of the anticommons

Property Rights

"NO PERSON SHALL...be deprived of life, liberty or property without the due process of law; nor shall private property be taken for public use without just compensation."

The Fifth Amendment, U.S. Constitution

Property rights are necessary for any market. The absence of property rights or non well-defined property rights mean that there are no adequate incentives of taking care the commonly owned resources.

Example:

In the former communist countries, property rights were not well defined and people had insufficient incentives to maintain and/or improve their apartment.

In market economies, the benefits of such improvements are reflected in the market price of the properties.



The tragedy of the commons

The **tragedy of the commons**, is term used to describe a situation within a shared-resource system where individual users acting independently according to their own self-interest behave contrary to the common good of all users by depleting or spoiling that resource through their collective action.



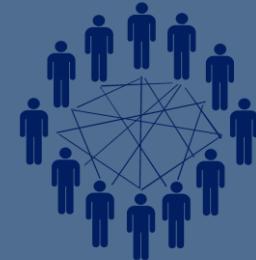
Proposed Solutions

For a long time the common response to the problem of the commons was either conversion of common resources to private or the external regulation of these common resources.

- If the resource is converted to private property, the owner should have both the profit incentives and the property rights to manage the resource responsibly.
- If the resource is regulated by the government, rules could be imposed on individual users for the common good.
- She noted a third response to the tragedy of the commons: Utilization of community social capital to devise creative and effective local solution.



In 1999, Nobel Prize-winning economist Elinor Ostrom revisited these solutions as private control over previously public resources could create the usual problems of monopoly business practices, whereas external oversight could generate inappropriate and poorly implemented regulations.



The tragedy of the anticommons

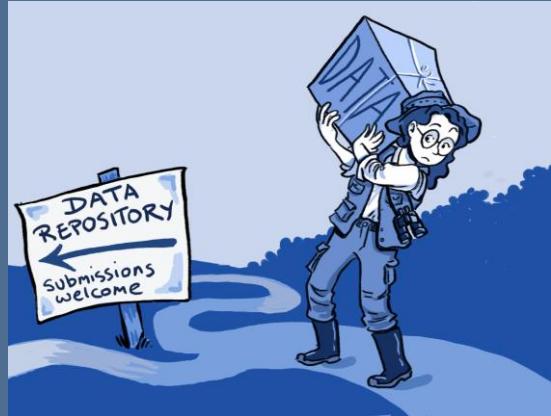
Michael Heller used the term **tragedy of the anticommons** to describe a problem where it is not the lack of property rights, but the excessive private ownership of a community resource that prevents achievement of a desirable outcome for society.



Example:
Patenting of genes



"Your problem is in the gene that makes antibodies, but since the Biophase Corp. now has a patent on that gene, I can't do anything for you."





Contract Enforcement

Rights need protection

Contract Enforcement



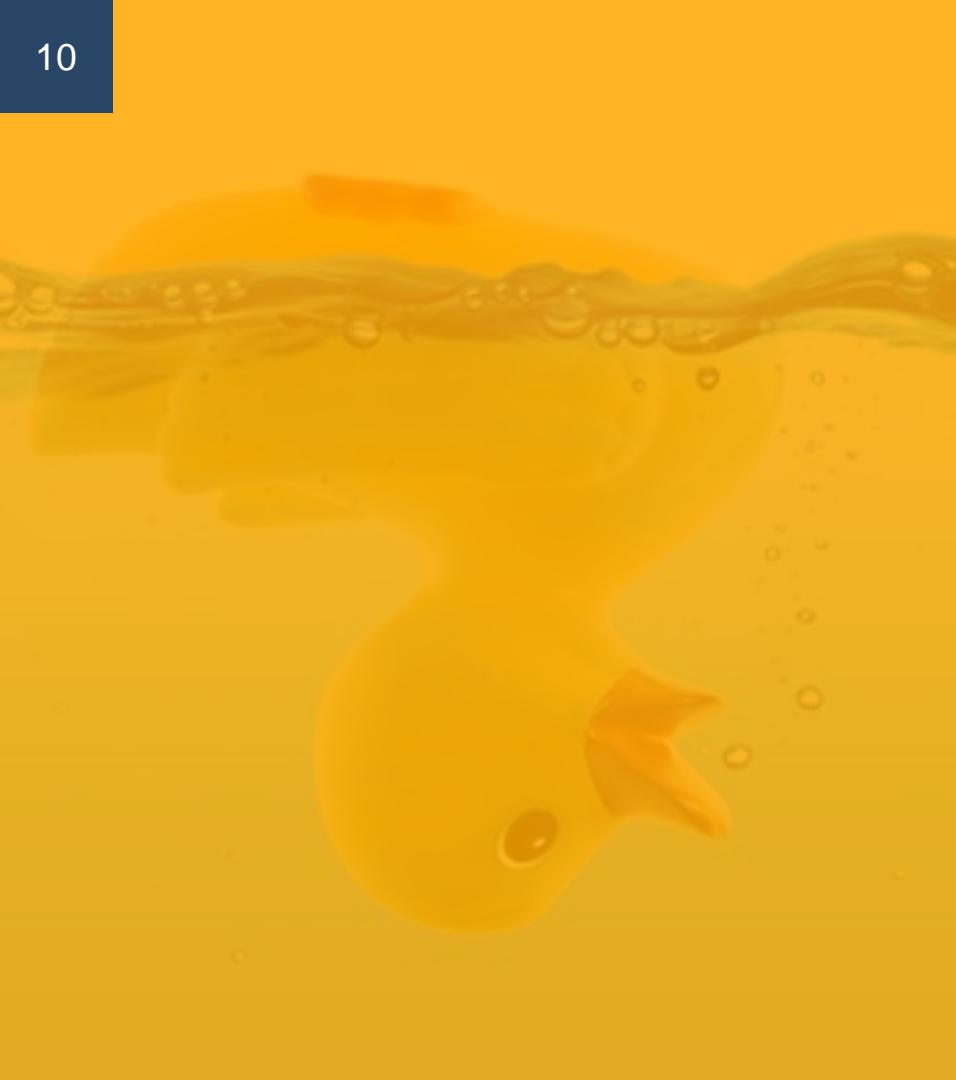
If individuals are engaged in transactions with each other, the contracts they agree on must be enforced.

If they are not and there are no consequences for breaking a contract then there will be no trust in the market.



Government activities aiming at protecting citizens and property, enforcing contracts, and defining property rights provide the foundations on which market economies rest.





Market Failures

When there is no invisible hand, or when the invisible hand is broken, or when the invisible hand points to the wrong direction, or...

Markets are not Pareto efficient under six important conditions, which are known as **market failures**, and provide a rationale for government intervention.

1. Failure of competition
2. Public Goods
3. Externalities
4. Incomplete Markets
5. Information Failures
6. Unemployment, Inflation, and Disequilibrium



1. Failure of Competition



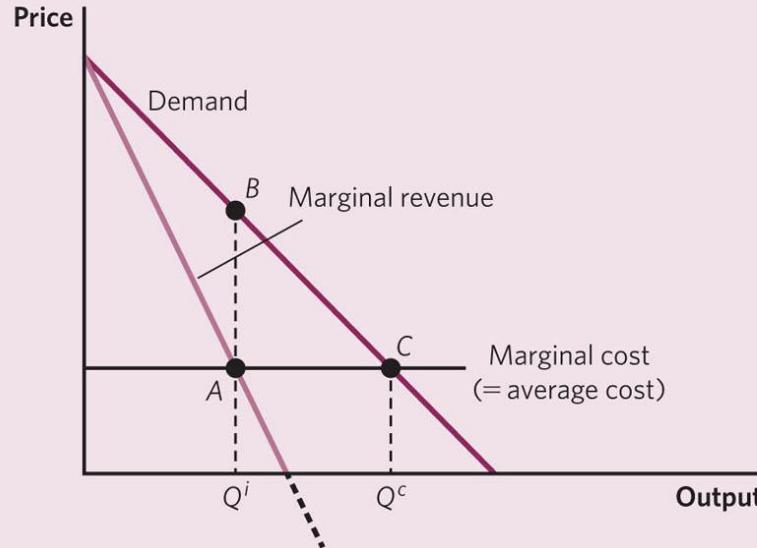
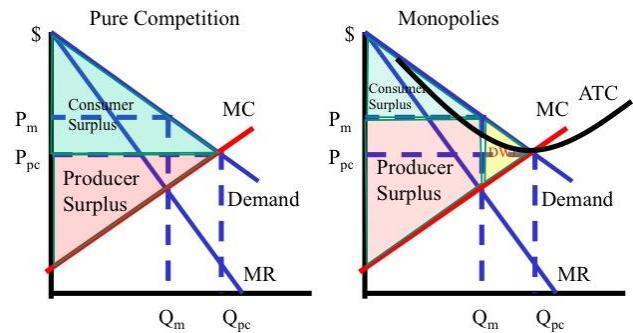
For markets to result in Pareto efficiency, there must be **perfect competition**, in other words a sufficiently large number of firms that each believes it has no effect on prices (price-takers). However perfect competition is not always the prevailing norm.

Overview of Imperfect Competition

Characteristic	Monopoly	Oligopoly	Monopolistic Competition
No of firms	Pure: One Working: >25%	Few dominant sellers	Many competing sellers
Type of product	Branded	Branded	Differentiated – many similar products
Barriers to entry	High especially with natural monopoly	High – protecting market power of established firms	Low – ease of entry and exit in the long run
Pricing power	High – limited by market demand	Strong – but interdependent	Some pricing power but high price elasticity
Supernormal profits in long run	High monopoly profits possible	High	Profits competed away by entry of new products

Imperfect competition leads to economic inefficiency

Performance & Structure



Copyright © 2015, W. W. Norton & Company, Inc.

Under imperfect competition, firms set the marginal revenue from one extra unit equal to the marginal cost. With a downward-sloping demand curve, when a firm sells an extra unit receives the price of the unit (+) but must lower the price it charges on that and all previous units (-). Thus marginal revenue is less than the price.

Thus, monopoly output is lower than competitive output.

What about natural monopolies?

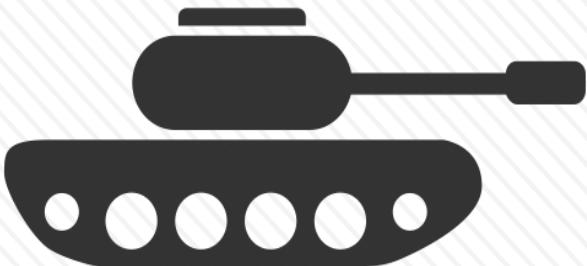


A situation in which it is cheaper for a single firm to produce the entire output than for each of several firms to produce part of it is described as **natural monopoly**.

If there is a natural monopoly, with declining average costs, and with marginal costs below average costs, competition is not viable. If a firm charged a price equal to the marginal cost it would operate at a loss ($\text{marginal cost} < \text{average cost}$).

Even then, a private monopoly would typically charge more than a government monopoly, as the private one seeks to maximize profitability, whereas the government-run monopoly would only seek to break even.

2. Public Goods



Some goods either will not be supplied by market or, if supplied, will be supplied in insufficient quantity e.g. national defence, lighthouses. These goods are known as **pure public goods**.

Pure public goods have two critical properties:

- I. It costs nothing for an additional individual to enjoy their benefits ($MC=0$, the cost of a lighthouse is not affected by the number of passing by ships)
- II. It is generally difficult or even impossible to exclude an individual from the enjoyment of a pure public good (If I put a lighthouse on a rock, I can't exclude other ships from taking advantage of its presence).



Market will not supply enough public goods



A ship owner with many ships might decide that the benefit of a lighthouse is more than its construction cost.

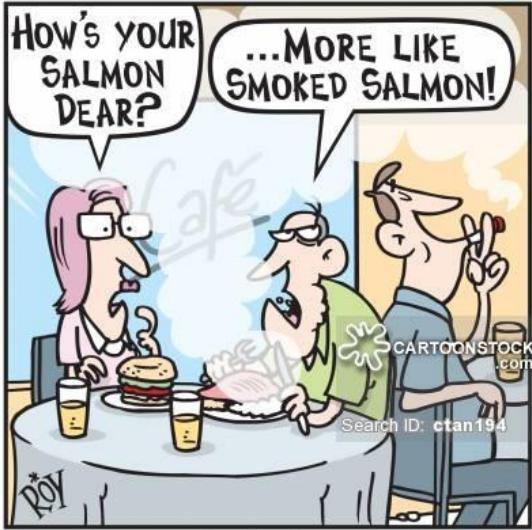
However when deciding how many lighthouses to build he will only take into consideration his own benefit, and not that of other ship owners.

Thus there will be some lighthouses for which the total benefits (taking into account all ships that make use of them) exceed the costs, but for which the benefits of any single ship owner are less than the cost.

Such lighthouses will not be constructed which is inefficient.



3. Externalities



Some times the actions of an individual or firm affect other individuals or firms (third parties). We refer to such instances as **externalities**.

When the actions of an individual or firm impose a cost on others for which they are not compensated we have **negative externalities**.

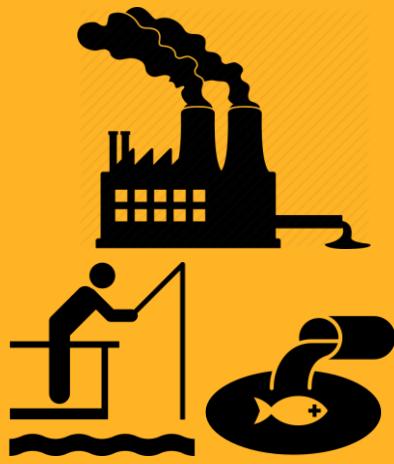
When the actions of an individual or firm conferring a benefit to others for which they don't pay we have **positive externalities**.



Production Externalities

Negative Production Externalities

The production of a good/service has a negative effect on others



Positive Production Externalities

The production of a good/service has a positive effect on others



Consumption Externalities

Negative Consumption Externalities

The consumption of a good/service has a negative effect on others

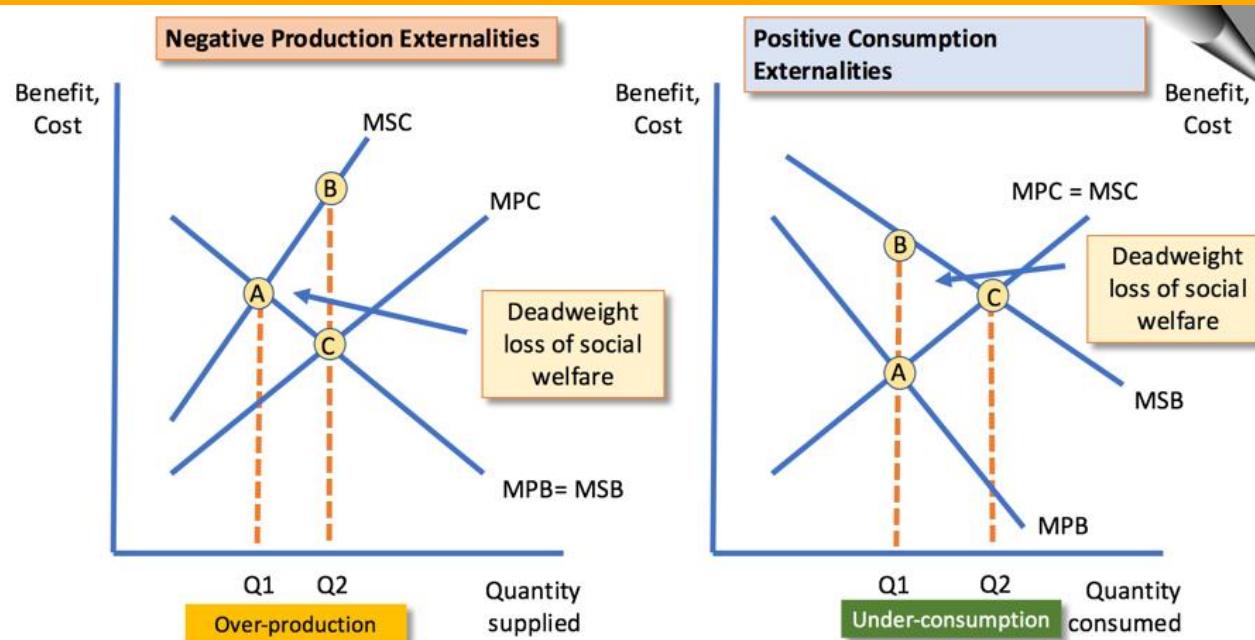


Positive Consumption Externalities

The consumption of a good/service has a positive effect on others



Market ignores externalities



Whenever such externalities exist, the resource allocation provided by the market will be inefficient:

- Individuals do not bear the full cost of negative externalities they generate and will engage in an excessive amount of such activities.
- On the other hand, individuals do not enjoy the full benefits of activities with positive externalities and will engage in too little of these.

4. Incomplete and Missing Markets

MARKET

Whenever private markets fail to provide a good or service even though the cost of providing it is less than what individuals are willing to pay, there is a market failure referred to as **incomplete markets**. E.g. Health insurance for the elderly, student loans

A complete market would provide all goods and services for which the provision cost is less than what individuals are willing to pay.



Why do we have incomplete markets?



At least three answers have been proposed:

1. Innovation

There is often an undersupply of innovative new products in the insurance and security industries, which is why there is an important role for government in research.

2. Transaction Costs

It is costly to run markets, to enforce contracts, and to introduce new insurance policies. A private firm may be reluctant to do so if unsure whether everyone will buy the policy or whether will be able to reap the reward as competitors enter the market.

3. Asymmetries of Information and Enforcement Costs

The insurance company is often less informed about the nature of some risks than the person purchasing insurance. If risk is overestimated, the premium will be too high and the policy will not be purchased, if the risk is underestimated the premium will be too low and the insurer will lose money. It is a heads-you-win-tails-I-lose situation.

Asymmetric information and adverse selection

Hello, I want to upgrade my life insurance policy...



Adverse selection is a term used to describe the situation that arises when the customers we have are the ones we would like to avoid. It is a result of asymmetric information.

Example:

In capital markets, lenders are not able to tell which borrowers will repay them (especially when there are no collaterals – eg. student loans).

If the bank increases the interest rate to reflect that many loans are not repaid, it may find that the default rate (percentage of loans not repaid) increases.

Those who know that they are not going to pay anyway care less about the level of the interest rate.

Similarly, people in good health with healthy lifestyles are less likely to buy health insurance compared to those who are in bad shape and have unhealthy or even risky lifestyles.

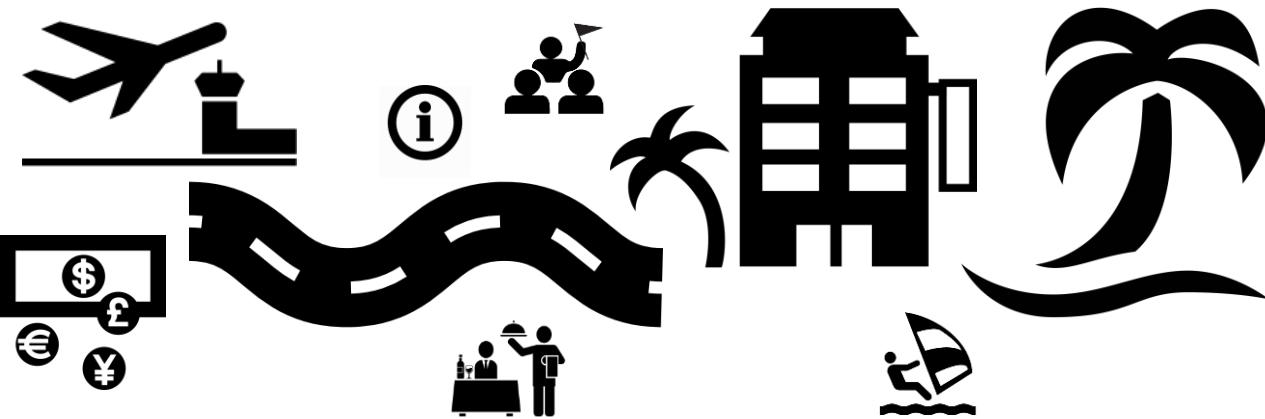
Missing Markets



Another reason for incomplete or missing markets is the absence of certain complimentary markets.

