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STUDY GUIDE

ECONOMICS SL

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Economics SL
Study Guide

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Welcome to the IB Academy guide for Economics SL.

Our Study Guides are put together by our teachers who worked tirelessly with students and schools. The idea is to compile revision material that would be easy-to-follow for IB students worldwide and for school teachers to utilise them for their classrooms. Our approach is straightforward: by adopting a step-by-step perspective, students can easily absorb dense information in a quick and efficient manner. With this format, students will be able to tackle every question swiftly and without any difficulties.

We distinguish between two aspects: *skill* and *understanding*. Skill is fostered when students practice the syllabus material and can identify variations within the steps even if the same general principle may be applied throughout. In doing so, understanding will soon follow since the student has applied the steps several times. It is a simple yet effective method that has helped many students and we hope it will aid you as well.

The best way to apply what you have learned from the guides is with a study partner. We suggest revising with a friend or with a group in order to immediately test the information you gathered from our guides. This will help you not only process the information, but also help you formulate your answers for the exams. Practice makes better and what better way to do it than with your friends!

In order to maintain our Study Guides and to put forth the best possible material, we are in constant collaboration with students and teachers alike. To help us, we ask that you provide feedback and suggestions so that we can modify the contents to be relevant for IB studies. We appreciate any comments and hope that our Study Guides will help you with your revision or in your lessons. For more information on our material or courses, be sure to check our site at www.ib-academy.nl.

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PAPER GUIDE

Hello and welcome! We are happy that you've decided to get your hands on this IB Academy study guide for Economics. Before we get into the depths and valleys of the Econ syllabus itself, let us have a look at the papers that you are to write at the end of this journey.

Paper 1

Extended response paper (25 marks)
Duration: 1 hour 15 min
Choose and answer 1 question from a choice of 3 (Micro, Macro, Global Economy).

Part A:

- 10 marks.
- Theoretical, no example needed.
- Plan for 5 min, work for approx. 26 min.

Part B:

- 15 marks.
- A "Real" real-life example is required. This example should be introduced at the beginning and used throughout the response as the context of your answer.
- Evaluation must be throughout (needed in all markbands).
- Plan for 5 min, work for approx. 39 min.

Paper 2

Data response paper (40 marks)
Duration: 1 hour 45 min
Choose and answer one question from a choice of two. The questions cover the whole syllabus.

- Two definition questions (worth 2 marks)
- Two math questions (2–3 marks)
- Four explain with diagram questions (4 marks)
- An evaluation question using context in text and data provided (15 marks).

INTRODUCTION

1

1.1 The foundations of economics

Before we start this course, we must first look at the foundations of economics. We will discuss what the science of economics actually is and what the scope of this science might be.

- Economics is a social science on how to deal with scarcity.
- Scarcity is the problem of having infinite wants, or unlimited desires, while having only finite resources, or limited means, to fulfil these wants.
- A small scale example of scarcity: a person wants to buy a laptop and a phone, but has only enough money to buy one of the two.
- In general we describe this problem of scarcity as the economic problem.

Nine key concepts that tie together the course material

1 Scarcity	The problem of infinite wants while having only limited resources
2 Choice	Since resources are scarce, economic agents need to make choices. Not all wants can be satisfied, which creates opportunity costs.
3 Efficiency	Efficiency measures the ability to make the best possible use of available resources.
4 Equity	Equity aims at a fair distribution of wealth and resources. It is a normative concept as what is fair means different things to different people.
5 Economic well-being	Multi-dimensional concept that reflects living standards and the ability to meet basic needs. Economies worldwide differ greatly on economic well-being.
6 Sustainability	The ability of the present generation to meet its needs without compromising that ability from future generations.
7 Change	The field of economics is characterized by constant change, and economists need to take this into account when developing new models and refining old ones.
8 Interdependence	With high national and international economic interaction, choices made by one agent affect the economic state of others.
9 Intervention	Government involvement in the organizing of markets and economic activity.

The solution to the economic problem

In order to solve the economic problem, we must make choices between the different alternatives we are faced with. In a general economy these choices must be made on:

- What to produce?
- How to produce?
- For whom to produce?

In economic analysis, production occurs using four factors of production, which are characterized as:

- Land
- Labor
- Capital
- Entrepreneurship

In the IB course we will look at the economic problem from different viewpoints and in different domains.

1.1.1 Opportunity cost

Opportunity cost The value of the next best alternative that is lost while making a choice.

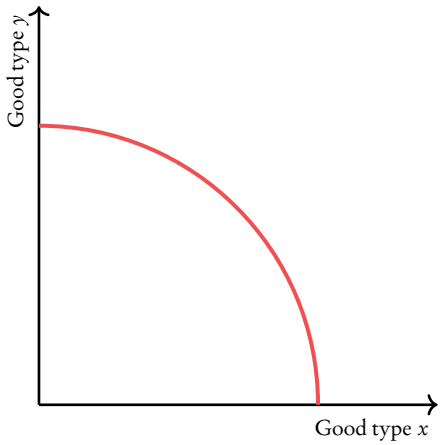
When a choice is made, an alternative is always foregone. We call this the *opportunity cost of the choice*.

For example: A person has only enough money to buy one of three of the following items: a smartphone, a laptop, a tablet.

- He lists the items in order of how much he or she desires them: (1) laptop, (2) smartphone, (3) tablet.
- Because he or she desires the laptop the most, the laptop will be chosen.
- The next best alternative, in this case the smartphone which is next on the list, will be the opportunity cost of the choice.

One way to illustrate opportunity cost is by the Production Possibilities Curve (PPC) diagram.

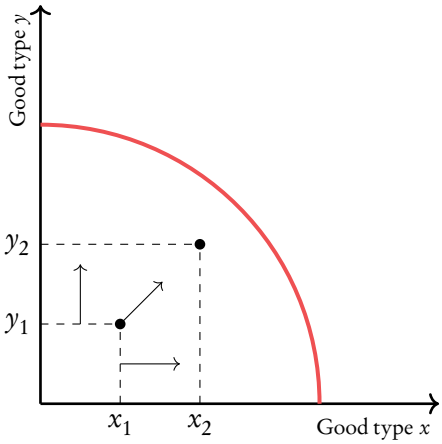
Figure 1.1: Production Possibilities Curve (PPC).



Two goods produced in an economy are plotted on the x and y axis. The PPC then shows combinations of the two goods that are efficient to produce at a given point in time.
With the level of factors of production, the institutional framework, and the state of technology fixed:

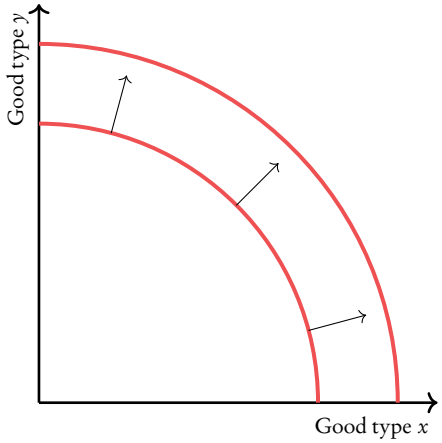
- Points inside the PPC are attainable but inefficient.
- Points on the PPC are attainable and efficient.
- Points outside of the PPC are efficient but unattainable.

Figure 1.2



Increases in output are illustrated by a movement of a point inside the PPC towards the PPC (Figure 1.1).
Increases in potential output are shown by a shift of the PPC curve. This shift can occur in the long-run, and it reflects growth, as combinations of output that were previously unattainable become attainable.

Figure 1.3



Assumptions of the PPC model:

- Only two goods produced in the economy
- Resources and technology are fixed
- All resources in the economy are used to the highest extent. This is of course not sustainable.

Increasing opportunity cost As we produce extra units of one good, increasing amounts of the other good have to be sacrificed.

Increasing opportunity cost is illustrated by a concave PPC.

Constant opportunity cost Producing more units of one good always requires the same amount of the other good sacrificed.

Constant opportunity cost is illustrated by a linear PPC.

1.1.2 Circular flow of income model

Money, goods and services flow through the economy. The circular flow of income model illustrates the exchange between households and firms:

Figure 1.4: Visualisation of the circular flow of income.

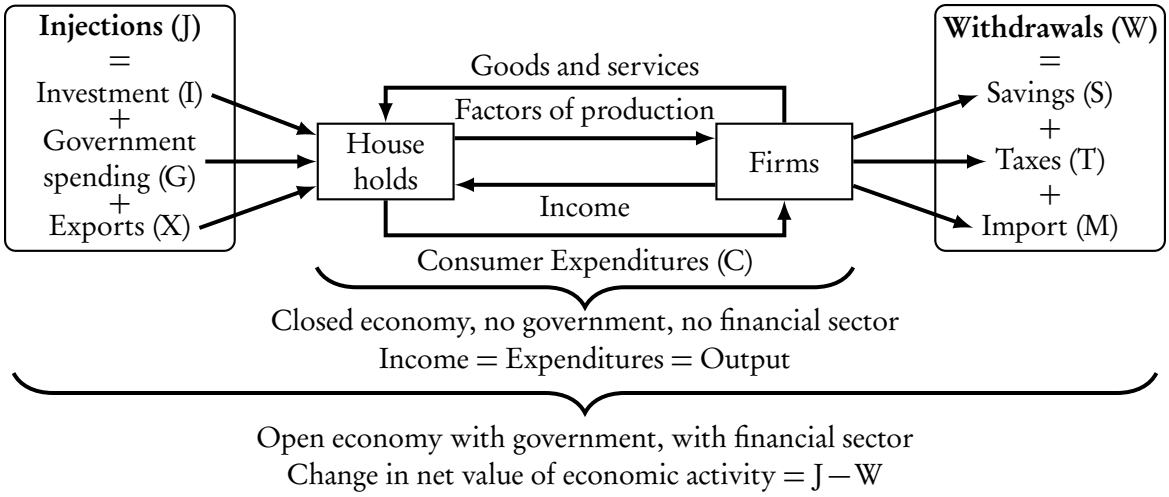


Table 1.1: The factors of production and their respective income.

Factor of production	Income	Factor of production	Income
Capital	⟶ Interest	Land	⟶ Rent
Enterprise	⟶ Profit	Labour	⟶ Wage

Some important notices about the circular flow of income model:

- The middle part of the model is a closed economy (no international trade ⇒ no imports and exports) that has no government (no taxes, no government spending) and no financial sector (no investment, no savings).
- In this economy, the income of consumers will always be the same as their expenditures because saving is impossible and there are no taxes.
- In this economy, the earnings of companies will always be the same as consumer expenditure because consumers can't spend their income on products from abroad (imports).
- In this economy, all earnings of companies will be the same as the value of their domestic outputs because companies can't invest parts of their earnings, nor can they export some of their output.
- Therefore, in a closed economy without a government and financial sector:

$$\text{Income} = \text{Expenditures} = \text{Output}$$

- When we add international trade, a government and a financial sector, injections (value added to the circular flow: investment, government spending and exports) and withdrawals (value removed from the circular flow: savings, taxes, imports) are possible.
- In such an economy the change in the value of economic activity can be measured as:

$$J - W = (I + G + X) - (S + T + M)$$

1.2 The Economic approach to the world

1.2.1 The role of positive and normative economics

Positive economics Positive economics is built around positive statements. They are objective, factual statements that can be proven true or false by scientific experiments. Hypotheses, models, theories, assumptions (like the ceteris paribus assumption), and empirical evidence are all a part of positive economics.

Normative economics Normative statements are value statements used in policy making that determine what the economy "should be" or "ought to be" like.

1.2.2 The history of economic ideas

18th century: classical economics

Division of labor: Adam Smith, the "founding father" of modern economics, discovered that by the division of tasks in a workplace, productivity per worker would increase.

International trade: Countries should specialize in the production of goods in which they have a comparative advantage, and trade with one another.

Invisible hand: Free markets allocate information between buyers and sellers, and they are most efficient without any government intervention.

Early 19th century: classical microeconomics and classical macroeconomics

International trade: Ricardo developed the theory of comparative advantage. Countries should specialize in the production of goods in which they have a lower opportunity cost, and trade with one another.

Say's law of markets: Say claimed that there cannot be overproduction of goods, because supply creates its own demand. The idea can be linked to the circular flow of income model.

Late 19th century: neo classical economics

The marginal revolution: The idea that consuming the first sample of a good will give the consumer more satisfaction than consuming the second or third sample of the same good. This is called the law of diminishing marginal utility.

First diagrams to illustrate theories and models: Alfred Marshall was the first economist to present a visual supply and demand graphical model and illustrate the determination of prices in the market.

20th century: Keynesian economics and monetarist school of thought

Keynesian revolution: Keynes argued against the free market approach, and believed that the mass unemployment of the 1920s Great Depression was not going to disappear without government intervention.

Monetarism (New Classical Economics): Monetarists believe that the main determinant of economic growth is the amount of money in the economy. The focus is therefore on monetary policy.

21st century: increased interdependence between Economics and other social disciplines

Behavioral economics: Aspects of psychology integrated into economic analysis to understand the motives behind decision-making agents

Nudge theory: The idea that consumers can be "nudged" to voluntarily make choices that are better for them and better for the society.

Circular economy: Products are designed to be long-lasting, and new products are repurposed and recycled from old ones. The principles of circular economy are consistent with many of the Sustainable Development Goals (SDGs).

1.3 Structure of the course

In this course we will study the economic problem in four themes:

1. How can governments help solve the economic problem in different cases?
2. How is sustainability threatened, while people or companies are making an effort to solve their economic problem?
3. How does efficiency conflict with equity while people or companies are making an effort to solve their economic problem?
4. How does economic growth conflict with economic development while companies or governments are making an effort to solve their economic problem?

We will study these questions in each of the following four economic domains:

Microeconomics: the science of choosing on a small scale (individuals, companies).
Macroeconomics: the science of choosing on a big scale (regions, countries).
Global economy: the science of choosing in interaction with other countries (international economics) and in order to raise living standards (development economics).

During this economics course we will go through all four domains and discuss the material you need to understand for your IB exam. This guide contains a summary of the contents of the course.

MICROECONOMICS

2

2.1. Demand and supply 18

In this section the microeconomic laws of *Demand* and *Supply* are discussed. Further, it is explained how *Equilibrium* is reached on the market. We will also see that at this equilibrium point *Market efficiency* is reached.

2.2. Externalities 28

Before discussing the theory, this section will briefly go over the most important *Definitions*. Next the *Economics of externalities* will be discussed in general before dividing them into two categories: *Externalities of production* and *Externalities of consumption*. This section will close with *Other sources of market failure* that might exist in the economy.

2.3. Government intervention 35

The government can try to solve market failures in many different ways. This sections discusses the solutions of *Indirect taxes*, *Subsidies* and *Price controls*.

2.1 Demand and supply

2.1.1 Demand

Law of demand When price goes up, *ceteris paribus*, quantity demanded goes down. Therefore, a negative relationship exists between price and quantity demanded.

Ceteris paribus means 'when all else remains equal'. In this case it means that the law of demand only holds when everything except price and quantity demanded remains the same.

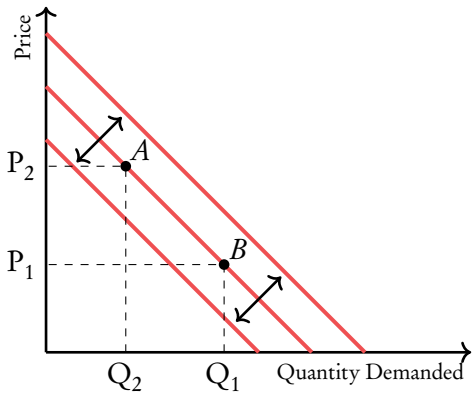
The law of demand can also be written as a formula, the formula of the demand curve, which has the following general form:

$$Q_D = a - bP$$

In this formula:

- Q_D = Quantity Demanded;
- P = Price;
- a = intersect; if the a in the formula changes, the demand curve will shift to the left (if a decreases) or to the right (if a increases);
- b = slope; the higher the b, the higher the slope of the demand curve; in the case of the demand curve, b will be negative because of the negative relationship between price and quantity demanded.

Figure 2.1: The demand curve.



A move along the demand curve occurs when the price of the product changes. If, for example, the price increases, a shift along the demand curve may occur from point *B* to point *A*.

A shift of the demand curve occurs in cases in which any other factor than price changes.

Below the most important of these factors are listed along with their effect on the demand curve:

The income of consumers In general when the income of consumers increases (decreases), consumers will have more (less) money to spend. Their demand of the good of which the demand curve is drawn will increase (decrease). This will shift the demand curve to the right (left).

⇒ The shift above will only happen if the good in question is a normal good (i.e. any good for which demand increases when income increases). Most goods on the market are normal goods.

⇒ In the case of inferior goods (i.e. goods for which demand decreases when income increases) the opposite will happen. When income increases (decreases), the demand curve will shift to the left (right). An example of an inferior good is a hamburger from McDonald's. When the income of people increases, they will typically use the extra money to buy better, healthier and more expensive types of food so demand for hamburgers goes down.

Prices of complementary goods A complementary good is a good that is consumed along with another good. Examples of complementary goods include cars with fuel, computers with computer software and Christmas trees with Christmas decorations.When the price of a good increases (decreases), the demand for the complementary good will decrease (increase), shifting the demand curve for the complementary good to the left (right).

Prices of substitute goods A substitute good is a good that is consumed instead of another good. Examples of substitute goods include iPhones vs. Samsung phones, Volkswagen vs. Opel cars and match sticks vs. lighters.When the price of a good increases (decreases), the demand for the substitute good will increases (decreases) because it is now a relatively less expensive (more expensive) alternative. This will shift the demand curve for the substitute good to the right (left).

Population When the population increases (decreases) there will be more (less) people to demand the good. This will increase (decrease) demand, shifting the demand curve to the right (left).

Taste when taste (e.g. in fashion) changes so will the demand for certain goods. This depends on the change. If wearing a certain type of shoe suddenly becomes a trend, the demand for this type of shoe will increase, shifting the demand curve to the right.

Future price expectations when a consumer expects the price of a good to increase in the future, they will take advantage of lower prices by demanding more of the good in the present. This leads to a shift in the demand curve to the right.

2.1.2 Supply

Law of supply Higher prices will, *ceteris paribus*, increase quantity supplied. Therefore a positive relationship exists between price and quantity supplied.

This relationship makes sense, because producers will want to make and sell more products when the price on the market for these products has increased in order to make more profit.

Ceteris paribus means 'when all else remains equal'. In this case it means that the law of supply only holds when everything except price and quantity supplied remains the same.

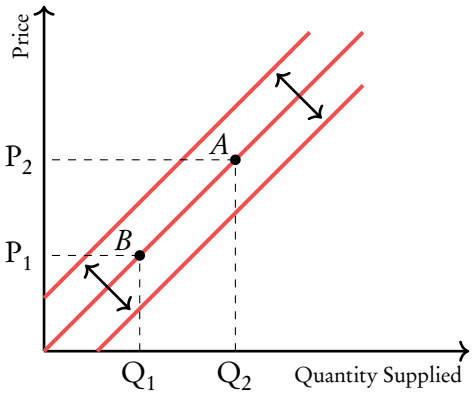
The law of demand can also be written as a formula, the formula of the demand curve, which has the following general form:

$$Q_S = c + dP$$

In this formula:

- Q_S = quantity supplied;
- P = price;
- c = intersect; if c in the formula changes, the demand curve will shift to the left (if c decreases) or to the right (if c increases);
- d = slope; the higher the d, the higher the slope of the supply curve; in the case of the supply curve, d will be positive because of the positive relationship between price and quantity demanded.

Figure 2.2: The demand curve.



A move along the supply curve occurs when the price of the product changes. If, for example, the price increases, a shift along the supply curve may occur from point *B* to point *A*.

A shift of the supply curve occurs in cases in which any other factor than price changes.

Below the most important factors are listed along with their effect on the supply curve:

Cost of factors of production When the factors of production become more (less) expensive, the production cost for producers will increase (decrease). This means they will probably produce less (more) and the supply curve will shift to the left (right).

Level of technology When technology advances (deteriorates), producers can produce more (less) efficiently. This means they will probably produce more (less), shifting the supply curve to the right (left).

Prices of related competitive goods When the prices of competitive goods increase (decrease), producers will feel more (less) confident about 'winning' the

competition. They will increase (decrease) production, shifting the supply curve to the right (left).

Prices of related joint goods When the prices of related goods increase (decrease), producers will feel less (more) confident about selling their goods along with the related good. Therefore they will produce less (more) goods, shifting the demand curve to the left (right).