Assume that everyone drinks coffee with sugar. If sugar is not produced then an entrepreneur considering producing coffee would not do so, as he would realize that he would have no sales.

In many cases, particularly in less developed countries, large-scale coordination is required. Similarly urban renewal programs require coordination among factories, retailers, landlords, and other businesses.



5. Information Failures



Government activities, in many occasions, are motivated by imperfect information on the part of the consumer, and by the belief that the market will supply too little information.



Information, in many respects, is a public good. Offering information to one more individual does not reduce the available information to the rest.



Durham Centre for
Ancient and Medieval
Philosophy



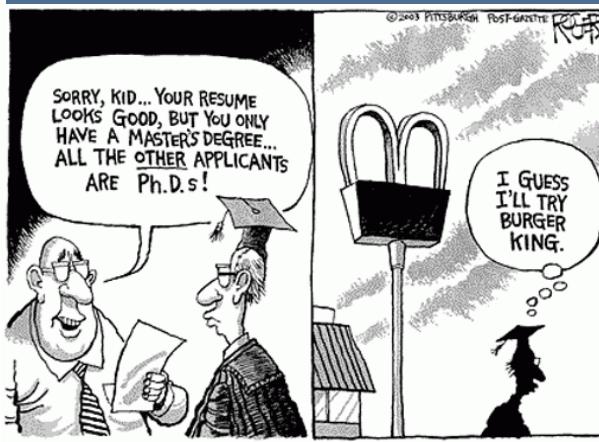
Resources devoted to producing new knowledge – **research and development** - can be considered a particularly important expenditure on information however market on its own might engage in an insufficient amount of certain R&D activities.

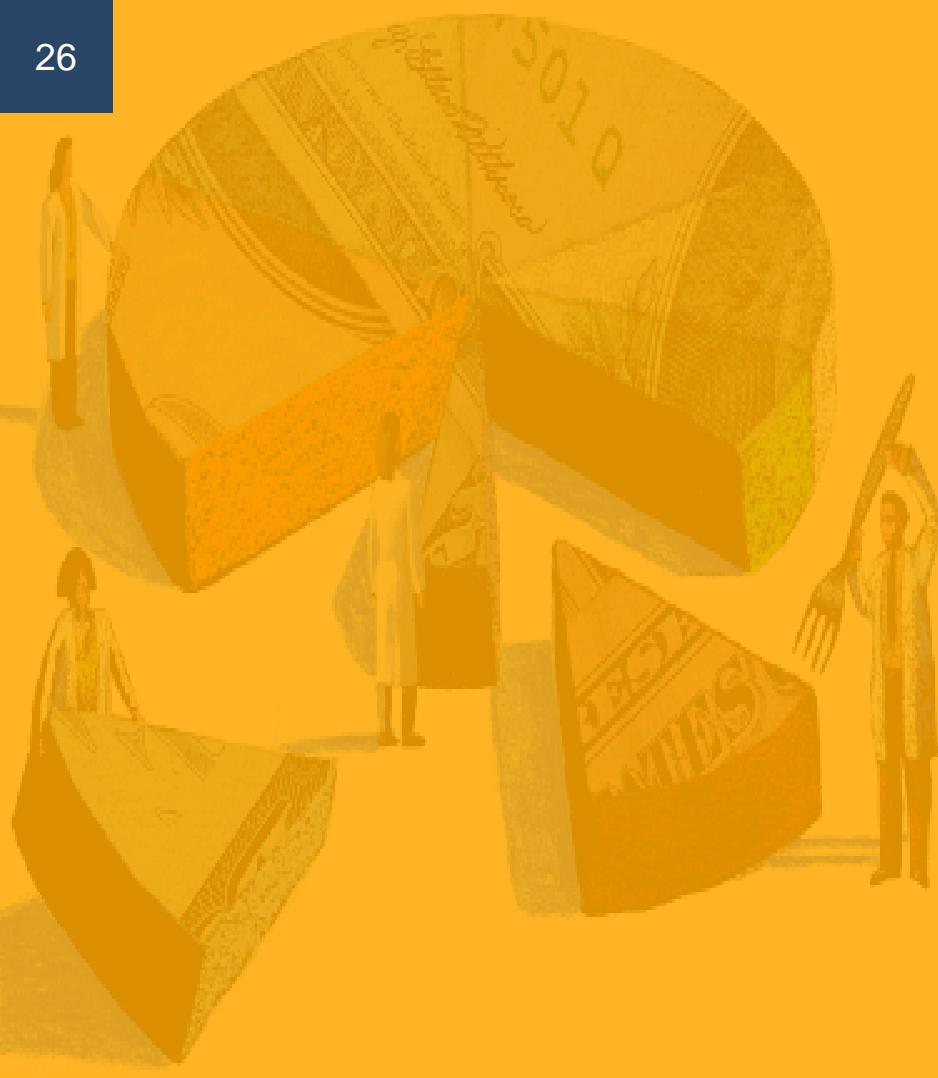
6. Unemployment, Inflation, and Disequilibrium

For many economists, the high levels of unemployment are taken as *prima facie* evidence that something is not working well in the market.

The recent global economic crisis hit several countries in Europe, with unemployment rates of 25% and youth unemployment in excess of 50%.

In a Pareto efficient market there should be no unemployment (unutilized resources).



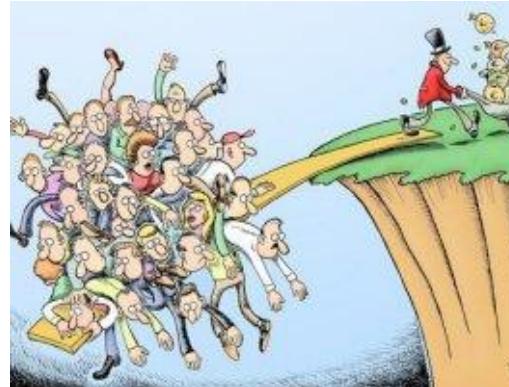


Redistribution

Even when market is Pareto efficient...

Even if the market is Pareto efficient (unlike with the six market failures mentioned earlier), government intervention might be required for a fairer distribution of income.

Redistribution



Competitive markets may give rise to very unequal distribution, leaving some individuals with insufficient resources on which to live.



Merit goods

When the society wants you to consume them...

Merit Goods



Individuals may not act in their best interest. Even fully informed consumers make “bad” decisions. For example, they smoke or drive without wearing seat belts / helmets.

Goods that the government compels individuals to consume, such as seat belts and education, are called **merit goods**.

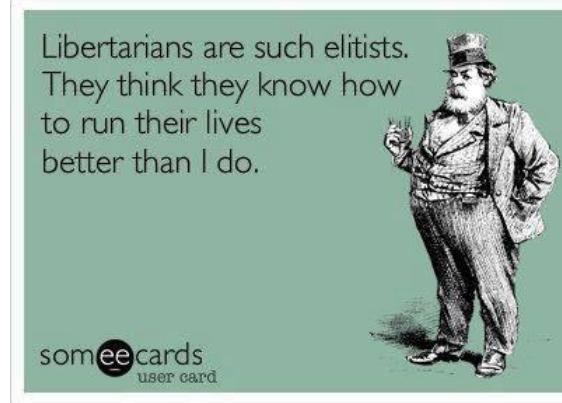


Paternalism vs Libertarianism



The view that government should intervene because it knows what is in the best interest of individuals better than they do themselves is referred to as **paternalism**.

The view that government should not interfere with the choices of individuals is often referred to as **libertarianism**.

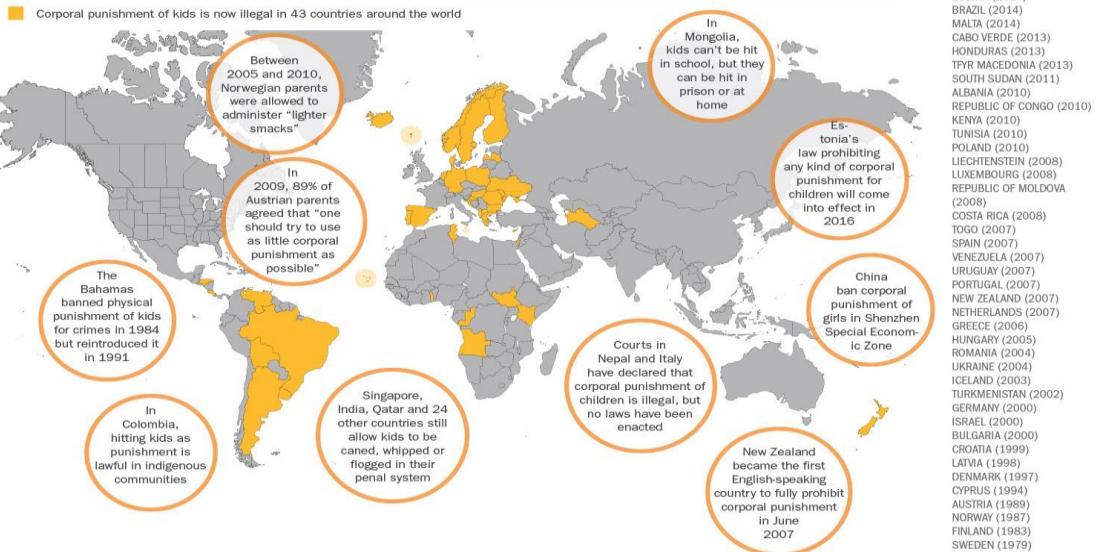


Two important caveats to economists' general presumption against government's paternalism



Children. Someone, either the parents or the state must make paternalistic decision on behalf of the children. There is an ongoing debate concerning the proper division of responsibility.

How Other Countries Handle Spanking



Situations in which the government cannot easily commit itself to refrain from helping individuals who made poor decisions.
Examples: individuals who don't save for their retirement, or individuals who neither buy earthquake insurance nor build homes that can withstand the effects of an earthquake.

To summarize, we need a public sector to...

- Protect our property rights
- Enforce contracts
- Make-up for market failures such as
 - Failure of competition
 - Public Goods
 - Externalities
 - Incomplete Markets
 - Information Failures
 - Unemployment, Inflation, and Disequilibrium
- Redistribute income and wealth
- Incentivize the consumption of merit goods





Public Goods

Pure and impure

Rival Consumption & Exclusion



To distinguish between private and public goods, we need to ask two basic questions.

- i. Does the good have the property of rival consumption?
- ii. Is it possible to exclude any individual from the benefits of the good (without incurring great costs)?

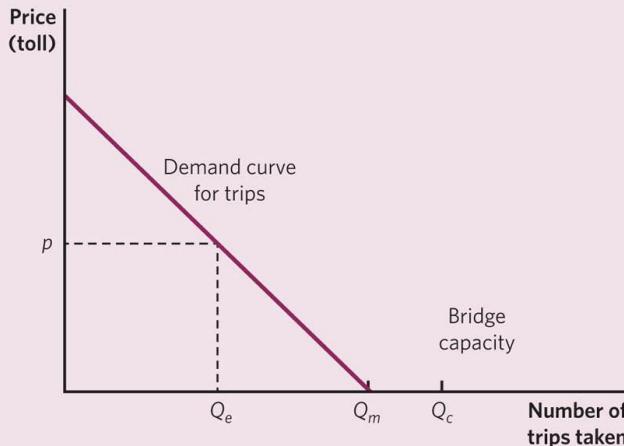
Rival consumption means that if a good is used by one person, it cannot be used by another. **Non-rival consumption** refers to cases in which one person's consumption does not detract from or prevents another person's consumption.

The second question relates to the property of **exclusion**. Can someone be excluded from the consumption of a good. If exclusion is impossible (or too expensive), then the use of price system is impossible because consumers have no incentive to pay the price.

Underconsumption, undersupply and user fees

If consumption is non rival but exclusion is possible, market might lead to **underconsumption** as the marginal benefit is higher than the marginal cost (zero). But if there is no charge there will be no incentive for supplying the good. In this case, inefficiency takes the form of **undersupply**.

FIGURE 5.1



If exclusion is possible, even if consumption is non-rival, governments often charge **user fees** to those who benefit from a publicly provided good or service. For example toll roads, airline ticket tax.

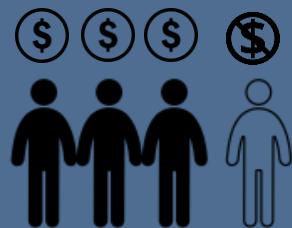
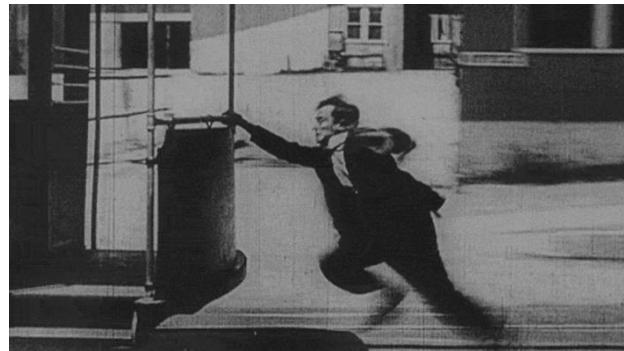
User fees are often thought of as a fairer way of raising revenues, as those who use the public facility the most (and presumably benefit the most) pay the most.

However when consumption is non-rival, user fees introduce and inefficiency.



When exclusion is not possible individuals are reluctant to contribute voluntarily to the support of public goods. This is known as the **free rider problem**.

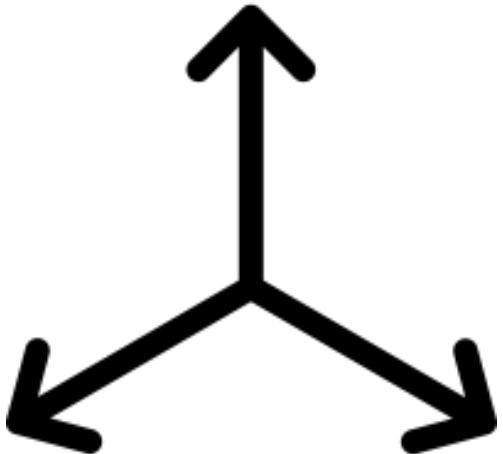
Free rider problem



In a few cases non-excludable public goods are provided privately. Usually when there is a large single consumer whose benefit is so large that it pays for him/her to provide it.

Although the “selfish” nature of humanity is in the core of the free rider problem, recent studies in experimental economics have suggested that economists might have overemphasized it.

Spectrum of Goods

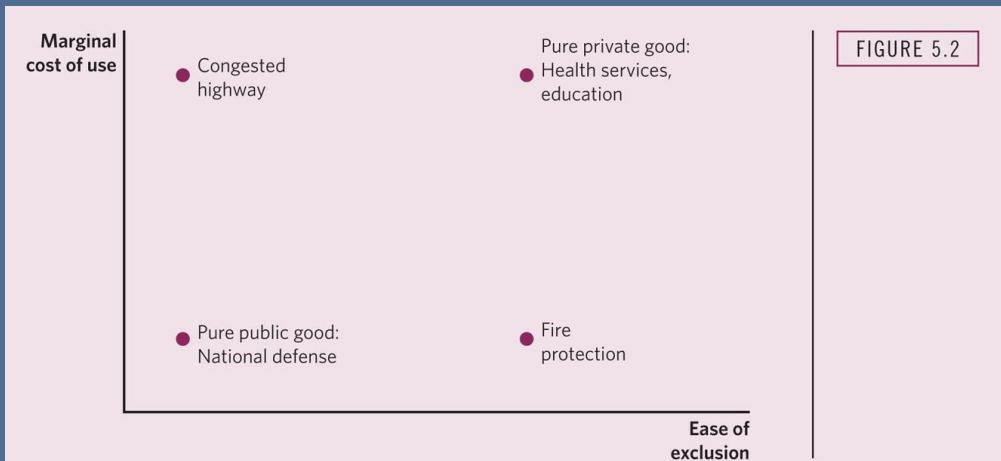


Generally, **private goods** have the properties of rival consumption and excludability.

Goods characterized by non-rival consumption and for which exclusion is impossible are **pure public goods**.

Goods characterized by either non-rival consumption or excludability are **impure public goods**.

- Goods characterized by non-rival consumption and excludability are also known as **club goods**.
- Goods characterized by rival consumption and non-excludability are also known as **common goods**.



Rivalry (Marginal Cost of Use)



Pure Public Goods



Club Goods



Global and Local Public Goods



The benefits of some public goods are enjoyed only locally - by those living in a particular community. These are called **local public goods**.



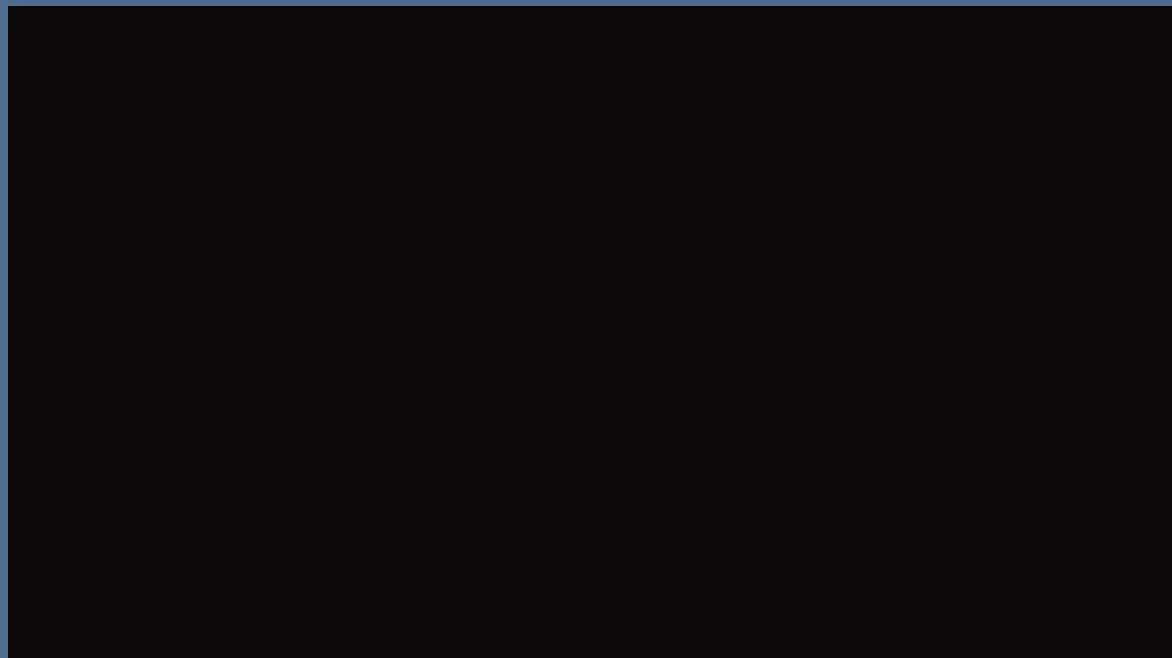
However more and more public goods are **global public goods**, the benefits of which accrue to anyone in the world. Global environment, global health, global knowledge, and global security are some of them.



Collective Action

Whenever there is a public good, there is need for **collective action**. Within a country, the national government provides for national public goods (e.g. national defence), and local governments provide for local public goods (e.g. street cleaning).

However there is no global government. Still, the international community comes together to address those global public goods, through treaties, agreements and international organizations.





Publicly Provided Private Goods

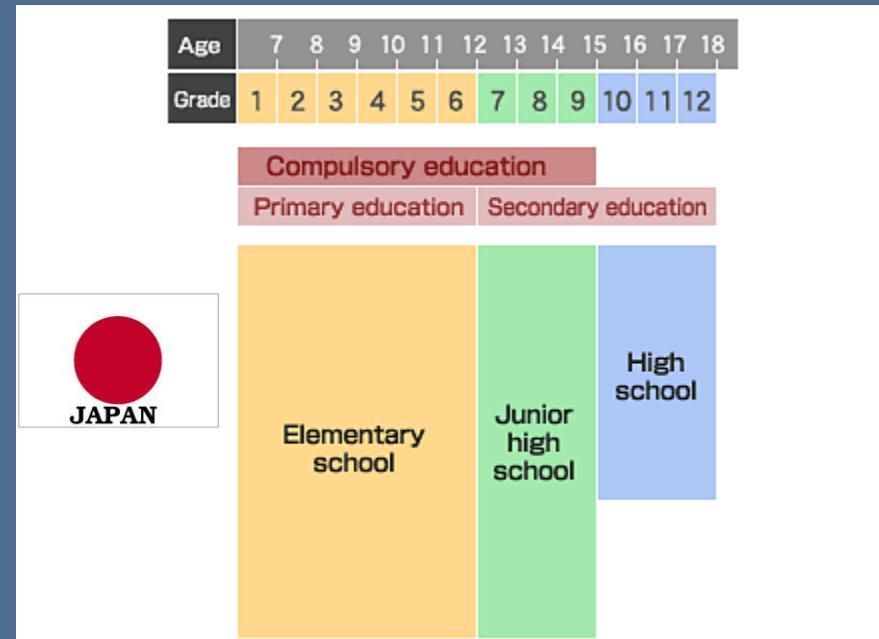
Private goods provided by the
government

Publicly provided goods characterized by large marginal cost associated with supplying additional individuals are referred to as **publicly provided private goods**.

Publicly Provided Private Goods

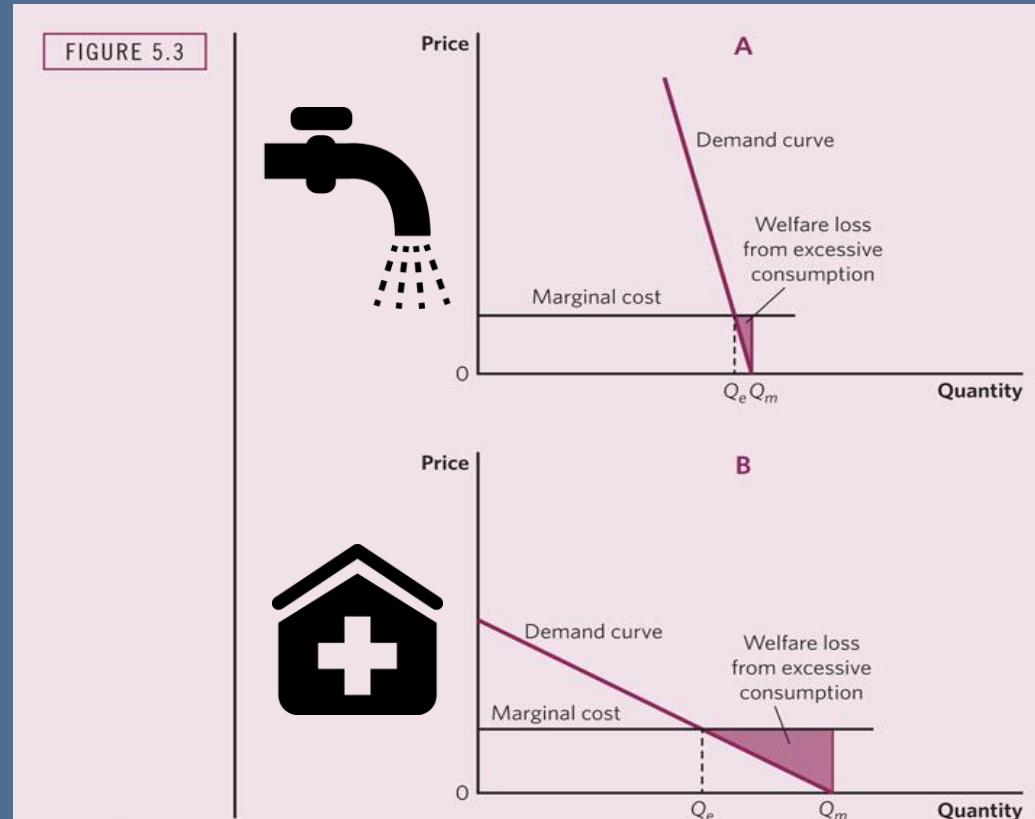


Education is a typical example of publicly provided private good.



If a private good is provided freely by the government there is likely to be overconsumption of the good as individuals will keep consuming it until their marginal benefit is equal to zero.

Overconsumption of publicly provided private goods



Rationing Publicly Provided Private Goods



Given the inefficiencies arising from overconsumption when no charges are imposed for publicly provided goods, governments often try to limit their consumption. Any method restricting consumption of a good is called a **rationing system**.

There are three main methods of rationing publicly provided goods:

1. User Charges
2. Uniform Provision
3. Queuing

Users pay a fee for the good/service.

User Charges



Advantages

Those who benefit bear the cost

Disadvantages

Results in underconsumption

Administering pricing system adds transaction costs





Uniform Provision

Governments supplies the same quantity of the service/good to everyone

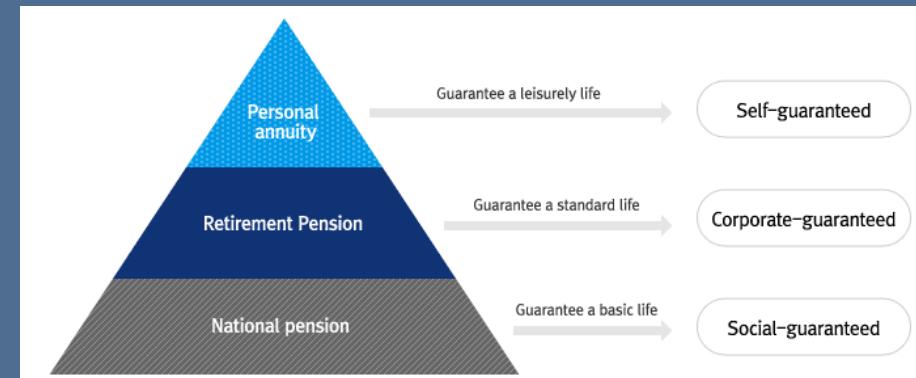
Advantages

Saves on transaction costs

Disadvantages

Leads some to overconsume and others to underconsume

High demanders may supplement public consumption, increasing total transaction costs



Queuing



Rather than charging individuals money for access to publicly provided goods and services, government requires that they pay a cost in waiting time

Advantages

Goods (like healthcare) allocated not necessarily on basis of who is wealthiest

Disadvantages

Alternative basis of allocation (who has time to spare) may be undesirable

Time is wasted





Public Choice

Public Choice and its problems

Public vs Private Choice



In previous classes, we explained the rationale behind public provision of both public and private goods.

But how can we decide the quantity of those goods?

Market economy uses the price mechanism to reach an effective allocation of resources.

Equilibrium is determined at the intersection of the demand and supply curves . Thus, when demand increases, price rises and this induces firms to produce more.

Decisions about resource allocations in the public sector are quite different. Individuals vote for representatives and these elected representatives, in turn, vote for a public budget, and the money is spent by a variety of administrative agencies.

Representatives must ascertain and weigh the views of their constituents.

The problem of preference revelation



Individuals express their desirability of one private good versus another by a simple action: buying the good.

Elections of public officials convey only limited information about voters attitudes towards specific public goods. At best, they convey a general notion that voters prefer more or less government spending.

For example polls show strong sentiment against deficits however no consistent picture emerges regarding the trade-offs. Some polls suggest that voters would be willing to pay higher taxes and accept expenditure cuts, while others do otherwise. Unless faced with concrete trade-offs it is hard to get voters think seriously about their choices.

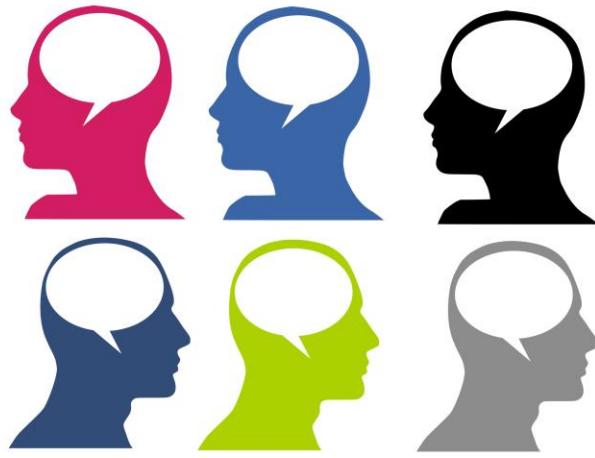
In private decisions, the decision maker knows his/her own preferences. In public decisions, the decision maker must ascertain the preferences of those on whose behalf he/she is making the decision.

Even if individuals were asked directly about their preferences the may hide their true preferences:

- If what they have to pay does not depend on their answer, people tend to demand for more. People demand more of something they don't have to pay for.
- If what they have to pay does depend on their answer, people have an incentive to pretend that they enjoy the good much less than they really do. They know that their individual answer will have a negligible effect on the total amount supplied, and they would like to be free riders.



Individual Preferences for Public Goods



Different individuals have different views on how much should be spent on public goods or publicly provided private goods.

They differ for three main reasons:

1. Differences in tastes
2. Income
3. Taxation

Just as some people prefer one ice cream flavour over another. Similarly some individuals prefer public parks and national defence, whereas others prefer private goods such as restaurant dinners and cars.



Income and taxation effect on preferences for public goods



The other two sources of differences in preference are income and taxation.

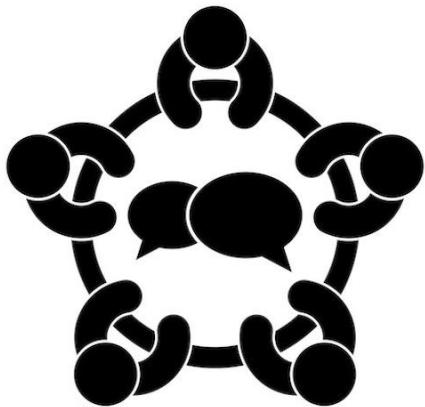
Individuals with higher income would normally like to consume more of all goods, public and private. However their preference will be affected by the price they are asked to pay.

For private goods rich and poor pay the same price. Regarding public goods, richer individuals usually face a higher price, as they often contribute more to the additional taxes required to finance public goods.

The **tax price** is the additional amount an individual must pay when government expenditure increases.

If everyone pays the same richer individuals prefer more public goods. If richer individuals often pay a higher tax price, they will have a lower preference for public goods, while those at lower incomes will have a higher preference.

The problem of aggregating preferences



In private markets, firms don't have to balance the interests of one group against those of another. If an individual is willing to pay a price for a commodity above the marginal cost, then the firm has incentive to sell it. Decisions are made on an individual basis.

Contrary, in the public sector decisions are made collectively.

A politician voting to increase expenditure on a public good does not spend his/her money. Politician is meant to represent his/her constituents, but their opinions are not unanimous. Some might like more military spending, other less.

The problem of reconciling differences arises whenever collective decision making is required.

In a dictatorship, the answer is easy: the dictator's preferences dominate. However, things are more complicated in democracy.



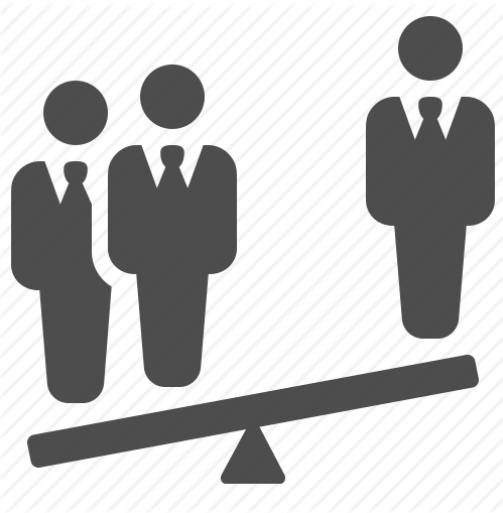


Voting problems

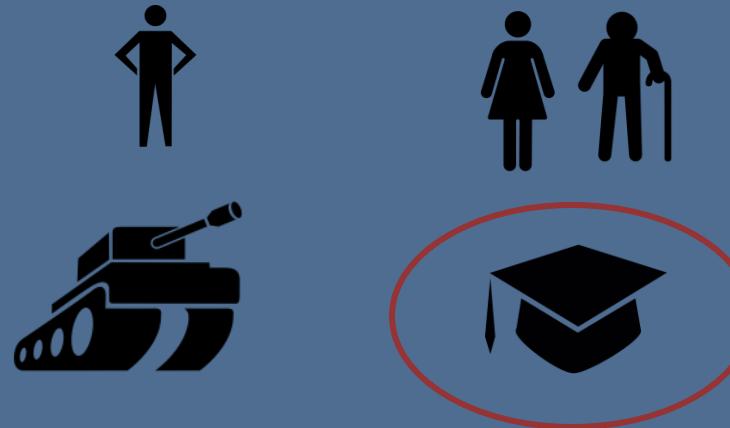
Majority voting and paradoxes

Simple majority voting is one of the most commonly used rules in democracy.

Majority voting



Suppose three individuals have to choose between spending on national defence and education. They take a vote and if two of them vote for education that's where money is spent.

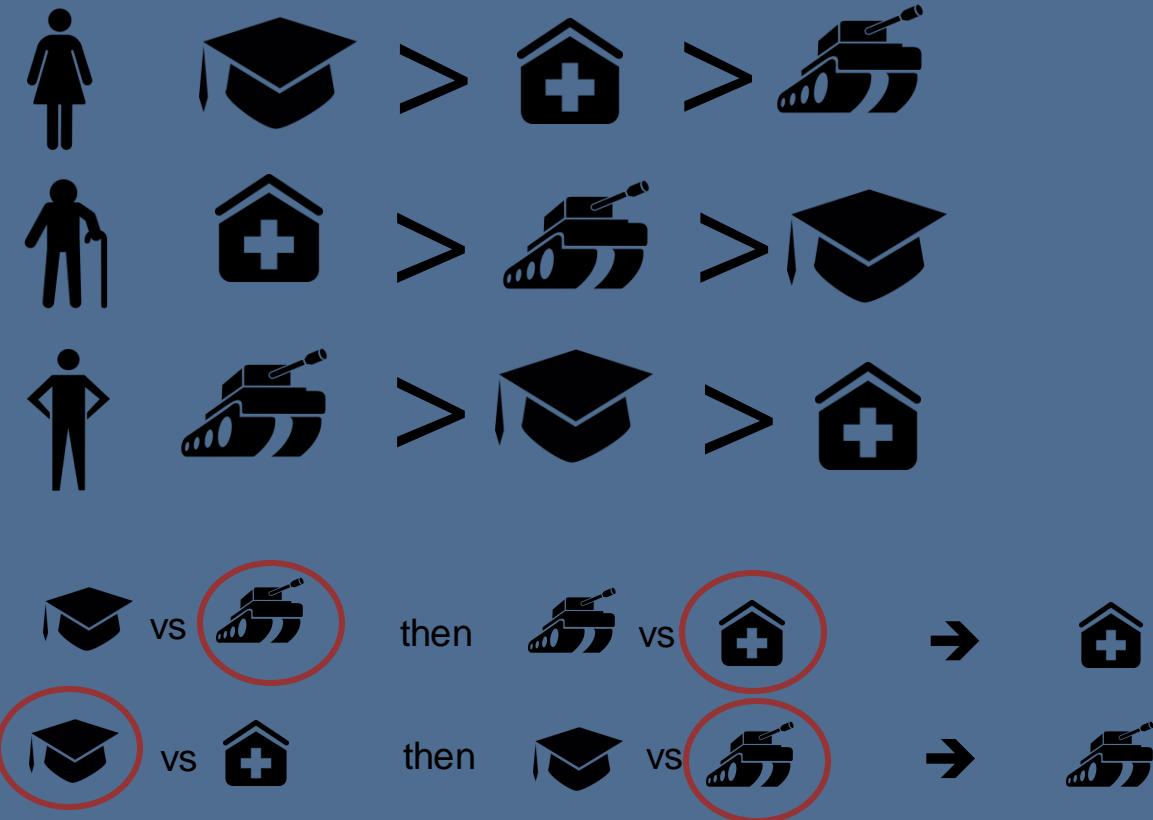


The voting paradox or paradox of the cyclical voting

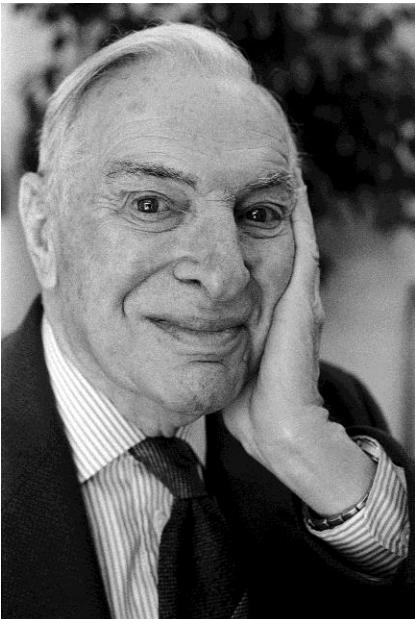


However things become more complicated when dealing with more than two options.

For example national defence, education, and healthcare.



Arrow's impossibility theorem



An ideal political mechanism should have four characteristics:

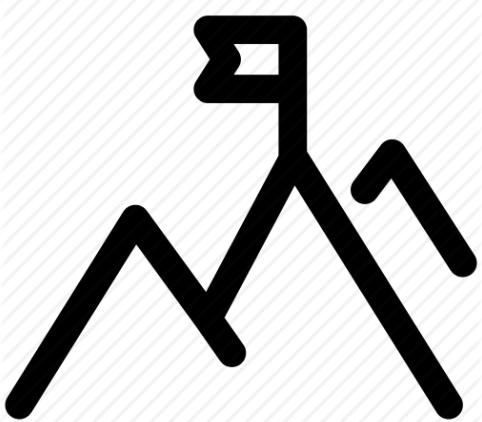
- *Transitivity.* If the rule shows that A is preferred to B, and B is preferred to C, then A should be preferred to C.
- *Nondictatorial choice.* The outcome does not simply reflect the preferences of a single individual.
- *Independence of irrelevant alternative.* The outcome should be independent of irrelevant alternatives. E.g. if we have to choose between A and B, the outcome should not be affected by the existence of a third alternative C.
- *Unrestricted domain.* The mechanism must work no matter what the set of preferences and no matter what the range of alternatives over which choices are to be made.

Nobel Laureate Kenneth Arrow showed that there was no rule that would satisfy all the desired characteristics. This theorem is referred to as **Arrow's impossibility theorem.**

Government should not be expected to act with the same degree of consistency and rationality as an individual.