Indirect taxes When the indirect taxes (i.e. taxes levied on the sale of goods) increase (decrease) the price of goods will increase (decrease). This will make producers feel less (more) confident on selling their goods so they will decrease (increase) their production and supply. Consequently, the supply curve will shift to the left (right).

Subsidies When subsidies (i.e. government money given to producers) increase (decrease), producers will decide to produce more (less) of the good. This will shift the supply curve to the right (left).

Numbers of firms / competitors on the market When there are more (less) competitors on the market, the producers will face increased (decreased) competition, decreasing (increasing) their market shares. This causes them to produce less (more), shifting the supply curve to the left (right).

Change in expectations When expectations change so does the production of producers. If a producer, for example, expects an economic crisis to occur, he will probably decrease supply in order to be prepared for a sudden loss in demand.

2.1.3 Equilibrium

Supply and demand interact to produce market equilibrium. This market equilibrium will be at the intersection of the demand and the supply curve, where supply equals demand (see Figure 2.3).

At this equilibrium point, you can find the equilibrium quantity (Q^*) at the horizontal axis and the equilibrium price or market price (P^*) at the vertical axis.

But in some cases the price is different from P^*:

- If the price lies above the market price, the quantity supplied will be higher than the quantity demanded ($Q_S > Q_D$). In this case there will be excess supply.
- If the price lies below the market price, the quantity demanded will be higher than the quantity supplied ($Q_D > Q_S$). In this case there will be excess demand.

Figure 2.3: Equilibrium.

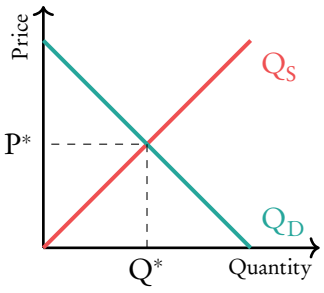


Figure 2.4: Excess supply.

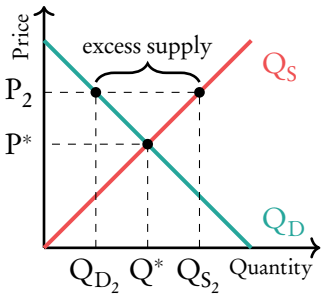
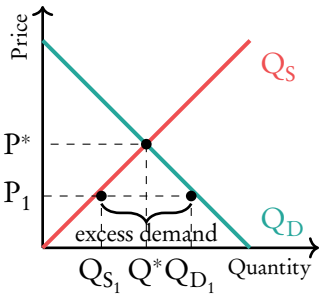


Figure 2.5: Excess demand.



In general, price can be said to have two functions on a market:

Signalling function: A high price is a signal to producers that consumers want to buy the good.
Incentive function: A higher price is an incentive for producers to produce more to increase profit.

2.1.4 Market efficiency

The efficiency that is achieved on a market can be measured by adding up the consumer and producer surplus. This gives you the total welfare.

Consumer surplus (CS) The extra satisfaction gained by consumers from paying a price that is lower than the price they were prepared to pay
→ total welfare gained from being able to consume.

Consumer surplus is measured by calculating the size of the area locked inside the demand curve; the horizontal line from P^* and the vertical line from Q^*.

Producer surplus The excess of actual earnings that a producer makes from a given quantity of output above the amount a producer would be willing to accept for that output
→ total welfare gained from being able to produce; equal to producer profits.

Producer surplus is measured by calculating the size of the area locked inside the supply curve; the horizontal line from P^* and the vertical line from Q^*.

Figure 2.6: Consumer surplus and producer surplus when market is in equilibrium.

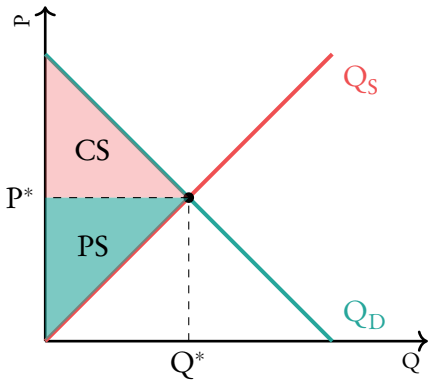
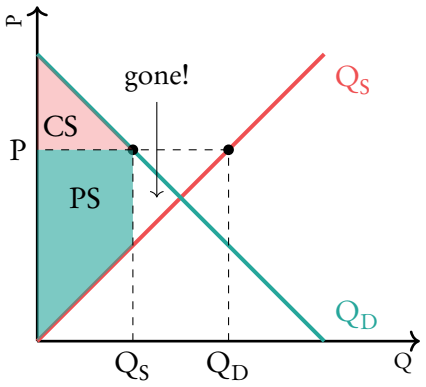


Figure 2.7: Consumer surplus and producer surplus when market is *not* in equilibrium.



Best allocation of resources is reached at the market equilibrium. At that point the community surplus (CS + PS) is maximised. (At that point marginal benefit = marginal cost, see section on market failure).

⇒ to see that this is true, let's look at a situation where price is not equal to the market price (see Figure 2.7).
⇒ You can see that CS + PS is smaller than at the equilibrium, the loss in producer and consumer surplus is marked in the figure.

Elasticities

Elasticities are used to measure the effect a change in some factor (income, price of a good, price of another good etc.) has on supply and demand of a good. For your IB exam you must know of four different elasticities which we will discuss here.

Price elasticity of demand (PED)

The price elasticity of demand is used to measure the effect a change in price has on the demand for a certain good. It can be calculated as follows:

$$\text{PED} = \frac{\%\text{ change in } Q_D}{\%\text{ change in P}}$$

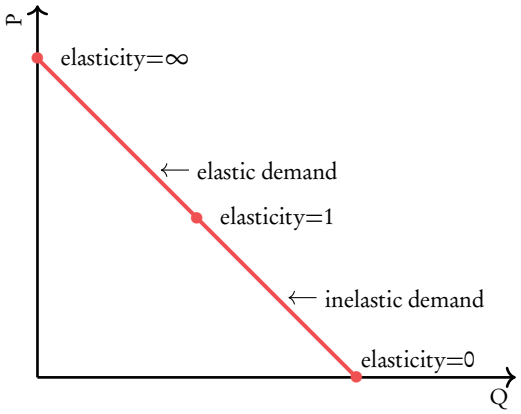
The outcome of PED is typically negative (because there is a negative relationship between price and quantity demanded) but in economics we do not write the minus symbol of the PED.

What does the outcome mean? If price increases by a certain percentage, quantity demanded will decrease by PED × that percentage. (If for example PED = 2 and price increased by 10%, demand would decrease by 20%).

The outcome of the PED can be placed into one of five categories:

1	PED = 0	Perfectly inelastic demand
2	0 < PED < 1	Inelastic demand
3	PED = 1	Unit elastic demand
4	1 < PED < ∞	Elastic demand
5	PED = ∞	Perfectly elastic demand

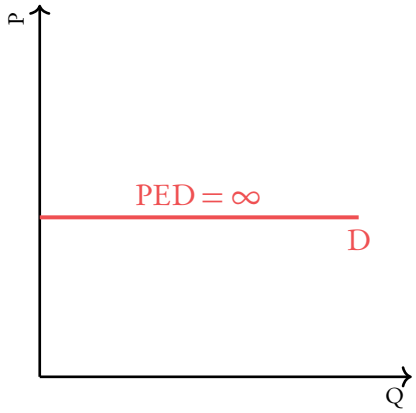
The higher the elasticity, the more elastic PED is, the more demand will change when price changes.



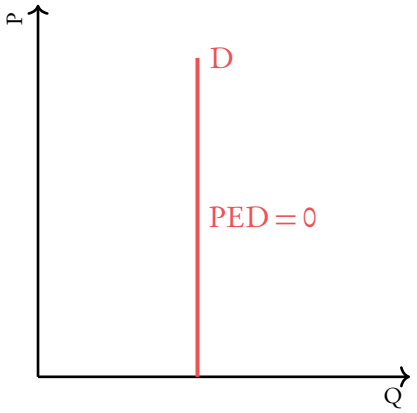
PED is different at each point of the demand curve. In the middle it is equal to 1. Left of the middle of the demand curve PED will be elastic; right of the middle of the demand curve it will be inelastic.

There are two exceptions to the rule above:

On a completely horizontal demand curve, PED = ∞ at every point.



On a completely vertical demand curve, PED = 0 at every point.



When PED is elastic, firms should lower their price to get more revenue because in that case demand will increase more than the price will decrease. The opposite will be the case when PED is inelastic. When PED = 1, the firm should leave the price at the current level; revenue is maximised at this point.

Governments want to tax goods with an inelastic PED because demand changes less than the price increase due to the tax, so they can make more tax revenue on these goods.

The size of the price elasticity of demand is influenced by the following factors:

The number and closeness of substitutes: The more substitutes, the higher PED. If there are a lot of substitutes, consumers can easily switch to another product when the price of the product increases.

The degree of necessity: The higher the need for the product, the lower PED. Consumers will buy goods they need anyway, regardless of the price. Examples include: food and gasoline.

The time period over which PED is measured: The longer this time period, the higher PED. In the long run, consumers have more time to look for alternatives / substitutes for a good. They will switch more often if the price of the good increases.

The proportion of income spent on the good: The smaller this proportion, the lower PED. When the proportion of income spent on a good is low, consumers will not notice or care about a price change and still buy the same proportion of the good.

The type of good: Primary commodities (i.e. materials in raw unprocessed state) have a lower PED than manufactured commodities. Primary commodities are necessary for producers in order to produce. They will buy them anyway, regardless of the price that is asked for them.

Price elasticity of supply (PES)

The price elasticity of supply is used to measure the effect a change in price has on the supply for a certain good. It can be calculated as follows:

$$PES = \frac{\%\text{ change in } Q_S}{\%\text{ change in } P}$$

The outcome of PES is typically positive (because there is a positive relationship between price and quantity demanded).

What does the outcome mean? If price increases by a certain percentage, quantity supplied will increase by PES × that percentage. (If for example PES = 2 and price increased by 10%, supply would increase by 20%).

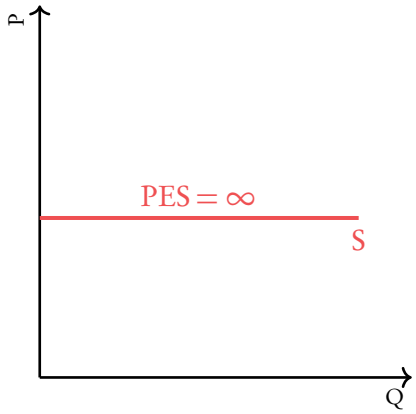
The outcome of the PES can be placed into one of five categories:

1	$PES = 0$	Perfectly inelastic supply
2	$0 < PES < 1$	Inelastic supply
3	$PES = 1$	Unit elastic supply
4	$1 < PES < \infty$	Elastic supply
5	$PES = \infty$	Perfectly elastic supply

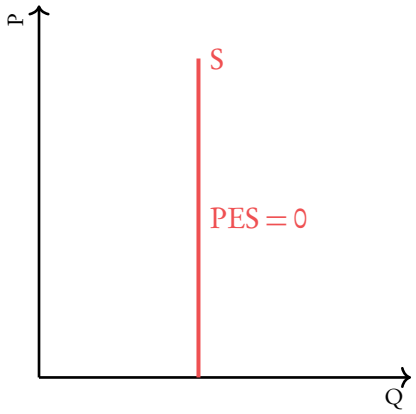
The higher the elasticity, the more elastic PES is, the more supply will change when price changes.

PES is different at each point of the supply curve, but there are two exceptions to the rule above:

On a completely horizontal supply curve, PES = ∞ at every point.



On a completely vertical supply curve, PES = 0 at every point.



The size of the price elasticity of supply is influenced by the following factors:

Mobility of factors of production: The more mobile factors of production are, the easier it is for producers to buy and sell them. This means it is easier for producers to increase or decrease production, therefore the PES will be more elastic.

Unused capacity: When producers have a lot of unused capacity, it will be easier to increase production if necessary, therefore the PED will be more elastic.

Ability to store stocks: If a firm is able to store high levels of stock of their product, they will be able to react to price increases with swift supply increases and therefore the PES for the product will be relatively high.

The time period over which PES is measured: PES will be higher when it is measured in the long run since companies will have more time to adjust production to price levels. In the short run producers often can't change supply by that much.

Type of goods: Primary commodities typically have a low PES while manufactured commodities often have a high PES. This is due to the higher necessity of primary goods (in manufacturing and general usage) compared to manufactured goods.

Income elasticity of demand (YED)

The income elasticity of demand is used to measure the effect that a change in income of consumers has on the demand for a certain product. It can be calculated as follows:

$$\text{YED} = \frac{\%\text{ change in } Q_D}{\%\text{ change in income}}$$

The outcome of YED can be positive or negative:

If the outcome of the YED is *positive*, the good of which the YED is calculated is a normal good. When income increases, so does consumption of the good.

If the outcome of the YED is *negative*, the good will be an inferior good. When income increases the consumption of the good will decrease.

What does the outcome mean? If the income of consumers is increased by a certain percentage, the quantity demanded the good will increase by YED × that percentage. (If, for example, YED = −2 and the income of consumers has increased by 10%, demand for the good would decrease by 20%).

Goods can also be placed into two categories based on the size of the YED:

1. If YED > 1, YED is said to be income elastic and the good of which YED is calculated is a luxury good because an increase in income will lead to a spectacular increase in demand for these goods. Examples of luxury goods include jewelry and sports cars.
2. If YED < 1, YED is said to be income inelastic and the good of which YED is calculated is a necessity good because an increase in income won't change the demand for these goods that much, consumers will need them anyway. Examples of necessity goods include food and medicine.

2.2 Externalities

2.2.1 Definitions

Before discussing the economics of market failures and externalities, it is important to understand a few definitions:

Market failure Failure of the market to achieve allocative efficiency resulting in an overallocation or underallocation of resources.

An externality occurs when production or consumption of a good has an effect on a third party for which the latter does not pay or does not get compensated.

- This effect can be positive (benefit) in which case we speak of positive externalities. Examples include getting educated. The third party that would benefit in this case would be the society in general.
- This effect can be negative (cost) in which case we speak of negative externalities. Examples include pollution from the production of a good, which hurts society (the third party).

Marginal private costs (MPC) Costs of production that are taken into account in a firm's decision making process. The MPC curve is equal to the supply curve.

Marginal private benefits (MPB) Benefits the individual enjoys from the consumption of an extra unit of a good. The MPB curve is equal to the demand curve.

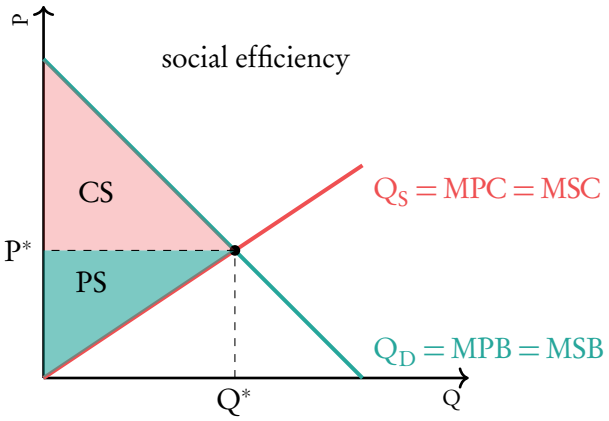
Marginal social cost (MSC) Cost of production to society.

Marginal social benefit (MSB) Benefit of consumption of one extra unit to society.

2.2.2 Economics of externalities

In the ideal situation, the marginal social costs are equal to the marginal private costs and the marginal social benefits are equal to the marginal private benefits (so MPC = MSC, MPB = MSB). The price is determined at the intersection of the demand and supply curves, which also means that the marginal social costs are equal to the marginal social benefits (so MSC = MSB).

Figure 2.8: The ideal situation in which MPC = MSC and MPB = MSB.



Have a look at the graph: in this situation the community surplus will be maximised, *remember?*

In reality, MPC and MSC and MPB and MSB are often not the same. In total four different scenario's are possible:

1	MSC > MPC	negative externality of production
2	MSC < MPC	positive externality of production
3	MSB < MPB	negative externality of consumption
4	MSB > MPB	positive externality of consumption

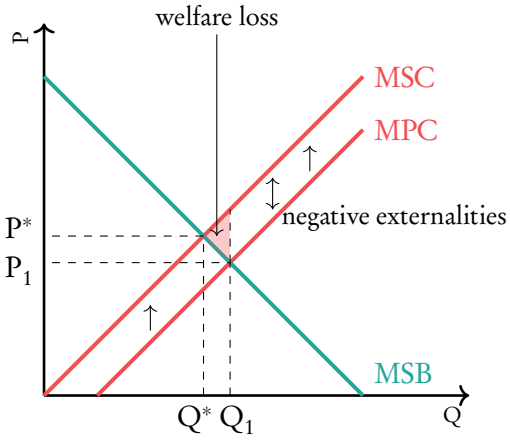
In general we can say the following so the ideal situation is reached when the externalities are equal to zero:

$$MSC = MPC + \text{externalities} \qquad MSB = MPB + \text{externalities}$$

We will have a look at all four alternatives in the two sections that follow.

2.2.3 Externalities of production

Negative externalities of production



In this case MSC > MPC, the MSC curve lies above the MPC curve. This can be caused by polluting production.

As you can see the negative externality leads to a welfare loss (the shaded triangle).

The government can end this by taxing the companies and 'internalizing the externality', or, the government could pass laws to demand stricter environmental standards. This would increase the firms private costs, shifting the MPC curve upwards.

However, there are limitations to government policies when trying to correct externalities. This is important for evaluation:

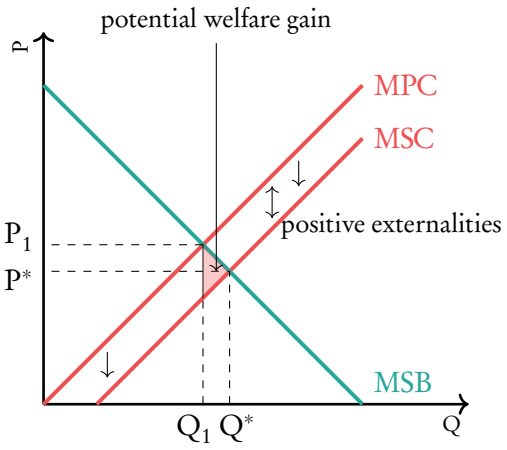
Taxing the Firm ('Internalizing the externality')

- How much pollution is created?
  - Pollution is not easy to measure
- How much should the tax be?
  - There are complications in trying to determine and quantify the tax rate
- Who is actually polluting and how much pollution are they causing?
  - Hard to disentangle the drivers of pollution
- Will the tax actually stop the pollution?

Laws for stricter environmental standards

- May lead to job losses
- Cost of setting up and policing standards
  - may actually be greater than the cost of the pollution

Positive externalities of production



In this case MSC < MPC, the MSC curve lies below the MPC curve. This can be caused by green production.

As you can see the positive externality leads to a potential welfare gain (the shaded triangle). The company produces at Q_1 and P_1, while max welfare could be achieved at Q^*, P^*.

The government could achieve this by subsidising the companies, shifting their MPC curve downwards. Governments could also provide vocational training to improve the quality of labor.

Subsidies

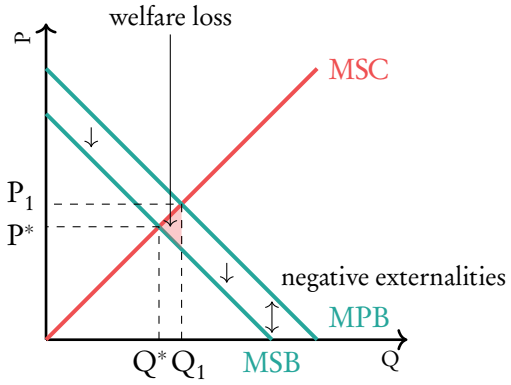
- Difficult to estimate the level of subsidy
- Opportunity costs of providing subsidies

Vocational Training

- High cost
- May discourage firms from providing training
- Trainers may lack expertise
- Improves quality of labor
  - Shifts economy's PPC outwards in the long-run

2.2.4 Externalities of consumption

Negative externalities of consumption



In this case MSB < MPB, the MPB curve lies above the MSB curve. This can be caused by consumption of demerit goods (goods of which the consumption has negative consequences on society) such as gasoline.