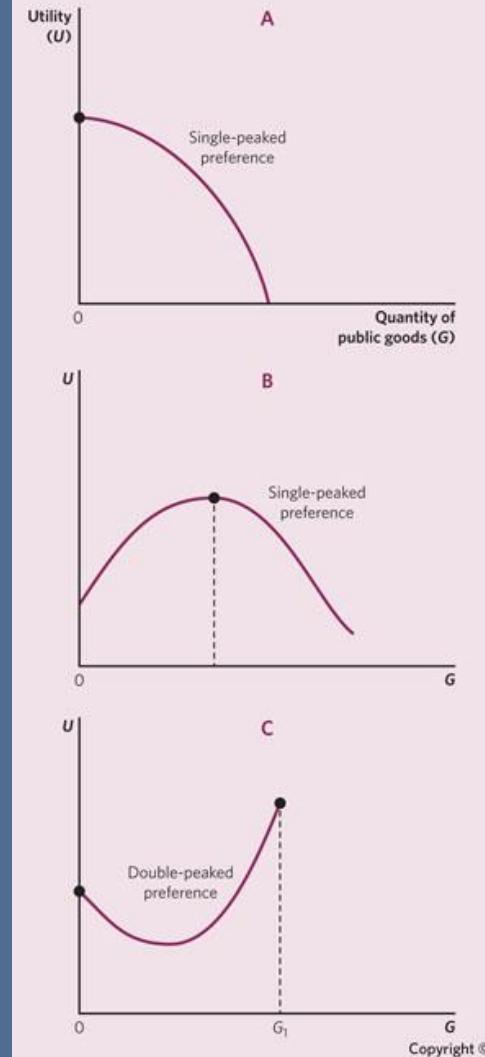
Single-peaked and double peaked preferences



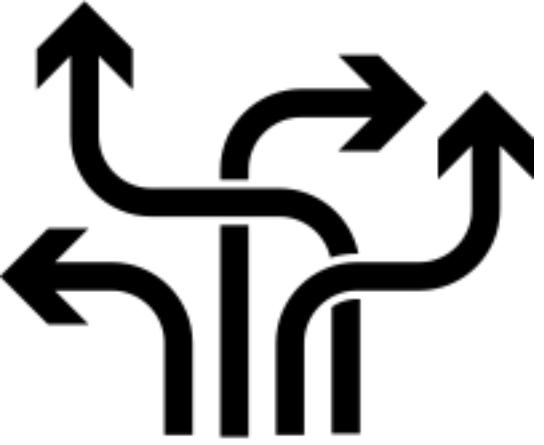
Even if it is imperfect, majority voting can give a determinate outcome when there is a single peaked preference. However this is not always the case.

For instance, if the level of expenditure on education is below a certain minimum level, a rich individual may prefer sending his/her children to private schools. Thus his/her utility decreases with government expenditures up to a critical level at which he/she decides to use public education. For increases beyond that level, the individual derives some benefit (up to the point that taxes offset benefits).

For that individual a high level of expenditure is preferred to no expenditure, but no expenditure is preferred to an intermediate level of expenditure.



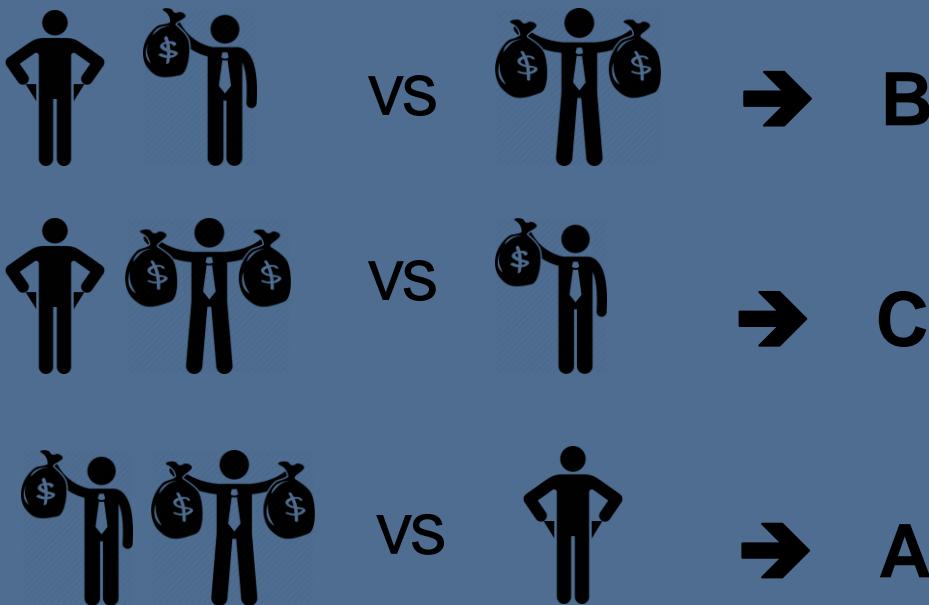
No majority voting equilibrium



For most distribution issues there will not be a majority voting equilibrium.

TABLE 9.1 ALTERNATIVE TAX SCHEDULES

PAID IN TAXES	FRACTION OF INCOME		
	A	B	C
Poor	20%	18%	17%
Middle	20%	18%	21%
Rich	20%	23%	22%



The median voter



When preferences are single-peaked we can rank individuals by their preferences. The individual in the middle of this ranking is known as the **median voter**.

The outcome of majority voting corresponds to the preference of the median voter. This is known as the **median voter theorem**.

In the table below, Jim is the median voter. If any level of spending below \$1,000 is voted against \$1,000, Jim and those who want more than \$1,000 vote for Jim's choice. If any level of spending above \$1,000 is voted against \$1,000, Jim and those who want less than \$1,000 vote for Jim's choice. In both cases, Jim's choice of \$1,000 wins

TABLE 9.2 PREFERRED LEVELS OF EXPENDITURE ON PUBLIC GOODS

LUCY	TOM	JIM	JOHN	JILL
\$600	\$800	\$1000	\$1200	\$1400

Jim is the median voter.

The inefficiency of the majority voting equilibrium



Because the median voter determines the level of expenditure on public goods, we only need to examine how the median voter votes.

For a wide variety of public goods, with proportional or progressive taxation majority voting will result in oversupply.

If income distribution is symmetric (Fig. 9.5. A), the average income will be equal to the income of the median individual.

However income distribution is usually skewed (Fig. 9.5B). As individuals with lower income prefer more public goods, oversupply is likely to occur .

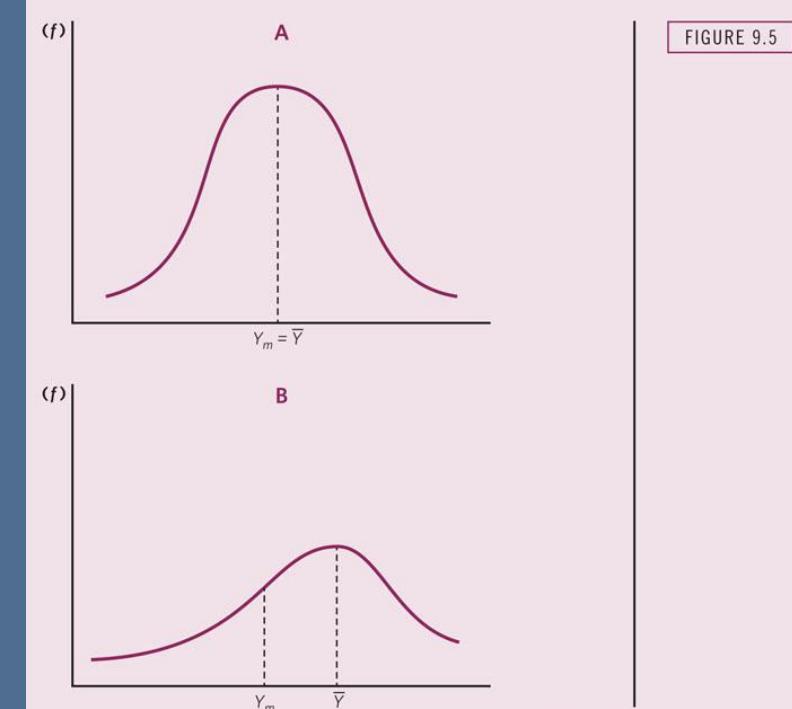
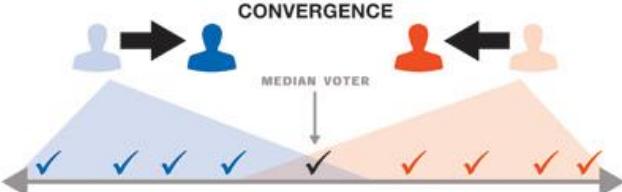
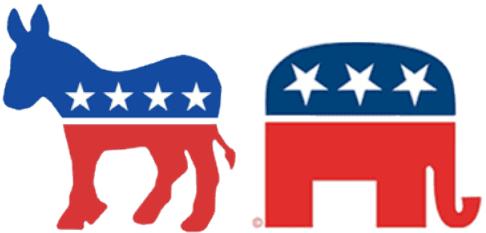


FIGURE 9.5

The two-party system and the median voter



Trying to answer how politicians vote, a natural supposition is that they wish to stay in office and follow a vote maximizing strategy.

Assume that there are two parties R and D. Party R takes the position of the party D on an issue, say public expenditure, as given.

Party R chooses position G_R and between the median voter's choice G_m and G_D to win the majority. Then party D chooses position G'_D between G_m and G_D to win the majority. Then party R can move to G'_R between G_m and G'_D to win and so on. Eventually both parties will converge at G_m .

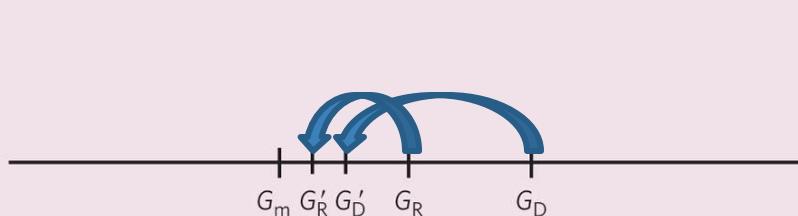


FIGURE 9.6

There may not be a majority voting equilibrium (non single-peaked preferences).

Limitations of the median voter theorem



Some people are liberal in some issues and conservatives in others, thus median voter is not well defined.

Being informed and voting is associated with costs (e.g. in time). The voters whose preferences are near the median voter have little incentive to be politically active and vote if they believe that the political process will reflect their preferences anyway.



There is greater tendency for political activism at the extremes of the political spectrum, which may partially offset the median-directed tendencies.



Politics and Economics

An economic interpretation of political phenomena

In many elections participation rates are low and sensitive to chance occurrences as changes in the weather.

Why do individuals vote?



The reason for this is that benefits of voting for the individual are low. There is little chance that one person will affect the outcome. Moreover, the alternatives may differ so little that the outcome is inconsequential.

However, although in a fully rational calculation, no one would vote as the chance of affecting the outcome (who wins – not by how much) is essentially zero, individuals do vote.

The paradox is resolved by assigning utility to voting itself and participating in the political process. This also implies that voters may not act in the narrow self interested manner we have previously assumed.

SPECIAL INTEREST GROUPS



We call ourselves the Mod Squad. M.O.D.
Merchants of Death.

We have assumed that all votes have the same value. However some votes seem more effective than others due to the political power of special interest groups. Three factors contribute to special interest groups power:

- Individual Benefits
- Group Size
- Selective Incentives

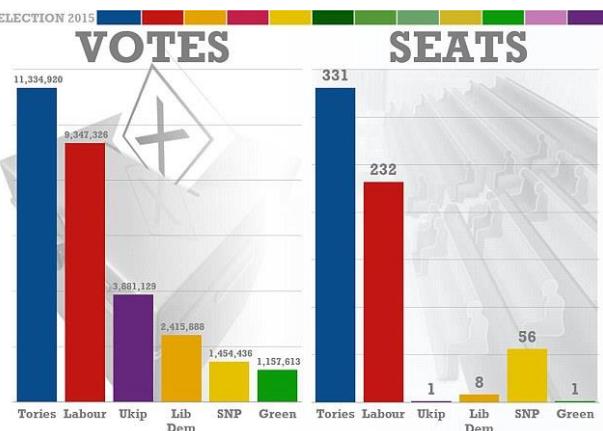
Special interest groups exercise their power through three main mechanisms:

How special interest groups exercise power

1. Through mobilizing their constituencies through a combination of targeted information campaigns and aggressive “get out the vote” efforts.
2. Through providing information to politicians.
3. Through direct and indirect bribery.



The electoral system



The electoral systems can also affect the outcome of voting:

- First Past the Post



- Single Transferable Vote



- Additional Member System



- Two-round System



- Alternative Vote



- Supplementary Vote



- Borda Count



- Party List Proportional Representation



The altruistic politician?



An alternative view holds that many politicians do not behave in the narrow self interested manner we have previously assumed.

In many occasions, politicians seem to act on “principle” voting in a way that is inconsistent not only with their own narrowly defined self-interest, but also with the wishes of their voters.

They thus risk not getting re-elected (although often voters appreciate such behaviour).

However, being altruistic does not guarantee that choices made will be the right ones.



Intro to taxation

Why do we pay taxes?



*People have been complaining
about taxes for centuries.*

Taxes are an involuntary fee levied on individuals or corporations that is enforced by a government entity, whether local, regional or national in order to finance government activities.

Intro to taxation

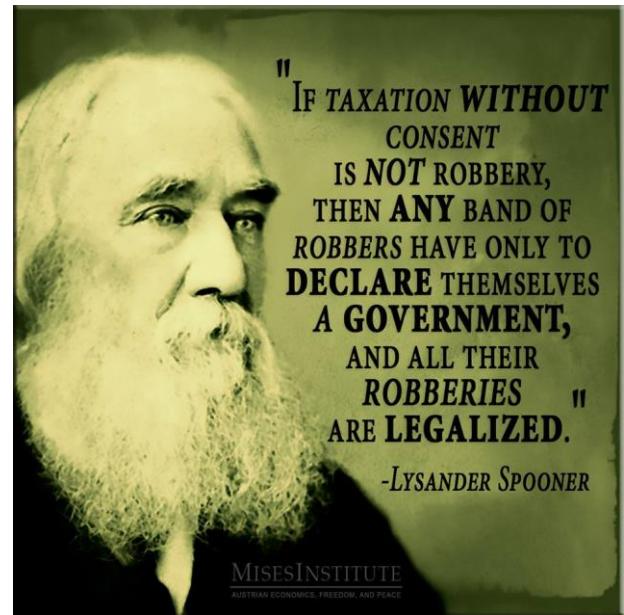


Unlike most transfers of money, which are entered into voluntarily, taxation is compulsory.

In previous classes we showed that government must intervene in order to provide adequate amount of public goods.

We also showed that contributions to support public services need to be compulsory to avoid the free rider problem.

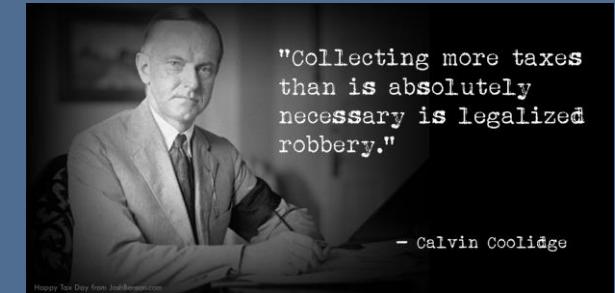
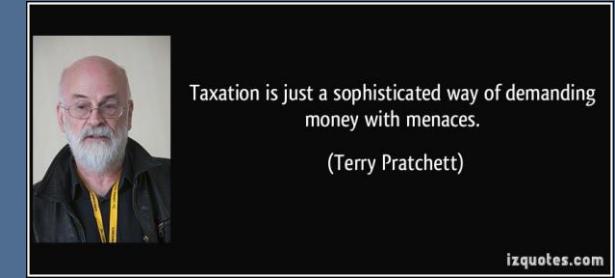
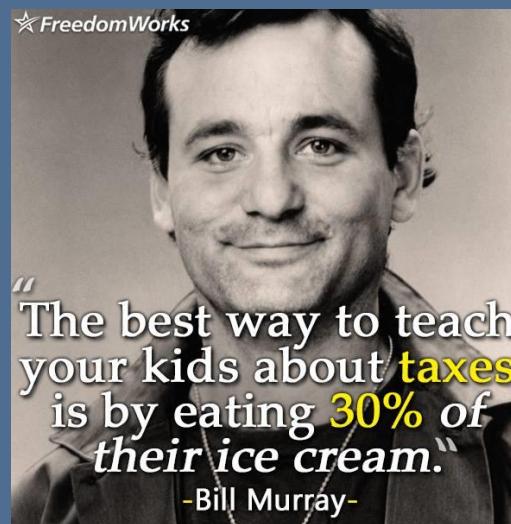
Is taxation theft?



Such forced transfers have been likened to theft.

However there is a major difference: transfers through the government wear the mantle of legality and respectability conferred upon them by the political process.

When the political process in a country becomes detached from the citizenry and its used to transfer resources to the groups in power, the distinction between taxation and theft becomes blurred at best.



Adam Smith's four Principles of Taxation

Adam Smith



It is not very unreasonable that the rich should contribute to the public expense, not only in proportion to their revenue, but something more than in that proportion.

AZ QUOTES

1. Equality: taxes should equally burden all individuals or entities in similar economic circumstances.

- **Equality of sacrifice:** the burden of taxation should involve an equal sacrifice for every individual.
- **Ability to pay:** taxes should be levied according a taxpayer's ability to pay.

2. Economic Efficiency: tax collection efforts should not cost an inordinately high percentage of tax revenues.

3. Convenience: taxes should be enforced in a manner that facilitates voluntary compliance to the maximum extent possible.

4. Certainty/Predictability: collection of taxes should reinforce their inevitability and regularity.

More Principles of Taxation



Adequacy: taxes should be just-enough to generate revenue required for provision of public services.

Broad Basing: taxes should be spread over as wide as possible section of the population, or sectors of economy, to minimize the individual tax burden.

Neutrality: taxes should not favour one group or sector over another, and should not be designed to interfere-with or influence individual decisions-making.

Simplicity: tax assessment and determination should be easy to understand by an average taxpayer.

Effects of taxation



Behavioral Effects



Financial Effects



Organizational Effects



General Equilibrium Effects



Announcement effects



Economy does not adjust automatically to a tax. Often the long term distortions are bigger than the short term distortions, as the economy is able to respond more fully to the new circumstances.

However, in some cases the effects of a tax may be felt even before the tax is imposed, simply upon announcement.

We call those effect **announcement effects**.

For example, the announcement of a future increase in property tax, will impact the construction industry even before tax is imposed.



Distortionary and nondistortionary taxation



A tax is **nondistortionary** if, and only if, there is nothing an individual or firm can do to alter the tax liability. Economists call taxes that are nondistortionary **lump-sum taxes**.

An example would be a head-tax, a tax one has to pay regardless of income, consumption or wealth.



However, most taxes are **distortionary**. If a tax is imposed on income, an individual can reduce his/her liability by simply working less hours. If a tax is imposed on consumption of a product, an individual can reduce his/her liability by simply purchasing less units.



Types of taxation

What is taxed?

The Economist

In 1696 in England, was introduced the Window tax. Houses with more than ten windows had to pay a steep ten shillings. Many houses bricked up their windows to reduce the number which caused health problems. After 156 years, it was repealed in 1851 following campaigners branded it a "tax on health" and "tax on light and air".



In 1698, Russia instituted a beard tax to bring Russian society in line with Western European models. Police could forcibly and publicly shave those who refused to pay the tax.



If you're in a hot air balloon in Kansas but it's tethered to the ground, the experience is taxed at a rate of 6.5%. But if the balloon is set free, it means you're traveling from one place to another (technically considered "air commerce") and therefore the ride is tax-free.



In New York, a bagel by itself is exempt from tax. But if you slice a bagel or smear anything on it, then it's a "prepared food" subject to an 8.875% sales tax.



Direct and Indirect Taxes



There are two broad categories of taxes: **direct taxes** on individuals and corporations and **indirect taxes** on goods and services.