As you can see the negative externality leads to a welfare loss (the shaded triangle).

The government can end this by imposing a tax on the consumption of this good, causing MPB to decrease so that the MPB curve shifts downwards. The government could also choose to ban the product entirely, making it illegal. Lastly, the government could opt to educate the public about the dangers of consumption and fund negative advertising. This would shift the MPB curve to the left, essentially decreasing demand for the product.

Imposing a tax on consumption

- Government can collect tax revenue
- Demerit goods could have inelastic demand
  - Qd may not fall as much
- High taxes could encourage people to buy elsewhere
  - Emergence of black markets

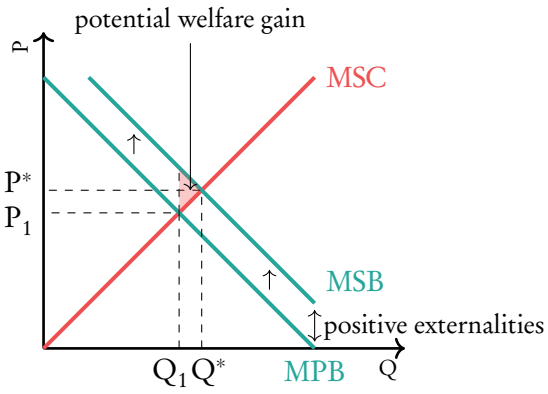
Banning the product

- Could create unemployment
- Taxing the product could be better
  - Tax revenue can be invested in other areas
- Could place a partial instead of whole ban
  - E.g. no smoking in certain places
- May be politically unpopular

Provide education

- Costly
  - Taxpayers unhappy
- A great opportunity cost
  - Tax money could be spent in other areas

Positive externalities of consumption



In this case MSB > MPB, the MSB curve lies above the MPB curve. This can be caused by consumption of merit goods (goods of which the consumption has positive consequences on society) such as education.

As you can see the positive externality leads to a potential welfare gain (the shaded triangle). People consume at P_1Q_1, while the optimum would be P^*Q^*.

The government could get there by subsidising the consumption of the good, shifting the MPB curve upwards. Additionally, governments could invest in positive advertisement and shift the MPB curve to the right (increasing demand for G&S) or pass laws to make consumption of the merit good compulsory.

Subsidies

- Costly
- High opportunity cost

Positive Advertising

- Costly
- Beneficial in the long-run

Pass laws

E.g. insisting citizens have vaccinations, make education compulsory)

- Often only successful when the G or S is provided free of charge
- Some see this as an infringement of their civil liberties

2.2.5 Other sources of market failure

In addition to the discussed sources of market failure the following sources can also be named.

Lack of public goods

Public goods (e.g. dams) have the following two characteristics:

- They are non-rivalrous: more people can use the good at the same time e.g. a dam protects more people at the same time.
- They are non-excludable: people can't be excluded from the use of the good e.g. in the case of a dam, people living in the protected area can't be excluded from the protection by the dam.

In economics we also recognise private goods (e.g. tickets to a concert) which have the following characteristics:

- They are rivalrous: the good can't be used by more people at the same time e.g. tickets to a concert can only be used by one person to enter.
- They are excludable: people can be excluded from the use of the good e.g. someone checking for tickets could deny people entry.

Private firms will not supply public goods because few people will pay for it if they can use it anyway; this is called the free rider problem.

Governments can solve this by providing the public goods themselves paying for them using taxes.

Common access resources, threat to sustainability

Common access resources are resources that everyone has access to so it is very hard to exclude people from using them (e.g. fishing grounds, fossil fuel reserves).

The lack of a pricing mechanism on these resources may cause overuse or depletion. This poses a threat to sustainability.

For example, poverty in developing nations often leads to overexploitation of agricultural land.

What can the government do to solve this problem?

- Legislation to forbid or limit the use of some common access resources.

- Carbon taxes to make sure companies will use less common access resources that eventually lead to the emission of carbon dioxide such as oil, coal and natural gas.
- Cap and trading schemes for companies to trade rights to emit carbon dioxide. This has the same effect as carbon taxes, but also limits the emission to a predetermined level because there is a certain maximum of rights to be traded.
- Funding for clean technologies so companies will use fewer resources.

But government responses are limited because:

- The problems have a global nature. They can only be solved if all countries and governments act against them, otherwise companies will just move to countries where the laws are less strict.
- There's lack of ownership of the common access resources. Often no one feels responsible for solving the problem.
- Effective responses require international cooperation, see above.

2.3 Government intervention

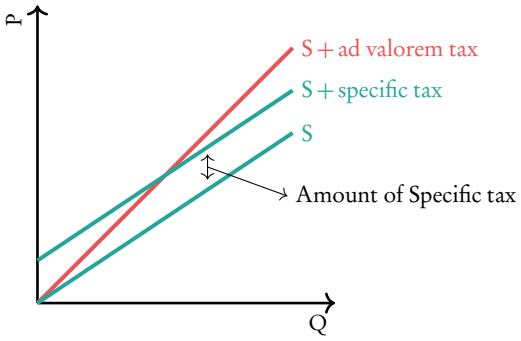
There are a couple of reasons for governments to intervene in markets:

- earn government revenue
- support firms
- support households on low incomes
- influence level of production
- influence the level of consumption
- correct market failure
- promote equity

2.3.1 Indirect taxes

Indirect taxes are taxes imposed on certain goods to discourage the consumption of goods that can create externalities (demerit goods).

Figure 2.9



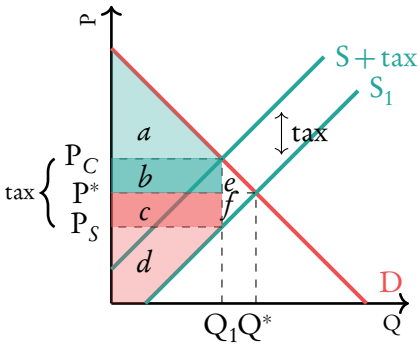
These indirect taxes can be placed into two categories:

Specific taxes: the same amount of tax per unit sold (S+specific tax in the graph).

Ad valorem taxes: a percentage of the price of the good is taxed (S+ad valorem tax in the graph).

Let's look at what happens to the equilibrium when the government decides to install a specific tax on a certain good:

Figure 2.10: Change in equilibrium due to a tax.



- The tax makes the supply curve of the good shift upwards, because the good will now be sold at a higher price.
- There is also a difference in the price consumers pay (P_c which is the price the producers set + the tax) and the price the suppliers receive (P_s which is only the price they have set, and not the tax, because they have to give away the tax money to the government).

Now let's take a look at what happens to the overall welfare level:

Consumer surplus before tax	$a+b+e$	} — Loss of $b+e$
Consumer surplus after tax	a	
Producer surplus before tax	$c+d+f$	} — Loss of $d+f$
Producer surplus after tax	d	
Extra government revenue	$b+c$	} + Gain of $b+c$
In total the tax will result in a welfare loss of	$e+f$	

We call this welfare loss due to a tax the tax burden.

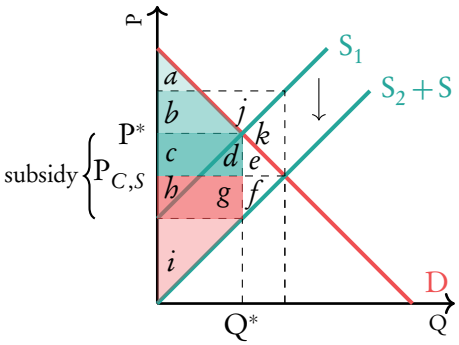
2.3.2 Subsidies

A subsidy is an amount of money paid by the government to a firm per unit of output.

Possible goals of the government for setting the subsidy may include:

- To lower the price of essential goods: producers of essential goods can lower the price when receiving a subsidy.
- Guarantee the supply of certain goods: more producers will want to produce certain goods if they can get a subsidy in order to do so.
- Enable producers to compete with foreign competitors: domestic companies stand stronger on the international market if they get money in the form of subsidies from their government.

Figure 2.11: Change in equilibrium due to a subsidy.



In the graph you can see the effect on the equilibrium of a subsidy.

The subsidy will shift the supply curve downwards / to the right because producers will now produce more at a lower price for every quantity.

Now let's take a look at what happens to the overall welfare level:

Consumer surplus before subsidy	$a+b$	$+$ Gain of $c+d+e$
Consumer surplus after subsidy	$a+b+c+d+e$	
Producer surplus before subsidy	$c+h$	$+$ Loss of c, gain of $f+g+i$
Producer surplus after subsidy	$f+g+h+i$	
Extra government expense	$b+c+d+e+j+k$	$+$ Loss of $b+c+d+e+j+k$

In total the subsidy will result in a welfare loss/gain of $f+g+i-c-c-d-j-k$

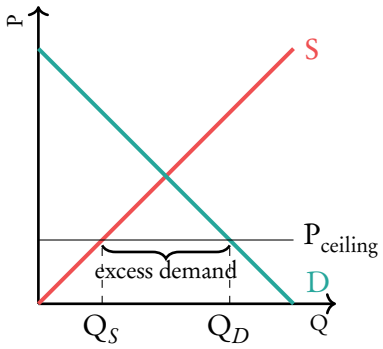
Whether the subsidy will result in a welfare loss or gain depends on the size of the areas involved. If $f+g+i>c+c+d+j+k$, there will be a welfare gain. If the opposite is the case, there will be a welfare loss.

2.3.3 Price controls

A price control is a measure by the government that forces producers to sell goods for a fixed price or for a price within a certain range. In this section we will discuss two price controls: (1) the maximum price (price ceiling) and (2) the minimum price (price floor).

Price ceiling (maximum price)

Figure 2.12: A price ceiling (maximum price) on the market causes excess demand.



With a price ceiling the government sets a maximum price, which lies below the equilibrium price, beyond which producers are not allowed to raise the price.

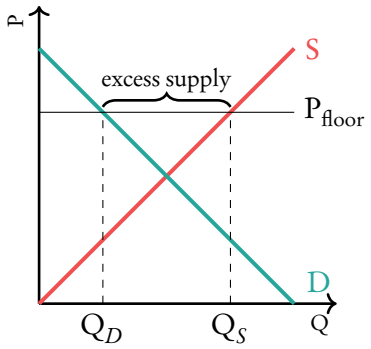
The government can do so to protect consumers against high prices.