Direct taxes include:

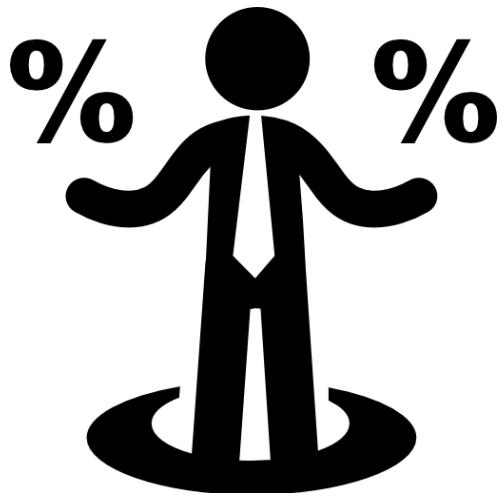
- Taxes on **income**: personal income tax, payroll tax, social security contributions, capital gains tax, corporate tax
- Taxes on **wealth**: estate tax, inheritance tax, solidarity tax

Indirect taxes include:

- Taxes on **Consumption/sales**: VAT, sales tax, excise taxes (tobacco, alcohol etc.)
- Taxes on **Imports/Exports**: tariffs/duties



Per Unit and Ad Valorem Taxes



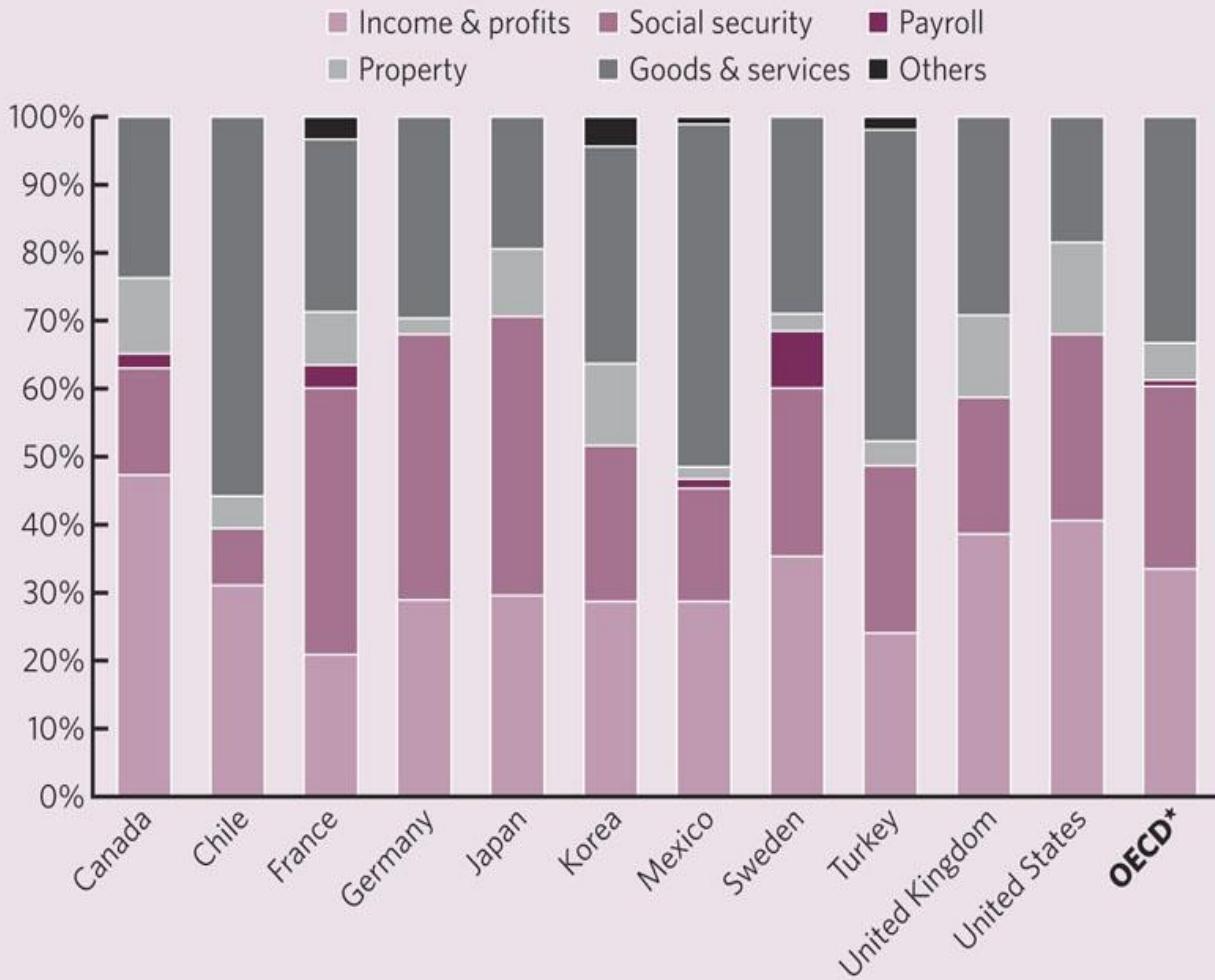
A **per unit tax** is a set amount of tax per unit sold, such as a 10p tax on packets of cigarettes.



In contrast, an **ad valorem tax** is a percentage tax based on the value added by the producer, such as a 20% VAT.



Tax revenues around the world



Some Useful Terms



Credit	Deduction	Deferral
<p>Reduces tax liability dollar-for-dollar. Additionally, some credits are refundable, meaning that a credit in excess of tax liability results in a cash refund.</p>  <p>Example: Taxpayers with children under age 17 potentially can qualify for up to a \$1,000 partially refundable, per child credit, provided their income does not exceed a certain level.</p>	<p>Reduces gross income due to expenses taxpayers incur.</p>  <p>Example: Taxpayers may be able to deduct mortgage interest for owner-occupied homes.</p>	<p>Delays recognition of income or accelerates some deductions otherwise attributable to future years.</p>  <p>Example: Taxpayers may defer paying tax on interest earned on certain U.S. savings bonds until the bonds are redeemed.</p>
Exclusion	Exemption	Preferential tax rate
<p>Excludes income that would otherwise constitute part of a taxpayers gross income.</p>  <p>Example: Employees generally pay no income taxes on contributions that employers make on their behalf for medical insurance premiums.</p>	<p>Reduces gross income for taxpayers because of their status or circumstances.</p>  <p>Example: Credit unions are exempt from federal corporate income taxes.</p>	<p>Reduces tax rates on some forms of income.</p>  <p>Example: Capital gains on certain income are subject to lower tax rates under the individual income tax.</p>

Tax Evasion and Tax Avoidance



Both aim to reduce tax liability.

Tax Evasion is illegal. Breaking the letter and the spirit of the law.

Tax Avoidance is Legal. Breaking the spirit, not the letter of the law.



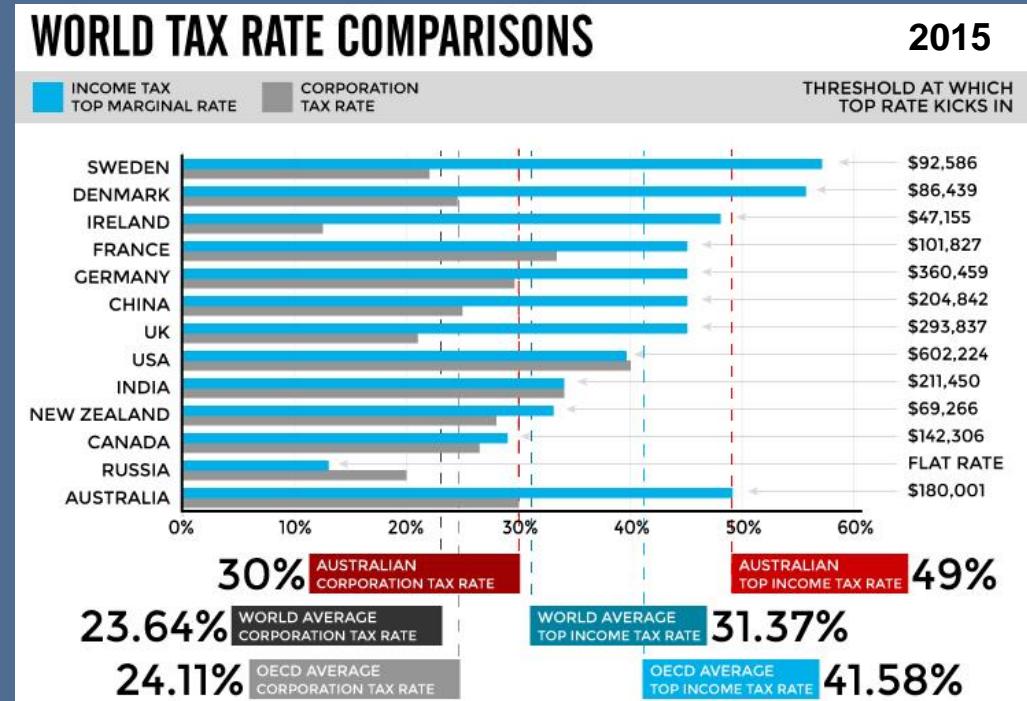
An **income tax** is a tax imposed on individuals or entities (taxpayers) that varies with their respective income or profits (taxable income).

Income tax



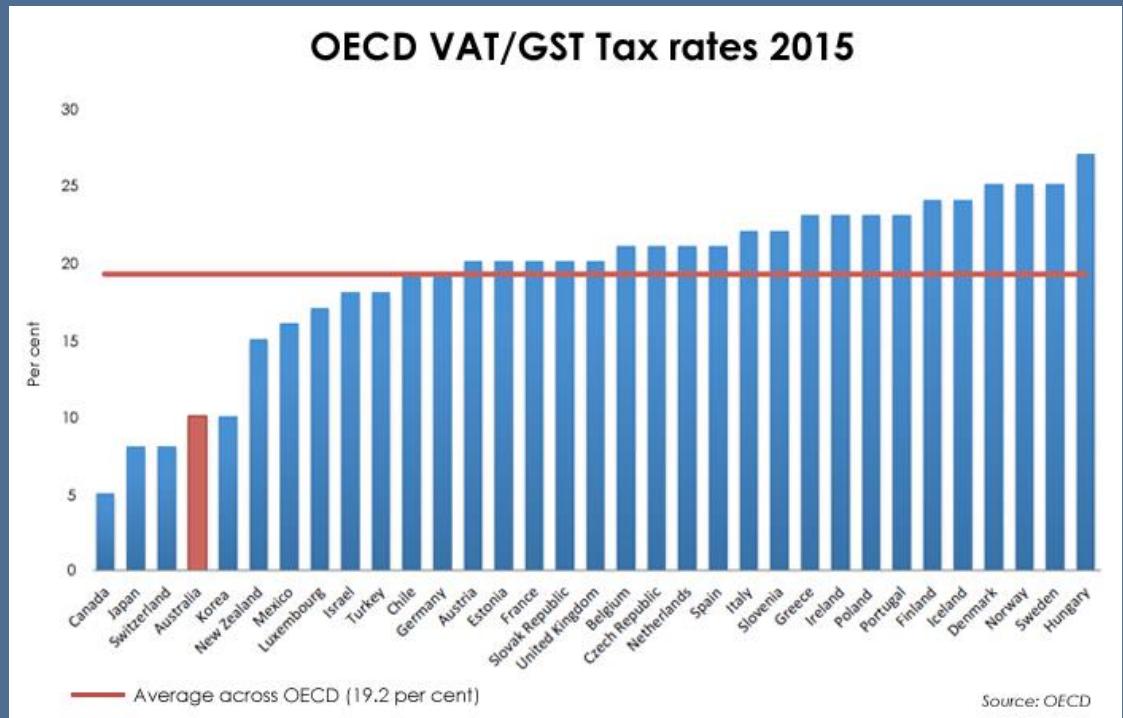
Income can be taxed at source (payment of income is done after the deduction of tax) or can be taxed after receipt of income.

E.g. Pay as you Earn (PAYE) vs Self Assessment.



A **value-added tax (VAT)**, also known in some countries as **goods and services tax (GST)**, is a type of general consumption tax that is collected incrementally, based on the increase in value of a product or service at each stage of production or distribution.

Sales Tax

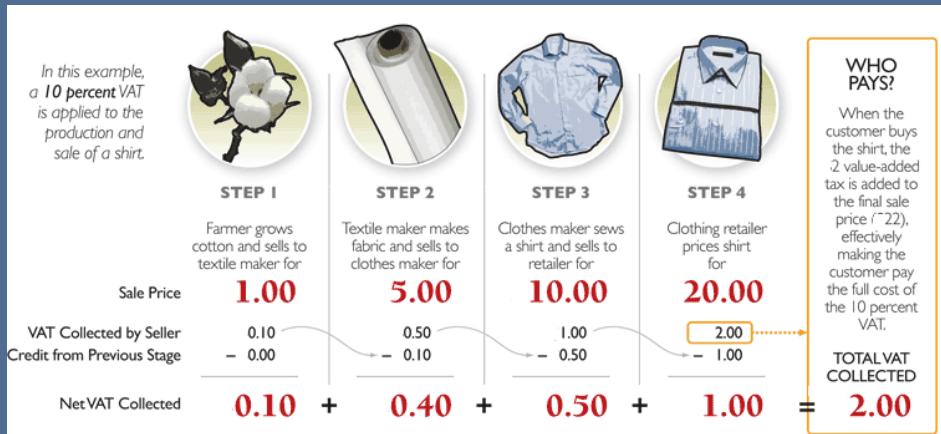


VAT vs Sales Tax



VAT (Value-Added Tax) is collected by all sellers in each stage of the supply chain. Suppliers, manufacturers, distributors and retailers all collect the value added tax on taxable sales. All pay the VAT on their purchases. Businesses must track and document the VAT they pay on purchases that will be resold in order to receive a credit for the VAT paid on their tax return. Tax jurisdictions receive the tax revenue throughout the entire supply chain as opposed to at the sale to the final consumer chain.

In United States there is no VAT (the only OECD country without one). Instead a **sales tax** is collected by the retailer when the final sale in the supply chain is reached via a sale to the end consumer. End consumers pay the sales tax on their purchases. Unlike VAT, sales tax is levied on the total value of goods and services purchased.



Excise Taxes

Tax on item	IRELAND	UK	FINLAND	MALTA	DENMARK	HOLLAND	BELGIUM	POLAND	FRANCE	ITALY	SPAIN
Pint of beer	44p VAT 22%	50p VAT 20%	63p VAT 24%	8p VAT 15%	15p VAT 25%	16p VAT 21%	9p VAT 21%	9p VAT 21%	14p VAT 20%	15p VAT 22%	4p VAT 21%
Bottle of wine	£2.29 VAT 20%	£1.90 VAT 20%	£1.83 VAT 24%	£1.08 VAT 15%	84p VAT 20%	48p VAT 21%	31p VAT 21%	20p VAT 21%	2p VAT 20%	0p VAT 21%	0p VAT 21%
Shot of whisky	54p VAT 20%	46p VAT 20%	58p VAT 20%	17p VAT 20%	26p VAT 20%	21p VAT 20%	27p VAT 20%	17p VAT 20%	22p VAT 20%	13p VAT 20%	12p VAT 21%

An earmarked tax is a tax whose revenues are by law reserved solely for a specific usage.



Excise taxes or duties are taxes paid when purchases are made on a specific good or service. Often in attempt to reduce its consumption. Excise taxes are sometimes referred to as sin taxes.

Although referred to as taxes, most times they are duties as they are levied at the moment of manufacture, rather than at sale. An excise is typically a per unit tax that applies to a narrow range of products and is typically heavier, accounting for a higher fraction of the retail price of the targeted products.

As a deterrent, excise is typically directed towards three broad categories of harm:

- health risks
- environmental damage
- socially damaging / morally objectionable activity



Monies raised through excise may be **earmarked** for redress of specific social costs commonly associated with the product or service on which it is levied.

A **wealth tax** (also called a capital tax or equity tax) is a levy on the total value of personal assets, including: bank deposits, real estate, assets in insurance and pension plans, ownership of unincorporated businesses, financial securities, and personal trusts.

Wealth Tax



"One day, son, all this will be
yours - including the
inheritance tax bill."

Search ID: ndl0954



Progressive Taxation



Tax Systems

Progressive, Proportional and Regressive

Tax rate, average tax rate and marginal tax rate



Tax rate is the ratio (usually expressed as a percentage) at which a business or person is taxed.

Tax liability (T) is the total amount of tax due.

Tax base (B) is the measure upon which the assessment or determination of tax liability is based. E.g. income is the tax base for income tax, value is the tax base for property tax

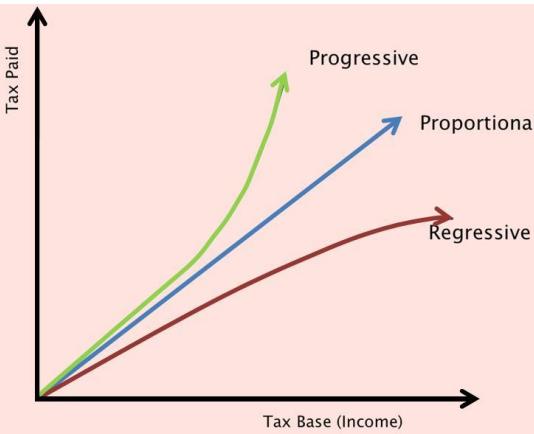
Average tax rate (t) is the ratio of the total amount of taxes paid to the total tax base, often expressed as a percentage

$$t = T/B$$

Marginal tax rate (MTR or t') is the tax rate an individual would pay on one additional dollar of income. It is the ratio of change in tax liability to the change in tax base

$$MTR = \Delta T / \Delta B$$

Progressive, Proportional and Regressive Taxation



A **progressive tax** is a tax imposed so that the tax rate increases as the taxable amount increases.

For a progressive tax $MTR > t$

- Personal Income Tax is usually a progressive tax

A **proportional tax** is a tax imposed so that the tax rate is fixed, with no change as the taxable base amount increases or decreases.

For a proportional tax $MTR = t$

- VAT and Corporate Tax are often proportional taxes

A **regressive tax** is a tax imposed so that the tax rate decreases as the amount subject to taxation increases.

For a regressive tax $MTR < t$

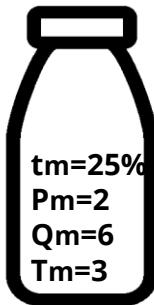
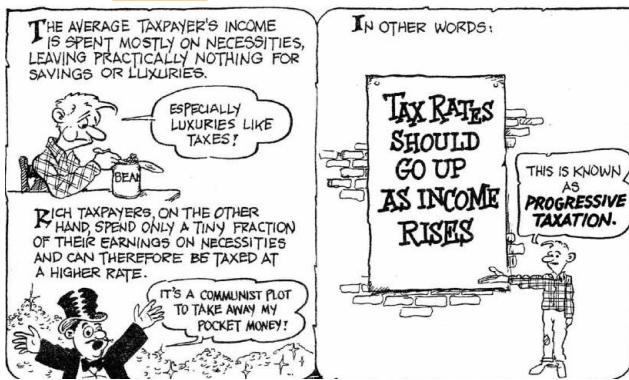
- National Insurance Contributions in UK have a regressive character as there is a cap above which you pay a lower rate

Arguments against progressive taxation



- *Progressive taxation generates a more complicated and less applicable tax system*
- *In a democratic society progressive taxation might lead to politically irresponsible solutions (tyranny of the majority / tyranny of the masses)*

Arguments for Progressive Taxation



$tm = 25\%$
 $Pm = 2$
 $Qm = 6$
 $Tm = 3$

- *Progressive taxation is an automatic stabilizer for the economy.* Progressiveness makes smoother the fluctuations of the economic cycle. During the recovery/growth phase progressive tax (T) increases faster than income (Y), so the disposable income (income after tax) increases slower. Of course the opposite happens during the recession.
- *People with higher income have more opportunities to gain income.* For example, some investments are only available to people with a minimum amount to invest.
- *The needs covered with further income increases have a lower value from a societal perspective.*
- *Progressive taxation counterbalances other taxes which are essentially regressive, like VAT and many consumption taxes.*



$Y = 100$
 $T = 3$
 $t = 3\%$



$Y = 200$
 $T = 3$
 $t = 1.5\%$



$Y = 600$
 $T = 3$
 $t = 0.5\%$



Tax Incidence

Who pays the tax?

Tax burden and tax incidence, tax shifting



The **tax burden** is the true economic weight of a tax. Economists distinguish between those who bear the burden of a tax and those on whom the tax is imposed or levied. The burden is not just the quantity of tax paid (directly or indirectly), but the magnitude of the lost consumer or producer surplus. The concepts are related but different. A £1,000/pint of beer tax will raise no revenues (sales will stop), but will reduce both consumer and producer surplus.

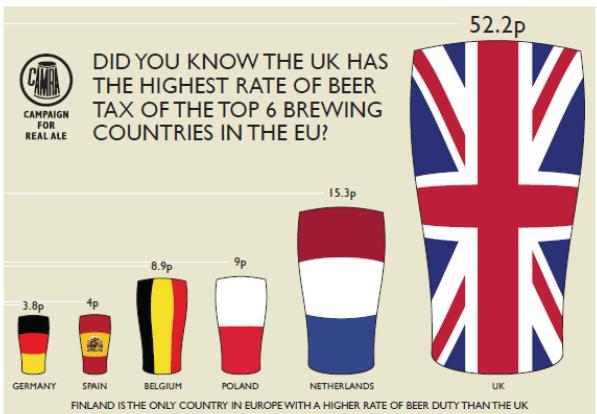
Tax incidence is a term used for the analysis of the effect of a particular tax on the distribution of economic welfare. (*What is the incidence of the tax? = Who actually pays the tax?*)

A tax **shifts forward** when the burden falls on the consumers than the suppliers.

A tax **shifts backwards** when the burden falls on a production factor.

There might be full shift, partial shift, or no shift.

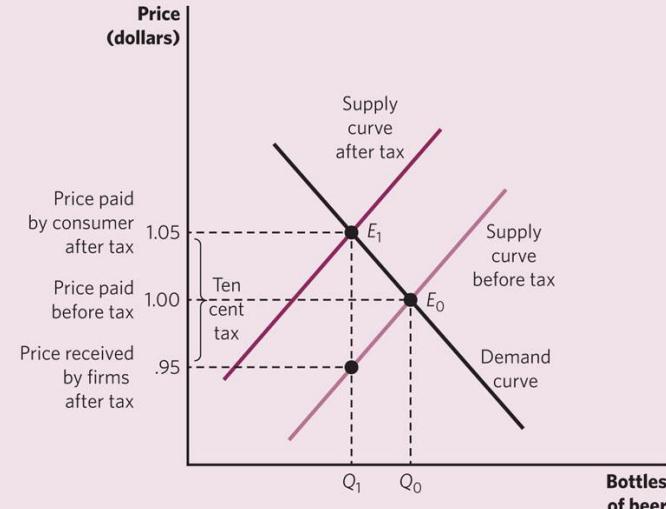
The impact of a tax on market equilibrium



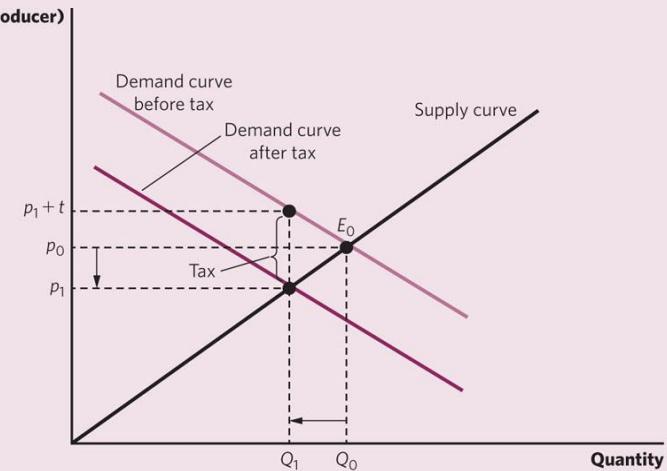
The graphs show how a tax of 10 cents per bottle of beer (or 10% of price) impacts the market.

The effects of a tax can be seen as either an upward shift in the supply curve (Fig. 18.2) or as a downward shift in the demand curve (Fig. 18.3).

FIGURE 18.2



Copyright © 2015, W. W. Norton & Company, Inc.



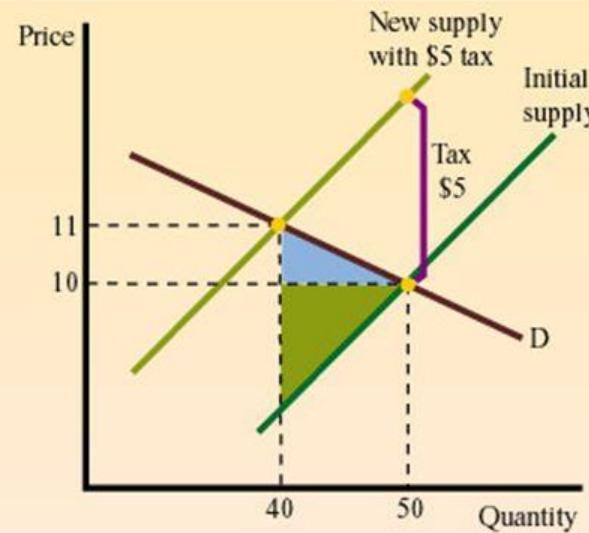
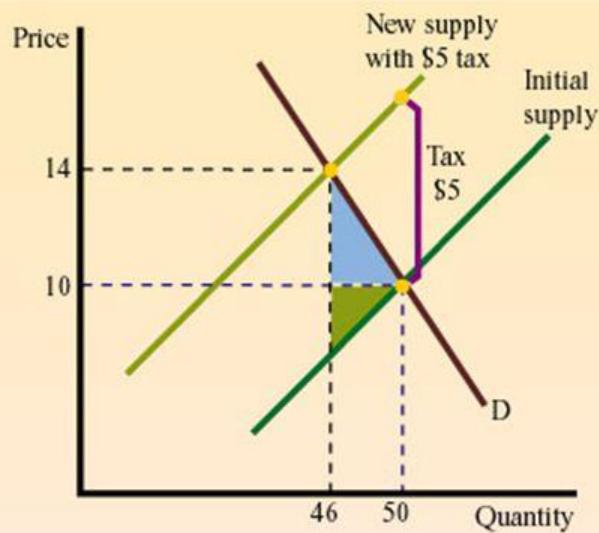
Copyright © 2015, W. W. Norton & Company, Inc.

Tax Shifting: Forward and Backward

Tax Shifting and Elasticity

The relative price elasticity of supply and demand will determine the incidence of a tax.

- When demand is relatively **inelastic**, the tax burden is forward-shifted.
- When demand is relatively **elastic**, the tax burden is backward-shifted.



Elasticity of Supply and Demand – Tax borne by consumers

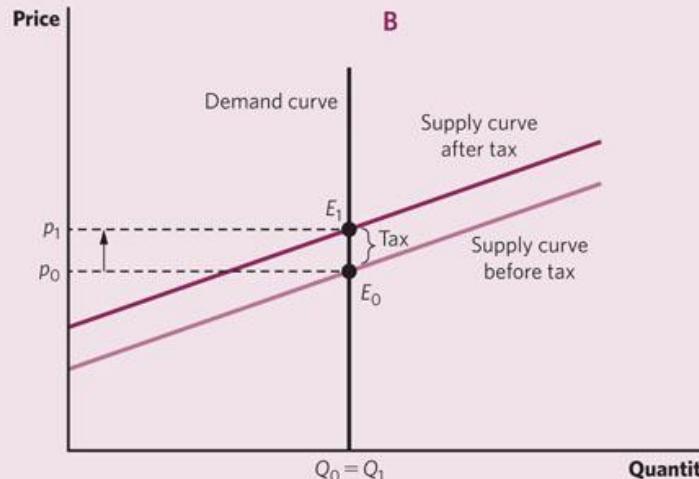
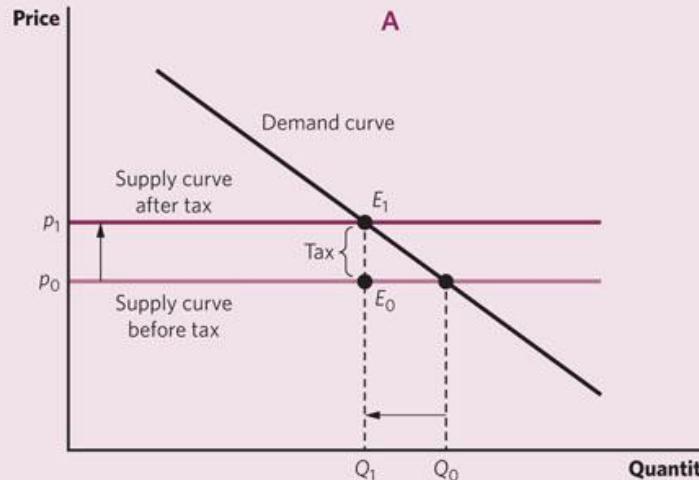


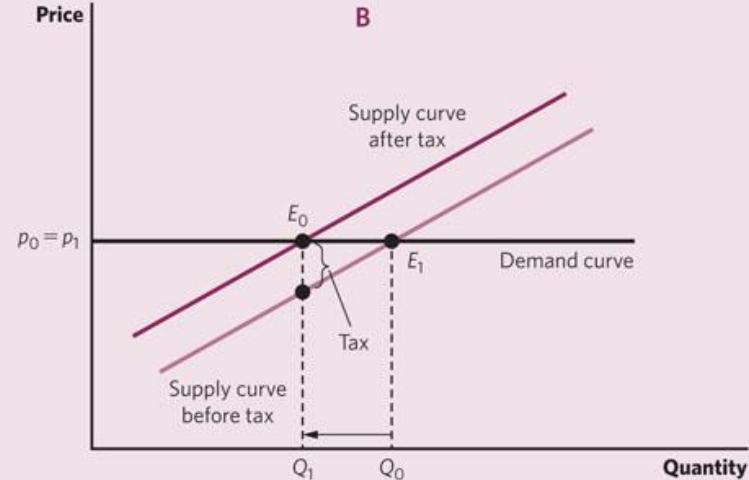
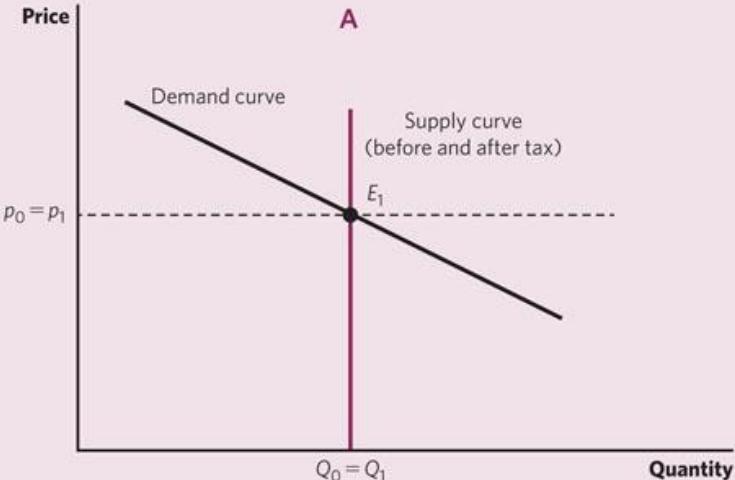
FIGURE 18.5



Elasticity of Supply and Demand – Tax borne by Suppliers



FIGURE 18.6





Intro to Social Insurance

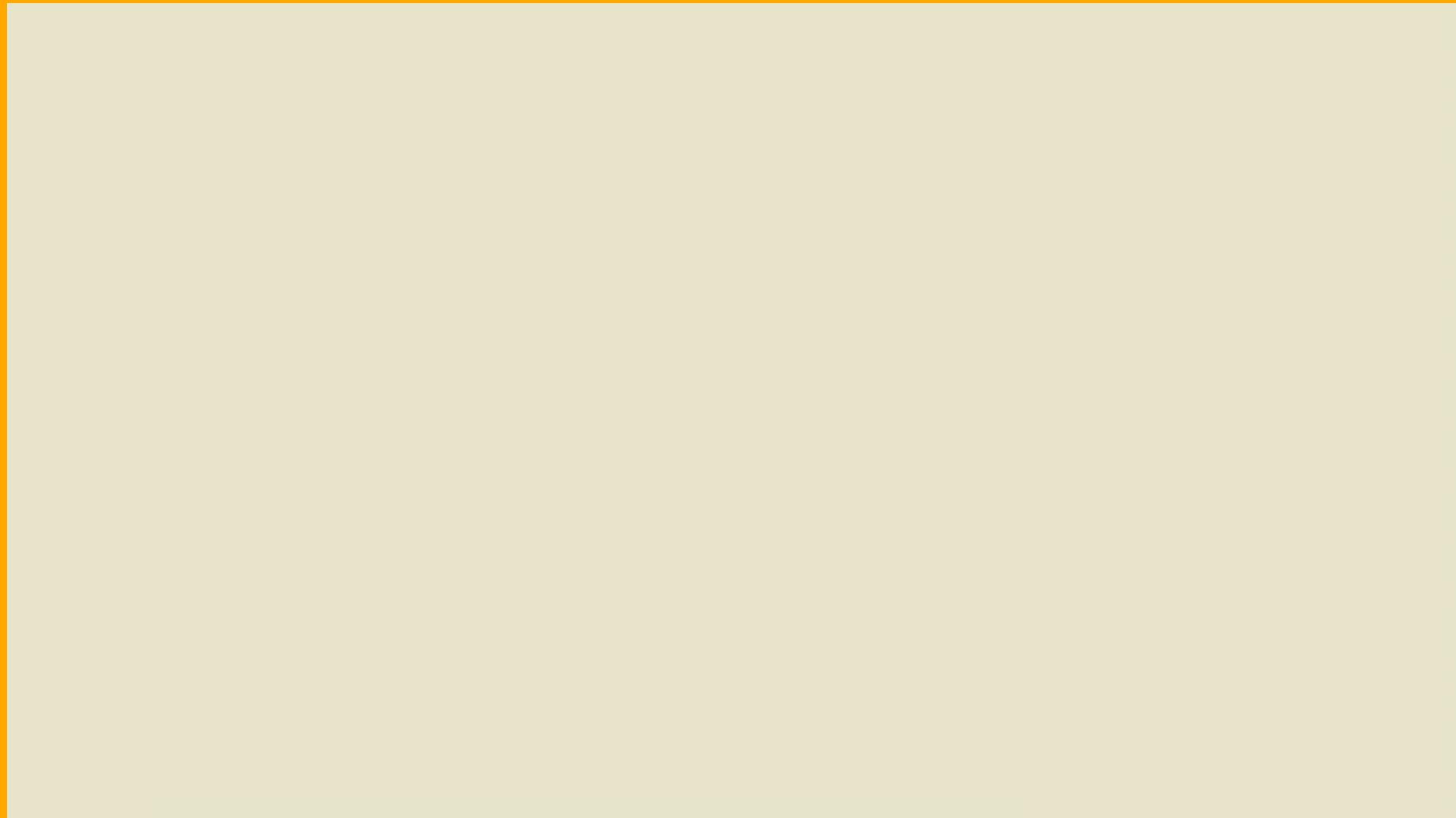
What is Social Insurance?

Social Insurance or **Social Security** are terms to describe the actions taken by governments to provide social protection to the people, and especially to the aged, the unemployed, and the disabled.

Social Insurance

The most important form of social insurance around the world is retirement insurance, which is provided through **pension systems**.





Private Insurance Problems

Many private insurance products are available (e.g. car insurance, life insurance, home insurance). However there are certain issues when it comes to private provision of retirement insurance.

High Transaction Costs. Private insurance companies spend a lot of money to analyse each individual's risk and to market their products. Governments can make the purchase of social insurance compulsory.

Risk Mitigation. Inflation or poor stock market performance can be detrimental to private insurance. A government can fill the gap using public funds and can spread the cost through generations.

Adverse Selection. A private insurance would be most likely purchased by those who are more likely to use it (those in poor health or willing to retire early). Universal insurance achieves risk diversification.

Moral Hazard. Knowing that income is insured at retirement age and to an extent before that age, someone could be incentivized to quit working although he/she is capable of continuing (governments face the same problem).

Even if private markets were efficient in providing retirement insurance, remains a rationale for government action.

Social Insurance as a Merit Good



© Getty Images

If society does not want its senior members suffering due to their poor saving choices, retirement insurance is seen as a merit good and government can enforce a system where everyone must purchase a minimum amount of it.



Fully funded vs Pay-as-you-go system

“State”

Pay-as-you-go

- current employees contributions cover the current benefits of pensioners

DB (Defined Benefit)

- Pensioners benefits are defined by law

Mostly managed by state



“Private”

Fully funded

- each participant accumulates capital, and the capital plus capital gains (interest, price) backs his/her pension

DC (Defined Contribution)

- Pensioners benefits are defined by the amount invested

Mostly managed by private pension funds



A pension system in which each age group's pension is supported by its own contributions is called a **fully funded system**.

Private pension systems are usually fully funded. Individuals contribute to a fund that is used to provide for their pensions in retirement.



A pension system in which the payroll taxes of those in employment today pay for the benefits of those retired today is called a pay-as-you-go system.

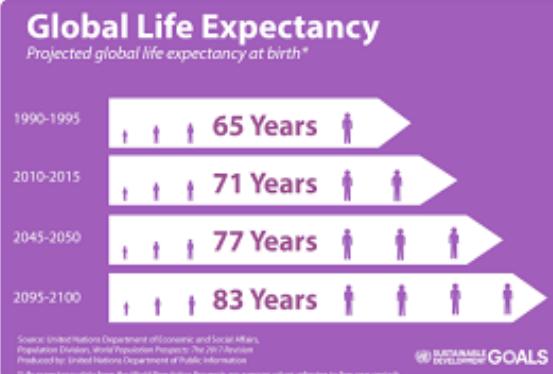
Most countries in continental Europe have a pure or (most likely) a modified pay-as-you-go system.



Advantages

- Low initial cost
- Less affected by market fluctuations

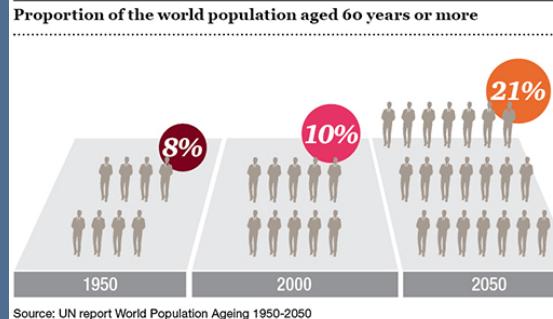
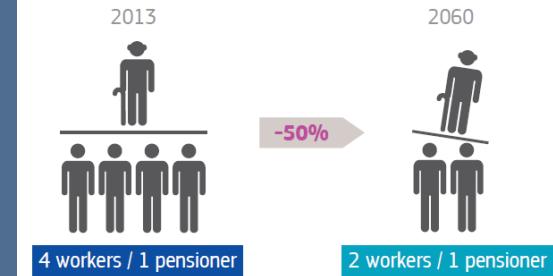
Pay-as-you-go advantages and problems



But...

- People live longer
- People in developed world have less children
- More people go to higher education

The ratio of workers to pensioners will decrease



Pay-as-you-go Challenges

What can be done?

- Reduce the number of pensioners
- Reduce benefits
- Increase contributions
- Increase workforce



Fully funded



Advantages

- No direct negative impact on public debt or deficit.
- Individual responsibility

But...