As you can see in the diagram, in the case of a price ceiling the demand will be greater than the supply. An excess demand will thus exist.

Possible consequences of setting a price ceiling may include:

Shortage: production falls short of demand.
Underground parallel markets: due to the excess demand some consumers who want to buy the good cannot do so. They may go on the black market to still buy the good in question.
Welfare loss: the market won't be at equilibrium, consumer and producer surplus are not maximised.
Inefficient resource allocation: the market won't be at equilibrium, resources are not used most efficiently.
Non-price rationing: producers may start deciding who may buy and who may not buy. They may do so by queuing: consumers who are willing to wait the longest in a queue may buy the good.

Figure 2.13: A price floor (minimum price) on the market causes excess supply.



Price floor (minimum price)

With a price floor, the government sets a minimum price which lies above the equilibrium price. Below, producers are not allowed to lower the price.

The government can do so to protect producers against large fluctuations in prices (e.g. agricultural products) or to protect workers (e.g. setting a minimum wage).

As you can see in the diagram, in the case of a price floor supply will be greater than demand. An excess supply will thus exist.

Possible consequences of setting a price floor may include:

- Surpluses and government measures. As explained above in the case of a price floor, there will be excess supply and the government often sets a minimum price while promising producers to buy the stock that they can't sell on the market for the higher price.
- Welfare loss. The market won't be at equilibrium, consumer and producer surplus are not maximised.
- Inefficient resource allocation. The market won't be at equilibrium, resources are not used most efficiently.

MACROECONOMICS

3

3.1. Overall economic activity 42

This section will first go into the model that describes the macroeconomy: the *Circular flow of income model*. Using this model we will determine *Measures of Economic Activity*. This section will end with an analysis of how the level of economic activity changes over the years: *The business cycle*.

3.2. Aggregate demand and aggregate supply 45

This section will go into the determination of *Aggregate demand*, *Short Run Aggregate Supply* and *Long run aggregate supply* in a macroeconomic context. We will also go into how *Equilibrium* is reached on a market.

3.3. Macroeconomic objectives 50

In this section we will discuss the five major macroeconomic objectives and provide theoretical context to these objectives: *Low unemployment*, *Low and stable rate of inflation*, *Economic Growth* and *Equity in the distribution of income*.

3.4. Government intervention 59

In this section the different ways the government can choose to intervene in a market will be discussed. The government can do so by implementing *Fiscal Policy*, *Monetary policy* or *Supply side policies*. At the end of this section there will be an *Evaluation of policies*.

3.1 Overall economic activity

3.1.1 Circular flow of income model

Money, goods and services flow through the economy. The circular flow of income model illustrates the exchange between households and firms:

Figure 3.1: Visualisation of the circular flow of income.

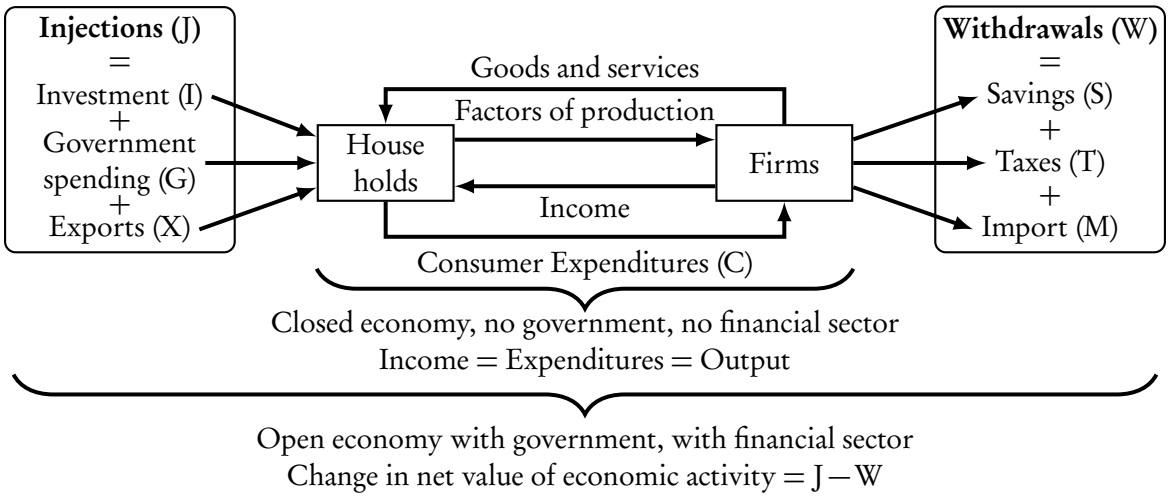


Table 3.1: The factors of production and their respective income.

Factor of production	Income	Factor of production	Income
Capital	⟶ Interest	Land	⟶ Rent
Enterprise	⟶ Profit	Labour	⟶ Wage

Some important notices about the circular flow of income model:

- The middle part of the model is a closed economy (no international trade ⇒ no imports and exports) that has no government (no taxes, no government spending) and no financial sector (no investment, no savings).
- In this economy, the income of consumers will always be the same as their expenditures because saving is impossible and there are no taxes.
- In this economy, the earnings of companies will always be the same as consumer expenditure because consumers can't spend their income on products from abroad (imports).
- In this economy, all earnings of companies will be the same as the value of their domestic outputs because companies can't invest parts of their earnings, nor can they export some of their output.

- Therefore, in a closed economy without a government and financial sector:

$$\text{Income} = \text{Expenditures} = \text{Output}$$

- When we add international trade, a government and a financial sector, injections (value added to the circular flow: investment, government spending and exports) and withdrawals (value removed from the circular flow: savings, taxes, imports) are possible.
- In such an economy the change in the value of economic activity can be measured as:

$$J - W = (I + G + X) - (S + T + M)$$

3.1.2 Measures of Economic Activity

The size of the 'economic activity' can be measured in different ways:

GDP — Gross Domestic Product Total income earned by the factors of production in a country, regardless the assets owner.

GNP/GNI — Gross National Product / Gross national income The total income earned by a country's factors of production, regardless the assets location.

Each of these indicators can be measured:

- At nominal value = at current prices
- At real value = adjusted for inflation
- Per capita = per head of population

Nominal values and real values are useful for *comparison over time*, whereas GDP/GNI per capita is more appropriate for *comparing between countries* in terms of standard of living

Other measures of economic activity

OECD Better Life Index Usage of 11 topics concerning material living conditions and quality of life that affect wellbeing.

Happiness Index Ranking of countries based on their happiness levels. Main variables consist of GDP per capita, social support, healthy life expectancy, etc.

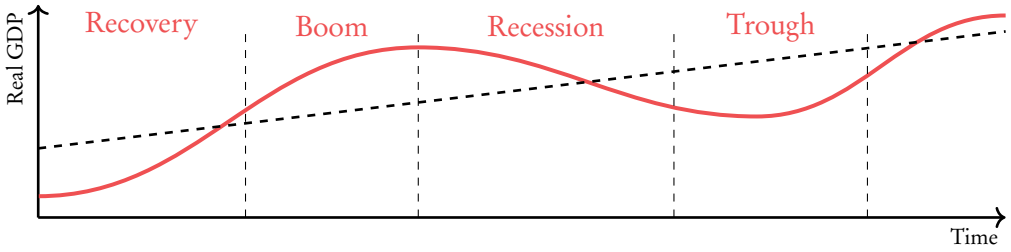
Happy Planet Index (HPI) Measures sustainable wellbeing through a combination of four elements: wellbeing (satisfaction), life expectancy, inequality of outcomes, and ecological footprint.

Note: These measures of economic activity also make up parts of the composite indicators found in 4.5.2!

3.1.3 The business cycle

The economy tends to go through a cyclical pattern of Real GDP development. The pattern is called the business cycle (Figure 3.2). The business cycle consists of different phases of real GDP growth and decline, but in the long run GDP increases, hence the increasing trend line drawn in figure 3.2.

Figure 3.2: The business cycle.



It describes the short-term fluctuations in economic activity in a country over time, which create a long-term trend of growth in the economy.

Table 3.2: Characteristics of the phases of the business cycle.

Phase	Recovery	Boom	Recession	Trough
	GDP is increasing	GDP increases less and reaches highest point	GDP starts to decrease	GDP decreases less and reaches lowest point
Consumption & Investment	Increasing	Increasing to highest point	Decreasing	Decreasing to lowest point
Unemployment	Decreasing	Decreasing to lowest point	Increasing	Increasing to highest point
Price Level	Increasing	Increasing	Stable or possible decrease	Stable or possible decrease

3.2 Aggregate demand and aggregate supply

3.2.1 Aggregate demand

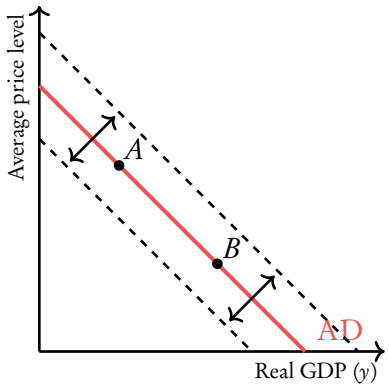
Aggregate demand (AD) Total demand for goods and services in an economy at a given time.

$$AD = C + I + G + X - M$$

The AD curve is typically downward sloping: if the average price level increases, consumers will typically buy less goods and vice versa. There is a negative relationship between price and demand.

Shifts of and moves along the AD curve

Figure 3.3: Aggregate Demand curve.



- A move *along* the AD curve occurs when the average price level changes. If, for example, the average price level increases, a shift along the AD curve may occur from point *A* to point *B*.
- A shift *of* the AD curve occurs when one of the components that make up AD increase or decrease: when C, I, G or X increase (decrease) or M decreases (increases), the AD curve will shift to the right = a general increase in demand (left = a general decrease in demand).

Table 3.3 contains different factors that influence Consumption, Investment, Government Spending, Exports and Imports.

Table 3.3: Factors that can influence, C, I, G, E and M.

Consumption (C)	Investment (I)	Government spending (G)	Net Exports (E — M)
+ Consumer confidence	— Interest rates	+/— Policy choices of the government	+ Income of trading partners
— Interest Rates	+ Business confidence		— Value of home currency
+ Wealth	+ Level of technology		+ Value of foreign currencies
+ Disposable income	— Business tax		— Level of protectionism
— Income tax	— Level of corporate debt		
— Level of household debt			

(+) = positive relationship, (—) = negative relationship.