- Market fluctuations (e.g. stock market) and inflation might be detrimental to pensions
- High transition cost

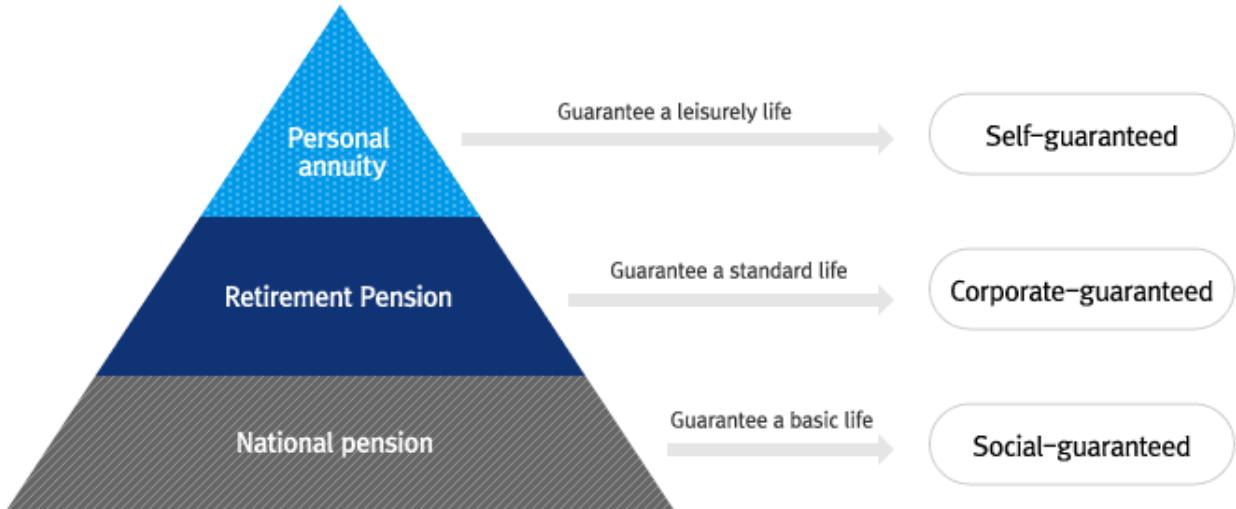
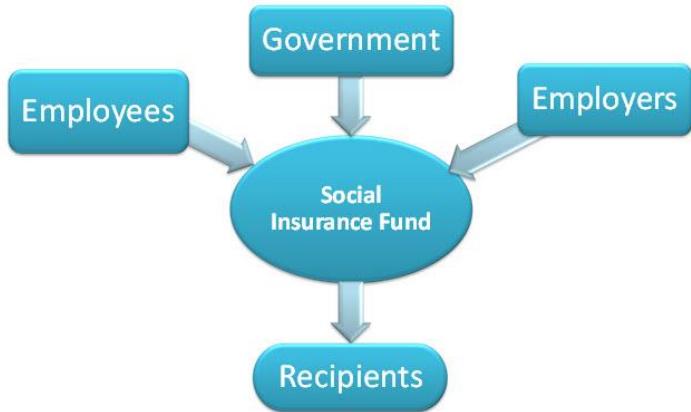
The three pillars/tiers

Contributions from 6 April 2019: £40 extra 'free' money

You'll get tax relief £10
Your employer contributes £30
You contribute £40



= £80



The 3-tier structure of guaranteeing one's later life recommended by OECD and World Bank



Intro to inequality?

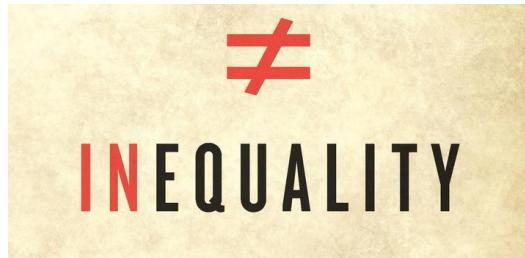
What is Inequality? Causes and impact.

Inequality is the difference in social status, wealth, or opportunity between people or groups (Collins Dictionary)

What is inequality?

The unfair situation in society when some people have more opportunities, money, etc. than other people (Cambridge English Dictionary)

Inequality is the absence of equality



Is inequality good?

● Greed is good.
Greed is right,
greed works.
Greed clarifies,
cuts through, and
captures the
essence of the
evolutionary spirit ●

Gordon Gekko, played by
Michael Douglas (above) in
the film Wall Street, 1987

● We have to
accept that
inequality is a
way of achiev-
ing greater
opportunity
and prosperity
for all ●

Lord Griffiths,
vice chairman of
Goldman Sachs, 2009

Some inequality might be useful to boost growth. People put more effort when the benefits increase disproportionately.

But what kind of inequality we need, and how much?



Inequality of opportunity, inequality of effort, and inequality of outcome



Inequality of opportunity refers to that inequality stemming from factors, called circumstances, beyond the scope of individual responsibility, like race and socio-economic background.

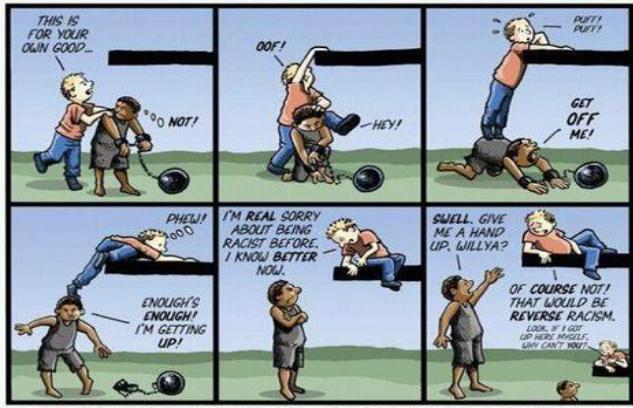
Inequality of effort refers to that inequality stemming from factors, called effort, within the scope of individual responsibility, like occupational choice, number of hours worked or investment in human capital.

Inequality of outcome refers to the extent to which outcomes like income, wealth, welfare is distributed in an uneven manner among a population.

Thus, inequality of outcome or total inequality can be seen as a combination of inequality of effort and inequality of opportunity.

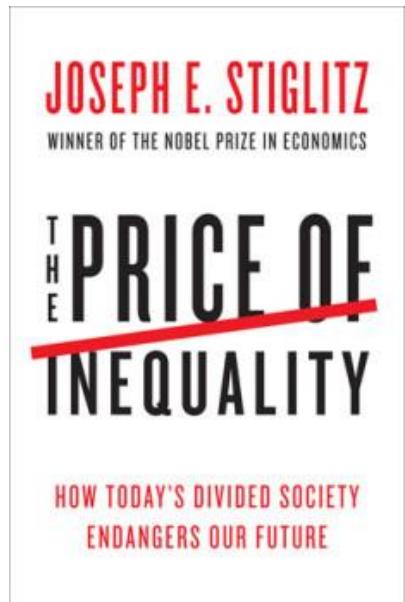
In a well-functioning market economy, opportunities to receive an education, have a good job and earn sufficient income should not be limited on the basis of a person's gender, race, place of birth or parental background.

Opportunity Inequality





Shall we only tackle opportunity inequality?



Only few people would argue that inequality of opportunity should not be tackled.

But many would argue that the reduction of inequality should be limited to that.

However, there are good reasons, why we should look at inequality of outcome, even if this is due to effort inequality.

Why should we care about outcome inequality?



Three main reasons:

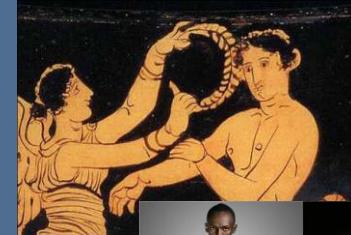
First, we cannot ignore those of whom the outcome is hardship – even if equality of opportunity exists.



Second, we need to distinguish between competitive and non competitive equality of opportunity.

Non competitive equality of opportunity ensures that all people have equal chance to fulfil their independent life projects.

Competitive equality of opportunity means only that we all have an equal chance to take part in a race, where there are unequal prices. The price structure is largely socially constructed.



Third, today's outcome inequality is tomorrow's opportunity inequality.



The Impact of Inequality



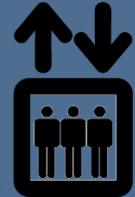
Economic

Less equal societies have less stable economies. High levels of income inequality are linked to economic instability, financial crisis, debt and inflation.



Social Mobility and Education

Unequal societies have less social mobility and lower scores in maths, reading and science.



Crime

Inequality increases property crime and violent crime.



Health

Living in an unequal society causes stress and status anxiety, which may damage your health. In more equal societies people live longer, are less likely to be mentally ill or obese and there are lower rates of infant mortality.

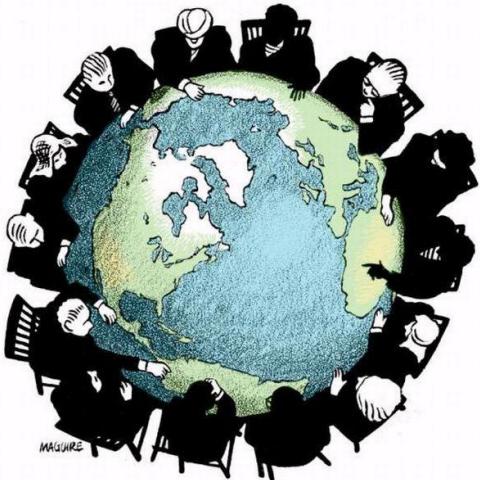


Trust, Participation, Attitudes and Happiness

People in less equal societies are less likely to trust each other, less likely to engage in social or civic participation, and less likely to say they're happy.



Economic Factors contributing to Inequality



Globalization

Technological change

Growth of financial services

Change in pay norms

Reduced role of trade unions

Scaling back of the redistributive taxation and the welfare state

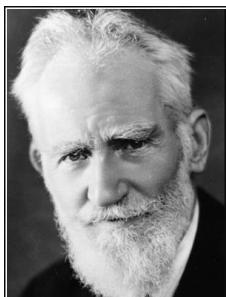




Measuring different forms of inequality

Quintiles, Deciles, Lorenz, and Gini

Income Inequality



Idiots are always in favour of inequality of income (their only chance of eminence), and the really great in favour of equality.

— George Bernard Shaw —

AZ QUOTES

Income inequality refers to the extent to which income is distributed in an uneven manner among a population.

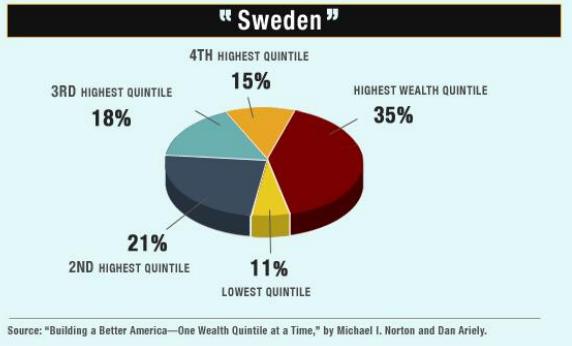
Measuring methods

- Quintiles and Deciles
- Lorenz Curve
- Gini Coefficients

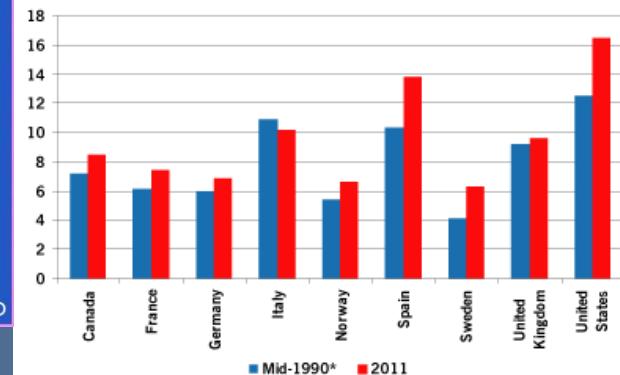
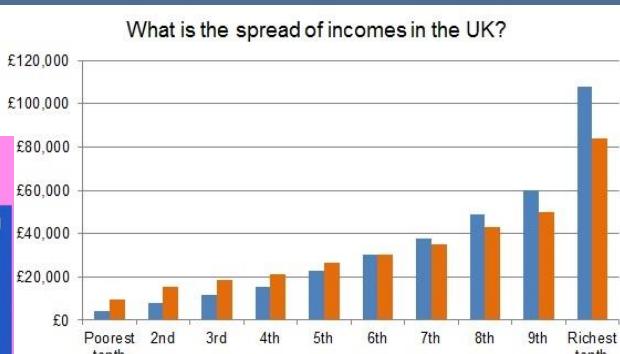
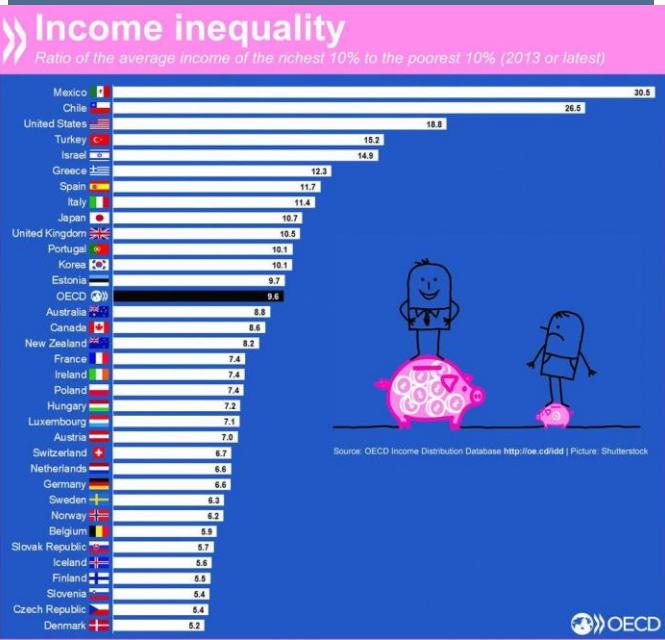
Divide the population into successive quintiles or deciles according to ascending income levels and then determine the proportion of N.I received by each income group

Common measure of income inequality is the ratio of incomes received by the top 20% and bottom 40% of the population

Quintiles and Deciles



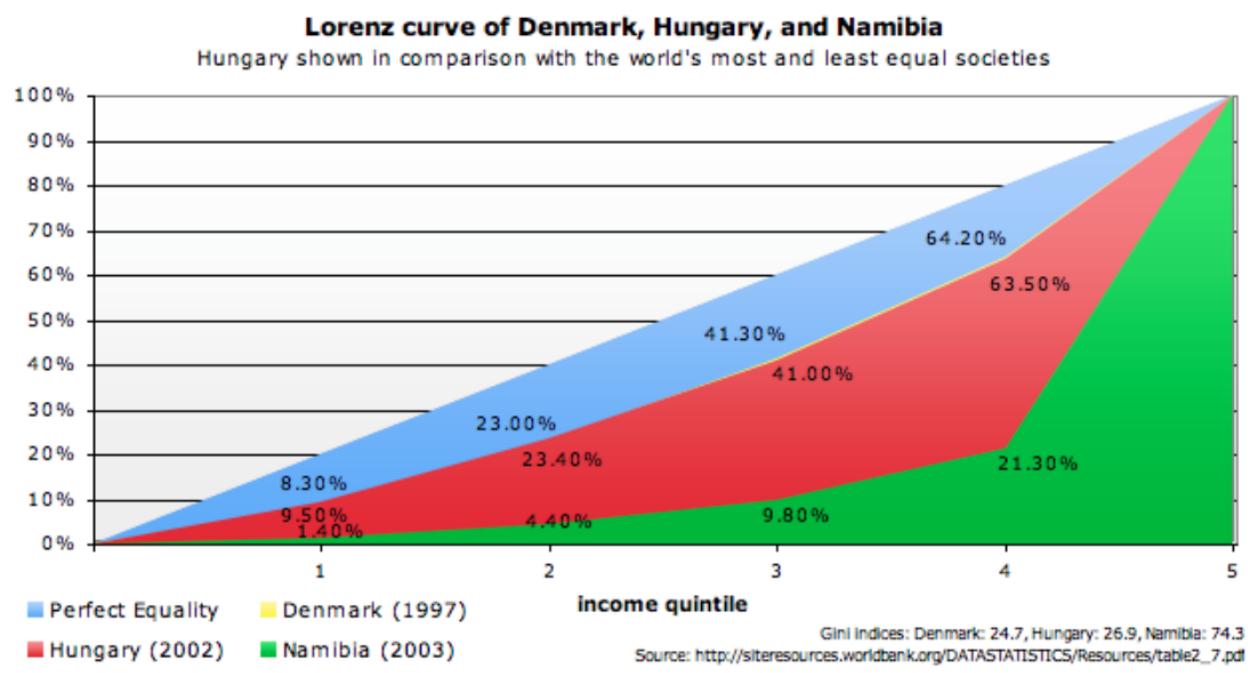
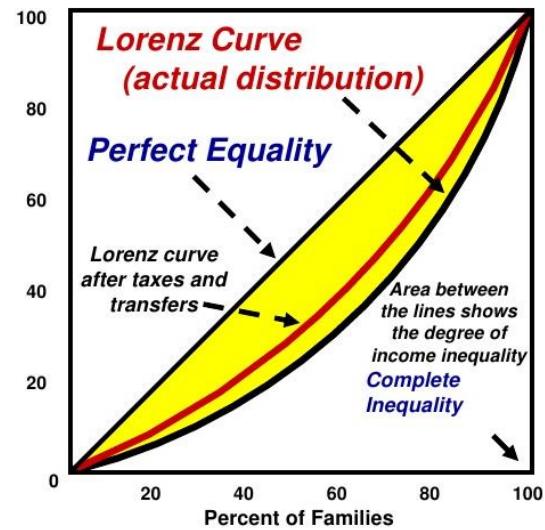
Divide the population into successive quintiles or deciles according to ascending income levels and then determine the proportion of N.I received by each income group
 Common measure of income inequality is the ratio of incomes received by the top 20% and bottom 40% of the population



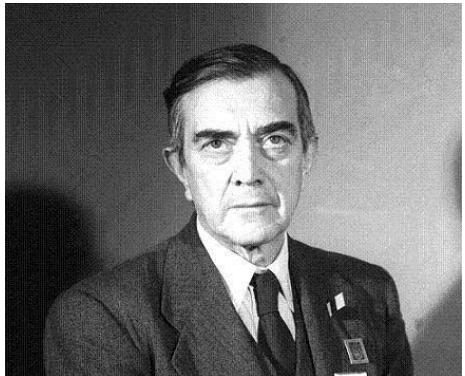
Lorenz curves show the actual quantitative relationship between the percentage of income recipients and the percentage of total income they received during a time period. They depict the variance of the size distribution of income from perfect equality

Lorenz curves

THE LORENZ CURVE



Gini coefficient

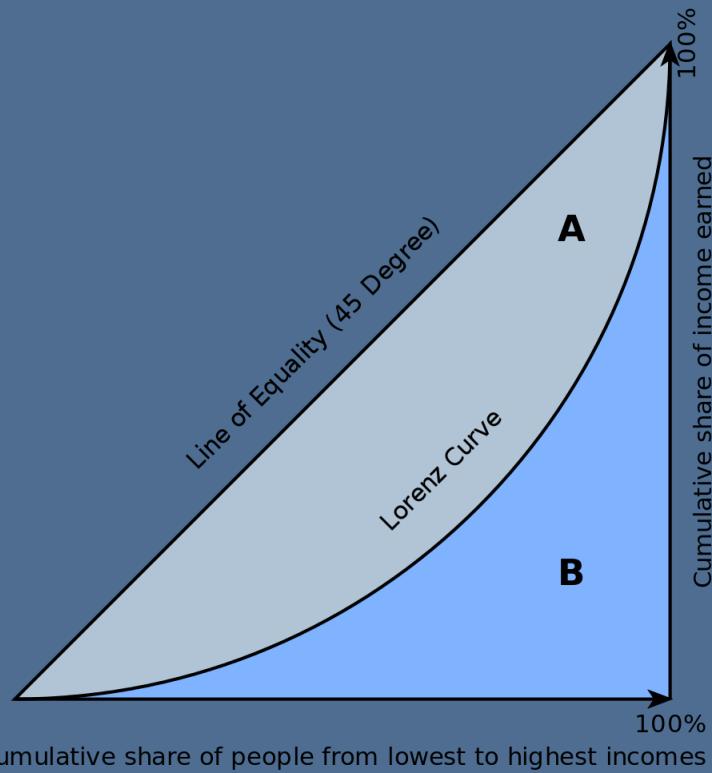


Corrado Gini (1884-1965)

Is measured graphically by dividing the area between the perfect equality line and the Lorenz curve by the total area lying to the right of the equality line in a Lorenz curve diagram. Ranges in value from 0 (perfect equality) to 1 (perfect inequality).

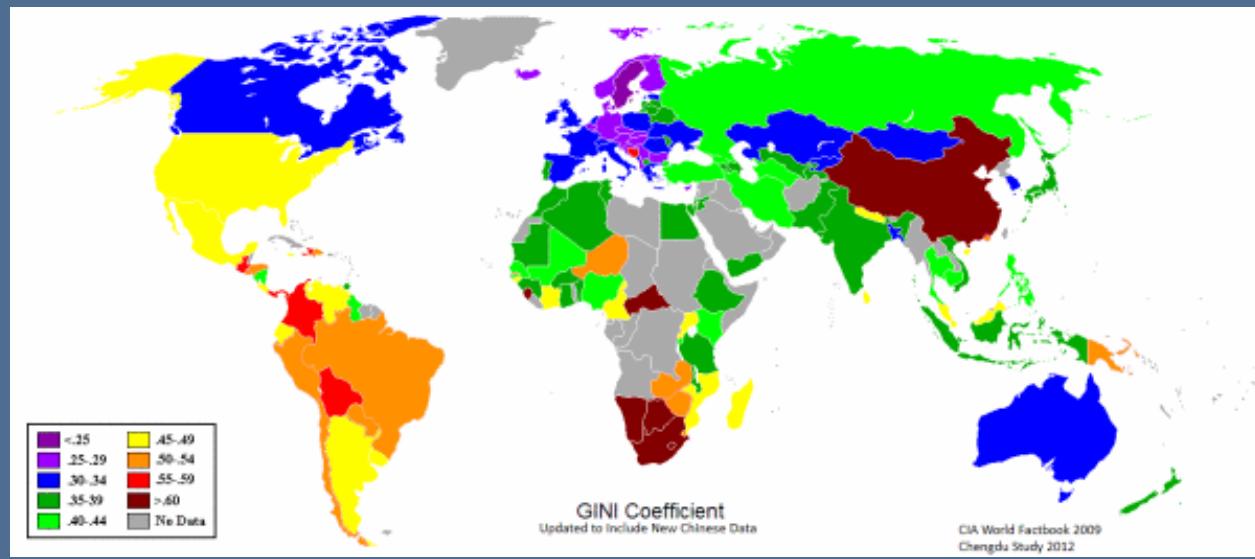
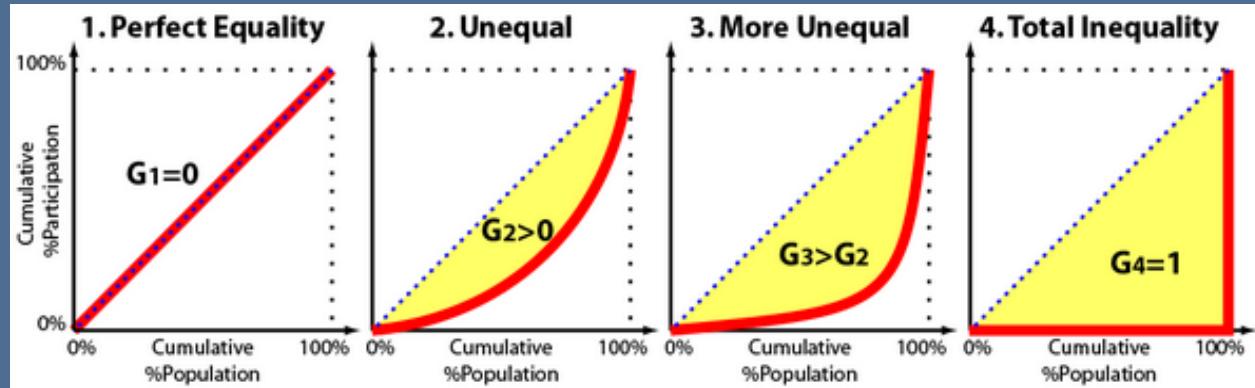
Gini Coefficient

$$G = \frac{A}{A+B}$$

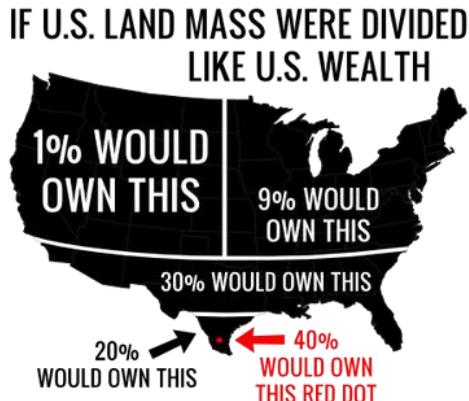


Cumulative share of people from lowest to highest incomes

Inequality around the world

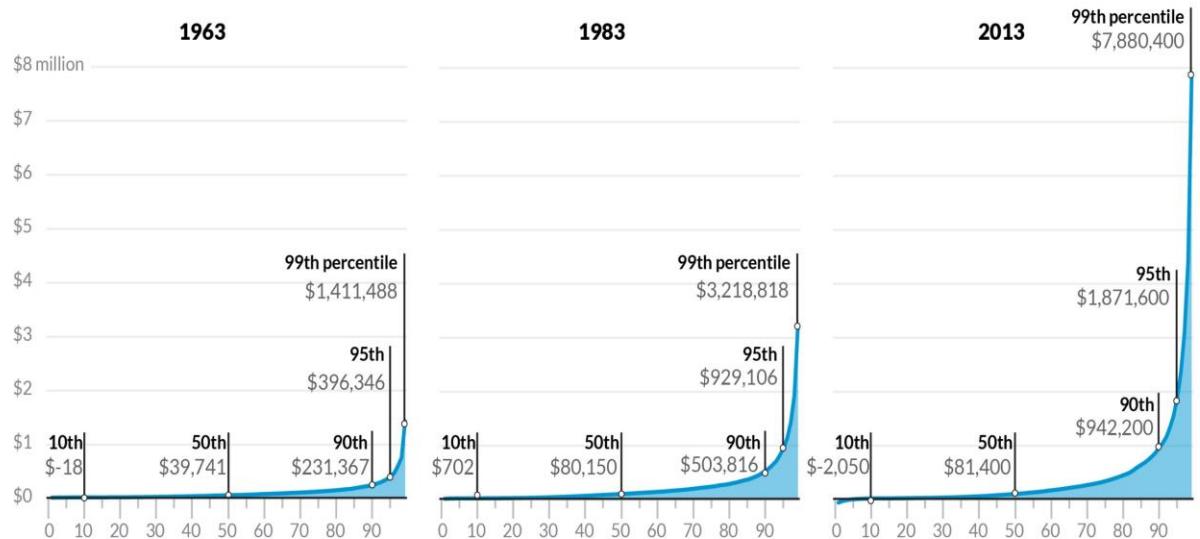


Wealth Inequality



Wealth inequality (or wealth gap) is the unequal distribution of assets among residents. Wealth includes the values of homes, automobiles, personal valuables, businesses, savings, and investments.

Percentiles of Family Wealth, 1963–2013



Sources: Urban Institute calculations from Survey of Financial Characteristics of Consumers 1962 (December 31), Survey of Changes in Family Finances 1963, and Survey of Consumer Finances 1983 and 2013.

Note: 2013 dollars.

URBAN INSTITUTE

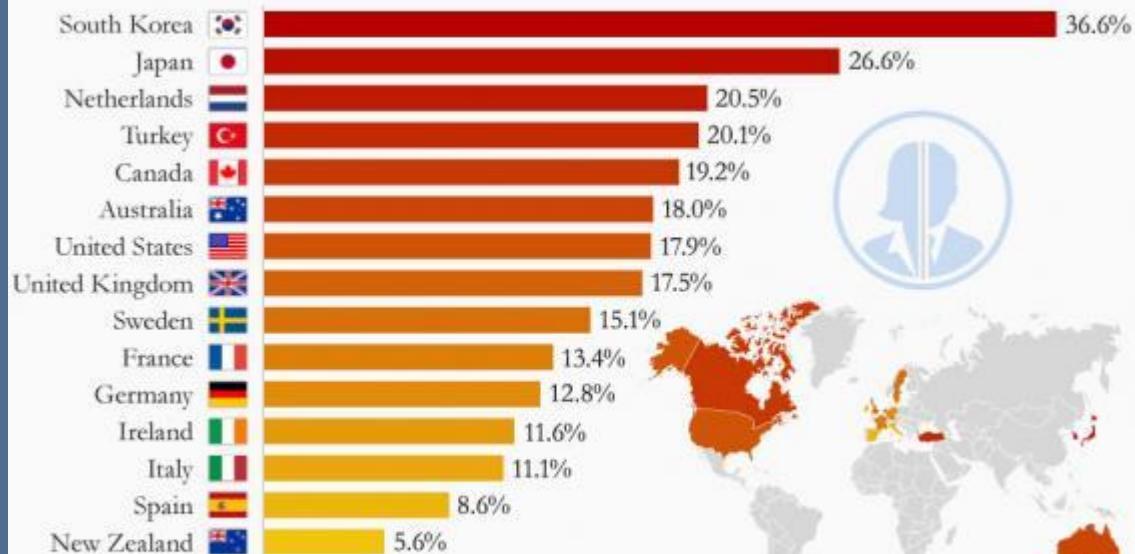
Gender Inequality



Gender Inequality refers to unequal treatment or perceptions of individuals based on their gender. It arises from differences in socially constructed gender roles.

The gender pay gap in developed nations visualised

% difference in full-time earnings between men/women in selected OECD nations*



Gender pay gap

Why is there a gender pay gap? #GenderPayGap



Women still take on the majority of care duties



Women account for 76% of all part time workers



Women are still more likely to be in low paid and low skilled jobs

Fewer women work in high-paid sectors such as:



Engineering



IT



Technology

Women continue to be underrepresented in senior management and leadership roles

2017 GENDER PAY GAP REPORTING SURVEY KEY FINDINGS

165 UK organisations took part in the survey,
29% of which are FTSE 250
with a combined market cap of approx. £449bn



Median is **20.5%** but varies by sector

74% remain in favour of the legislation in principle
yet **52%** do not think it will make a difference

Nearly **70%** have conducted a dry run analysis on the numbers
Only **30%** have already run the formal analysis by the end of May 2017

Most organisations increase in short-term activity to address the gap (pay)
Leading organisations going beyond legislation to address long-term drivers (career, occupation and inclusion)

MAKE TOMORROW, TODAY 

Environmental Inequality



Environmental Inequality is a condition of unevenness in the sharing of environmental opportunities between different groups in society. It can also be described as ‘the unequal social distribution of environmental risks and hazards and access to environmental goods and services.

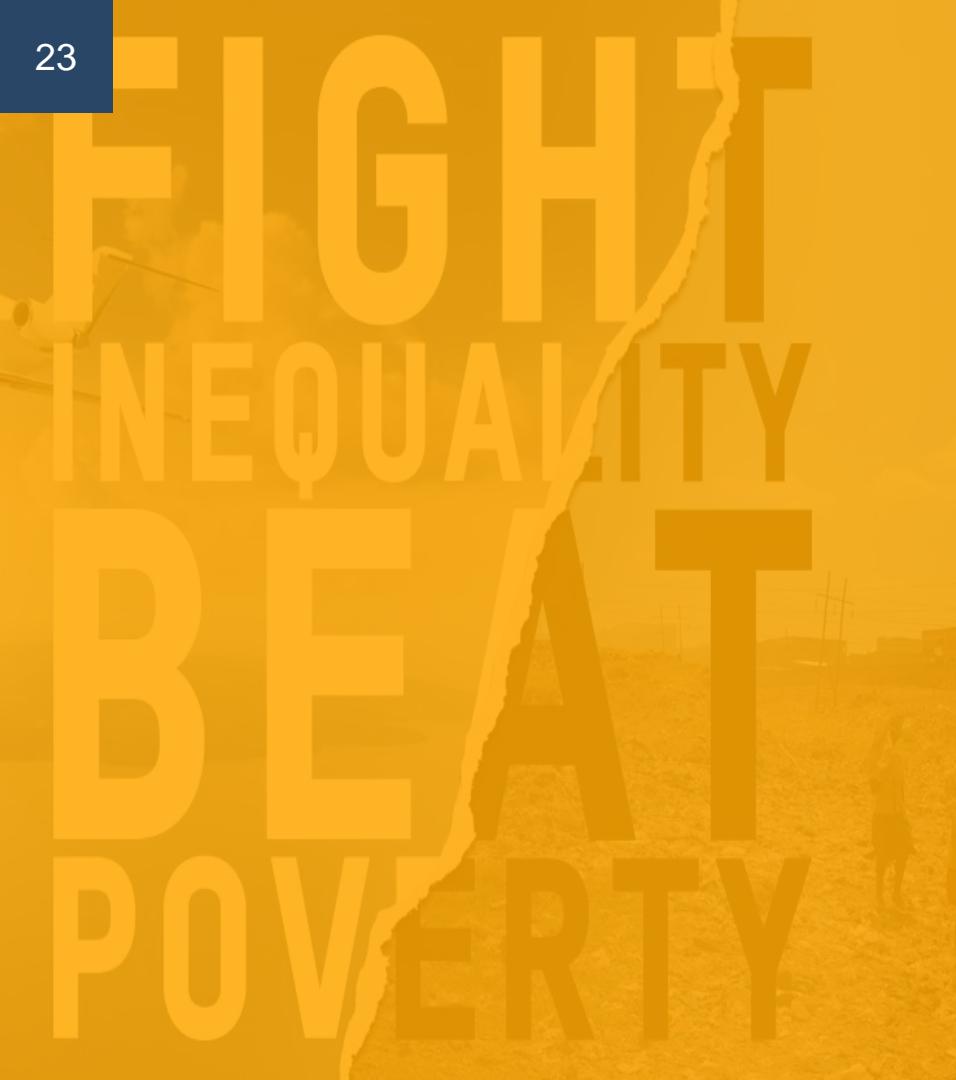


Global and International Inequality



Global inequality focuses primarily on the income inequalities across individuals in the world.

International inequality refers to the idea of inequality between countries.



What can be done

Welfare state and other ideas

Welfare State



The **welfare state** is a state that plays a key role in the protection and promotion of the social and economic well-being of its citizens. It is based on the principles of equality of opportunity, equitable distribution of wealth, and public responsibility for those unable to avail themselves of the minimal provisions for a good life.

A well functioning welfare state is a first step towards more equality.

Three main models of Welfare State

Esping-Andersen: Welfare Regimes				
	Poverty/ Inequality	Employment	Gender	Social security
Social-Democratic	Low	Generally high employment and low unemployment	High female employment facilitated by child care	Redistributive
Corporatist	Medium	Lower levels of employment; persistent unemployment	Low female employment levels, with benefits to encourage mothers to stay at home	Earnings-related
Liberal	High	High levels of employment and low unemployment	High part-time female employment, but lack of childcare provision limits opportunities for full-time employment	Emphasis on means-tested benefits paid at low levels and more recently in-work assistance

Social-Democratic/Scandinavian welfare state model is based on the principle of Universalism, granting access to benefits and services based on citizenship. Welfare state provides a relatively high degree of citizen autonomy, limiting reliance on family and market.

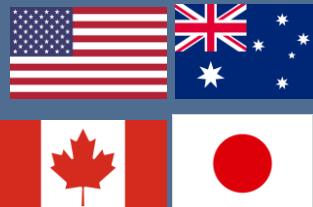


Corporatist/Christian-Democratic/Conservative

welfare state model is based on the principle of subsidiarity (decentralization) and the dominance of social insurance schemes, offering a medium level of decommmodification and permitting a high degree of social stratification.



Liberal/Anglo-saxon welfare state model is based on market dominance and private provision. State only interferes to ameliorate poverty and provide for basic needs, largely on a means-tested basis. The decommmodification potential of state benefits is assumed to be low and social stratification high.



* **Decommodification** is the process of viewing utilities as an entitlement, rather than as a commodity that must be paid or traded for.

Do it like Denmark!

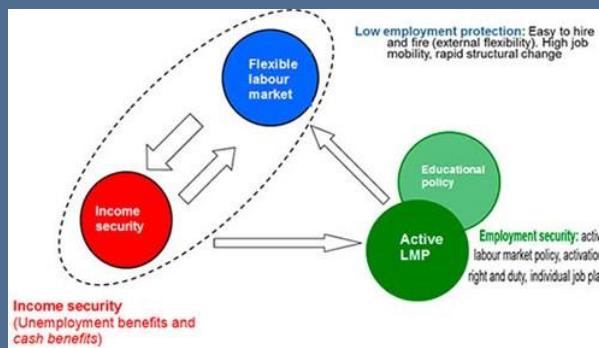
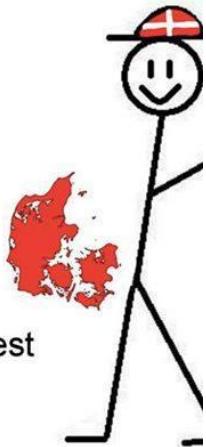
This is Denmark.

Denmark has free healthcare and free college.

Denmark's minimum wage is \$25/hour and people work 35 hours/week.

Denmark is the happiest country in the world.

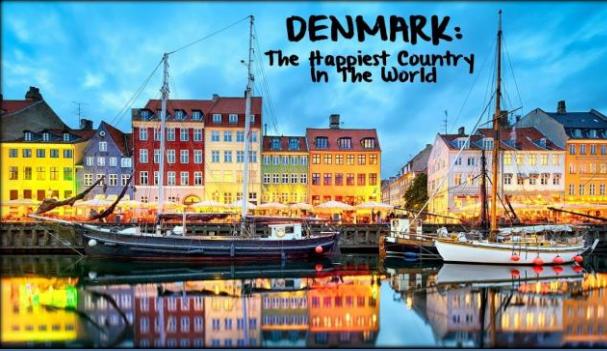
Be like Denmark.



It works!



©Lifehack



Political Economy of the Public Sector – Exam Guidelines

Structure of the Final Exam

SECTION A: MC, T/F, matching, numerical: Answer All – 30-40 points

SECTION B: Short answer: 3 out of 4 or 4 out of 6 – 30-40 points

SECTION C: Essay style: 1 out of 2 – 30-40 points

Indicative examples for MC, T/F, matching and numerical questions are included in the revision quiz.

Indicative examples of short answer questions:

- How do we measure the size of the public sector? What are the difficulties in doing so?
- What is the role of a government? Which are its main functions? Give examples.
- Which three types of efficiency characterize a competitive market? Use examples.
- What do we mean by incomplete markets? Give examples.
- What do we mean by public goods and merit goods? Give examples?
- Describe four market failures.
- What is an externality? Give examples.
- Which are the four main types of goods (based on consumption rivalry and ease of exclusion)?
- What problems do we face with publicly provided public goods and how can we ration them?
- What do we mean by “voting paradox”? What other problems do we have with voting?
- What is the difference between direct and indirect taxes? Give examples of both.
- What types of taxes (based on tax basis) are the most commonly used?
- Which are the main social insurance systems? What are their advantages and disadvantages?
- What do we mean by inequality of effort and inequality of opportunity? Give examples.

Indicative examples of essay style questions:

- *“Taxation is just a sophisticated way of demanding money with menaces”*. Terry Pratchett

Do you agree? Justify your opinion.

- Do we need a public sector? Why? What is the right size for a public sector? Justify your answers.
- *"A moderate tax on robots, even a temporary tax that merely slows the adoption of disruptive technology, seems a natural component of a policy to address rising inequality. Revenue could be targeted toward wage insurance, to help people replaced by new technology make the transition to a different career."* Robert J. Shiller

What do you think?

- What is the impact of inequality? Which factors contribute to its increase and what could be done to reduce it? Justify your answers.
- Do we need a social insurance system? What kind of social insurance system do we need?