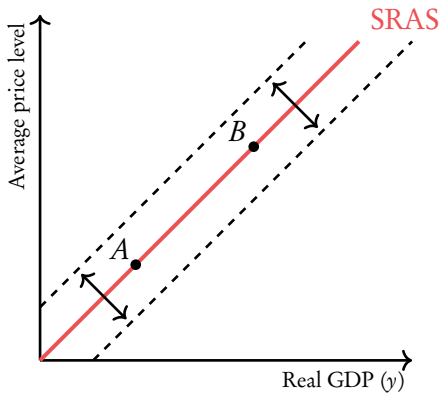
3.2.2 Short run aggregate supply

Aggregate supply (AS) The total amount of goods and services that all industries in the economy will produces at every given price level. In the short run (SRAS) or in the long run (LRAS).

The SRAS curve is typically upward sloping: if the average price increases, producers will typically produce more to increase revenue or profit.

Shifts of and moves along the SRAS curve

Figure 3.4: Short Run Aggregate Supply Curve.



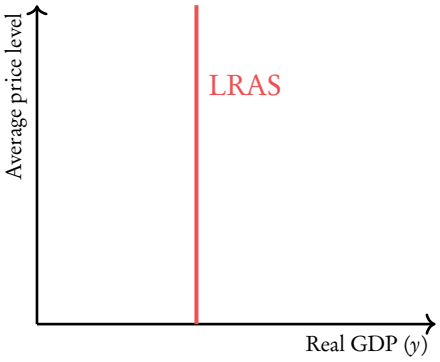
- A move *along* the SRAS curve occurs when the average price level changes. If, for example, the average price level increases, a shift along the SRAS curve may occur from point *A* to point *B*.
- A shift *of* the SRAS curve occurs when one of the components that make up SRAS increase or decrease: when resource prices or business taxes decrease (increase) or subsidies increase (decrease) the SRAS curve will shift to the right = a general increase in short run supply (left = a general decrease in short run supply).

3.2.3 Long run aggregate supply

In the long run the AS curve differs from the SRAS curve. But the exact difference is disputed: neo-classical economists and Keynesian economics both have a different view on what the long run aggregate supply (LRAS) curve should look like:

Figure 3.5: The neo-classical LRAS curve and the Keynesian AS curve.

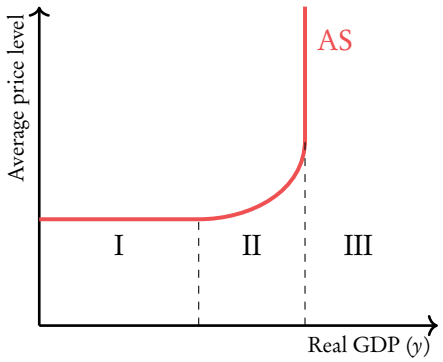
Neo-classical LRAS



In the opinion of neo-classical economists, producers are producing at full capacity, they cannot produce more, so a change in price doesn't and cannot influence the LRAS. The LRAS curve only depends on the quantity and quality of factors of production. When they increase (decrease) the LRAS will shift to the right (left).
Quantity and quality of factors of production are influenced by:

- Changes in efficiency (+)
- Technological development (+)
- Changes in unemployment (–)
- Institutional / government policy changes (+/–)

Keynesian AS



The Keynesian AS curve consists of three parts:

I Producers are producing below capacity, so they can increase output without raising the cost of a product, the average price level remains the same.

II When producers increase output even further, factors of production will become scarce, increasing the price of the product.

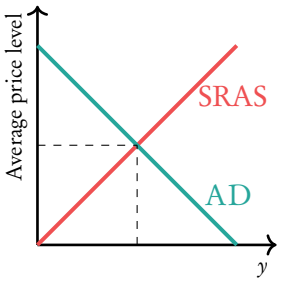
III Producers are operating at full capacity, they cannot increase output any further.

3.2.4 Equilibrium

The equilibrium point is the point at which demand is equal to supply. This point determines the average price and quantity produced and sold on the market. Since we have learned that there are three different supply curves, three possible equilibria exist:

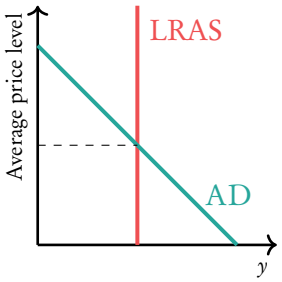
Figure 3.6: Three equilibria: short run, long run neoclassical view and long run Keynesian view.

Short run



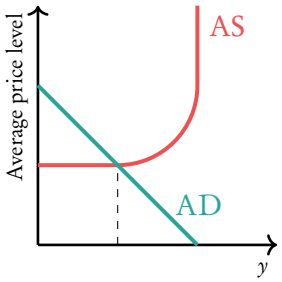
Price and output are determined by the interaction of AD and SRAS.

Long run – neoclassical



The impact of any changes in AD will be on price only, because LRAS is a vertical line so output will not change.

Long run – Keynesian



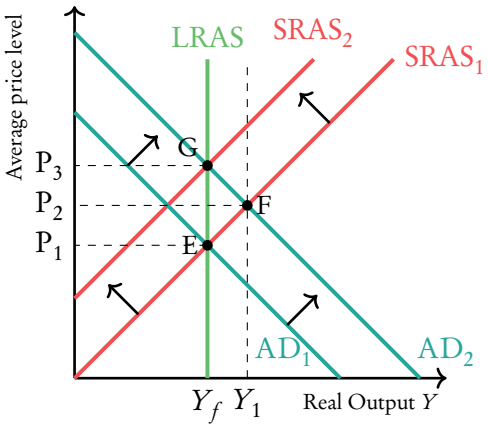
The economy usually operates at less than capacity (as shown). This will lead to slow growth and unemployment.

Changes in the long run neoclassical equilibrium

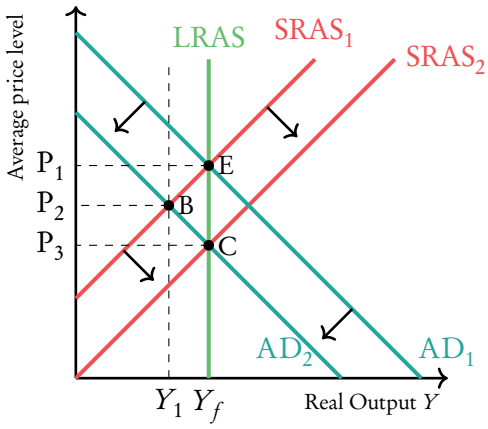
Two possible changes are possible: (1) an increase in AD and (2) a decrease in AD. We will illustrate both changes graphically:

Figure 3.7: Changes in the neoclassical equilibrium.

Increase in AD



Decrease in AD



Increase in AD

- E is our starting point: long run equilibrium, full employment (producers are producing at full capacity)
- AD increases so we move from AD_1 to AD_2. We end up at point F at a higher average price and a higher output.
- But this means that the economy is now producing beyond full capacity, this leads to a dramatic increase in costs.
- In order to solve this, firms will decrease their SRAS, so SRAS shifts to the left: $SRAS_1 \Rightarrow SRAS_2$. We end op at point G.
- Result: we end up at the same level of real output as before (again full employment) but at a higher average price.

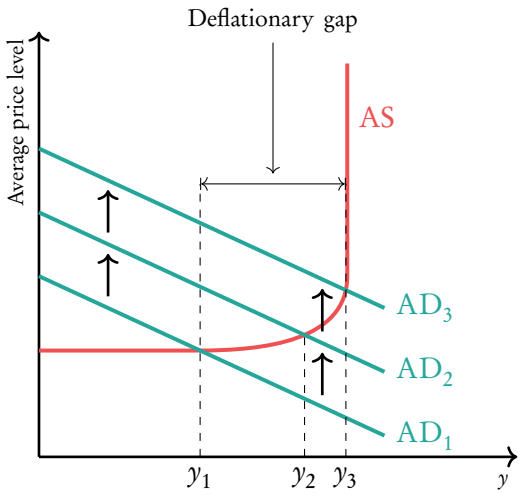
Decrease in AD

- E is our starting point: long run equilibrium, full employment (producers are producing at full capacity)
- AD decreases so we move from AD_1 to AD_2. We end up at point B at a lower average price and a lower output.
- But this means that the economy is now producing below full capacity, this leads to a dramatic decrease in costs.
- In order to solve this, firms will increase their SRAS, so SRAS shifts to the right: $SRAS_1 \Rightarrow SRAS_2$. We end op at point C.
- Result: we end up at the same level of real output as before (again full employment) but at a lower average price.

Changes in the long run Keynesian equilibrium

Again we will discuss what will happen when AD changes, but this time in the situation of a long run Keynesian equilibrium.

Figure 3.8: Change in the Keynesian equilibrium: increase in AD.



Increase in AD (decrease in AD: the opposite will happen)

- We start at AD_1, output is at y_1. At this point production is below capacity: there will be unemployment and slow growth. There is a deflationary gap: demand is less than potential output.
- AD increases so we move from AD_1 to AD_2. This reduces unemployment (output increases), but also increases inflation (price level increases).
- When AD increases even further to AD_3, the same thing will happen.
- But with each increase of AD the increase in output will be less big and the inflation even higher.

Shifts in the LRAS curves

Another possibility is the increase of the neoclassical LRAS or Keynesian AS curve, which can shift either to the left or to the right. When this happens, all you have to do is find the intersection of the new LRAS curve and the AD curve. Production and average price level will be at this point.

3.3 Macroeconomic objectives

3.3.1 Low unemployment

Unemployment All people of working age that are not working and are actively looking for a job.

Unemployment rate $\frac{\text{unemployed people}}{\text{labour force}} \times 100$

Labour force Everyone that can, wants to, and is allowed to work. Typically the labour force consists of all people that are currently employed + all unemployed people.

Unemployment can be hard to measure, this has several reasons:

1. The existence of hidden unemployment: people not represented in the unemployment figures:
   - people who have given up looking for a job;
   - people in a part-time job that would want to work full time (which isn't possible);
   - people who are overqualified for a job, but can't find a better one.
2. Unemployment figures are an average: the unemployment figure ignores regional, ethnic, age and gender differences.

Consequences of unemployment

Economical Consequences

- Loss in GDP (drop in production).
- Loss of tax revenue, because unemployed people have less income to pay taxes.
- Increased cost of unemployment benefits.
- Loss of income for individuals.
- Greater differences in income distribution.

Personal Consequences

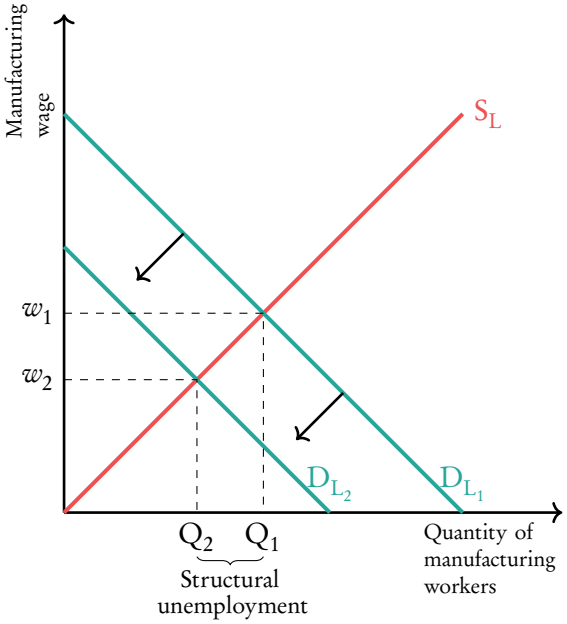
- Increased crime rates, using crime to increase money to spend.
- Increased stress levels; worries over money
- Increased indebtedness.
- Being unable to pay for housing; homelessness.
- Family breakdown.

Table 3.4: Types of unemployment.

Type	Cause	Possible solutions
Cyclical (demand deficient)	Decrease in aggregate demand, causes production to go down and people to become unemployed	• Demand side policies to increase AD
Structural	Permanent changes in demand and supply (e.g. change in taste, advance in technology) causes people in certain industries to become redundant	• Retraining employees to fit other jobs • Encourage people to move to other regions • Reduce unemployment benefits to encourage people to find a new job • Less regulation so employment becomes easier
Seasonal	Lower labour demand at certain times of year (e.g. less labour demand for waitresses in winter)	• Reduce unemployment benefits • Encourage to take other jobs in the off-period
Frictional	Imperfect information: it takes time to find a new job when you have left your old one	• Improve information flow (e.g. vacancy websites) • Reduce unemployment benefits

Graphical depiction of unemployment

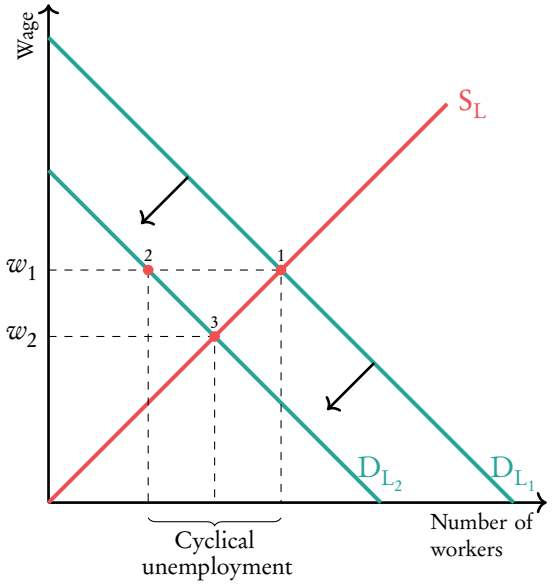
Figure 3.9: Graphical depiction of structural unemployment.



Structural unemployment

- Due to a change in AD (e.g. taste, technology) the labour demand (D_L) decreases from D_{L_1} to D_{L_2}.
- Employment decreases from Q_1 to Q_2.
- Wages decrease from w_1 to w_2.

Figure 3.10: Graphical depiction of cyclical unemployment.



Cyclical unemployment

- Due to economic recession labour demand decreases from D_{L_1} to D_{L_2}.
- But wages are sticky, it takes time for wages to adjust to a new situation. This can be because contracts determine wages over a longer time period or people who are already employed won't take a lower wage: they remain at w_1 instead of falling to w_2.
- There is a surplus of labour: supply of labour is at point 2, demand for labour at point 1.

3.3.2 Low and stable rate of inflation

Inflation A sustained increase in the level of prices.

Disinflation A persistent fall in the rate of inflation.

Deflation A persistent fall in the level of prices.

Consumer Price Index (CPI)

Economists compile a basket of goods that is representative for the economy, they then compare the cost of this basket over time. The increase in price of the basket is the inflation rate.

$$\text{CPI} = \frac{\text{Cost of a typical basket in year 2}}{\text{Cost of a typical basket in year 1}} \times 100$$

$$\begin{aligned}\text{Cost of typical basket} = {} & \text{Price of product category 1} \times \text{weight factor}_1 \\ & + \text{Price of product category 2} \times \text{weight factor}_2 + \ldots \\ & \cdots + \text{Price of product category } n \times \text{weight factor}_n\end{aligned}$$

$$\text{Inflation rate} = \frac{\text{new CPI} - \text{old CPI}}{\text{old CPI}} \times 100$$

Consequences

Consequences of inflation

- Greater uncertainty: what will prices do in the future?
- Decrease in purchasing power: people can buy less due to higher prices.
- Less savings: people want to spend money now, because it is decreasing in value.
- Damage to export competitiveness: foreign countries will buy less goods from the country that has inflation due to increasing prices in this country.

Consequences of deflation

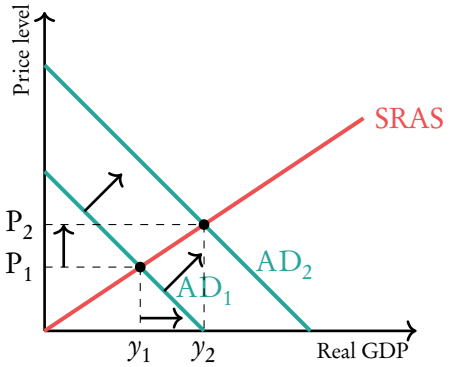
- Deferred consumption: consumers will wait to spend money, because prices are decreasing: goods bought in the future will be cheaper.
- High level of cyclical unemployment: less consumption will lead to less production and therefore causes unemployment.
- Bankruptcies: less consumption will cause profits of firms to decline. This may result in them having to shut down.

Difficulties in measuring inflation

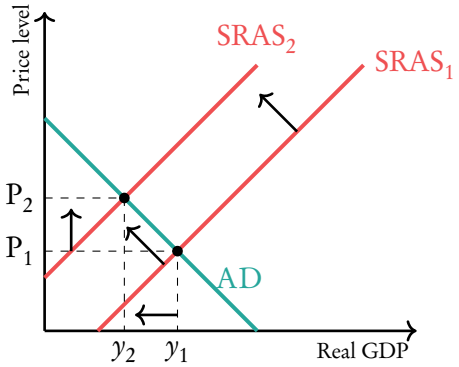
- Different income earners may experience a different rate of inflation when their consumption pattern is not accurately reflected in the CPI (it is an average).
- Inflation figures may not accurately reflect changes in consumption patterns and the quality of the goods purchased.
- Sudden swings in the price level of food and oil can influence CPI heavily. Economists therefore also calculate an underlying rate of inflation.
- CPI only measures change in consumption prices, while changes in producer prices are also important (the PPI *does* use producer prices).

Two different forms of inflation

Figure 3.11: Graphical depiction of demand pull inflation (left) and cost-push inflation (right).



As you can see in the graph an increase in AD (shift to the right) causes price level to rise from P_1 to P_2.



When the cost of production for some reason increases, the SRAS curve will shift to the left: production will decrease. This causes price level to rise from P_1 to P_2.

How could the government reduce inflation?

Increase taxes / reduce government spending (fiscal policy): this will cause incomes of people to decrease, reducing spending and thus reducing demand pull inflation.

Raise interest rates: this will cause people to save more (they will get more interest) and spend less, this reduces demand pull inflation.

Reduce money supply (monetary policy): when there is less money in circulation, the value of money will increase. So less money is needed to buy something and the price is reduced.

Supply-side policies – shift supply curve to the right: (e.g. education, invest in technology etc.) this will reduce the cost for producers, reducing cost-push inflation.

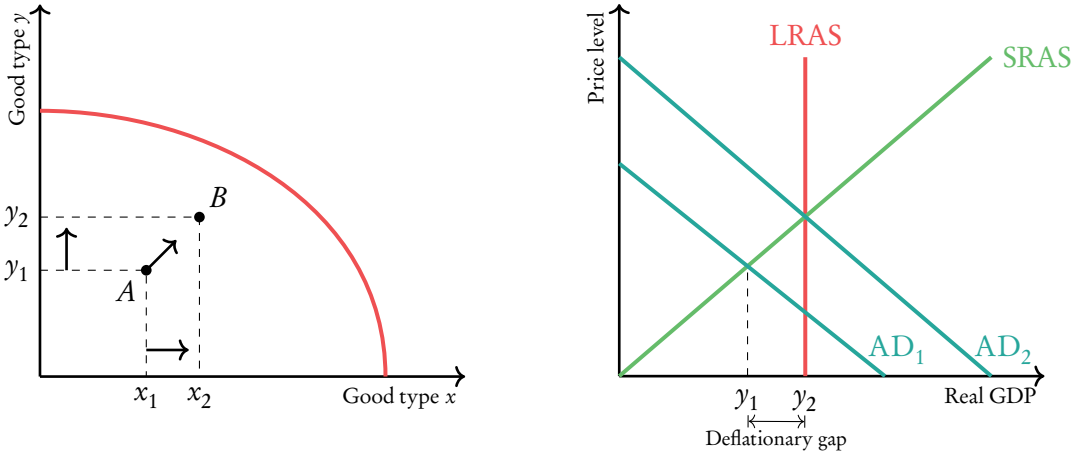
3.3.3 Economic Growth

Economic Growth $\dfrac{\text{new GDP} - \text{old GDP}}{\text{old GDP}} \times 100$

There are two possible sources of economic growth:

1. GDP increases due to an increase in output
2. GDP increases due to an increase in potential output

Increase in output



The graph on the left shows the Production Possibilities Frontier (PPF) = A curve that shows the theoretical maximal combination of two goods that an economy can produce if full use is made of all factors of production.

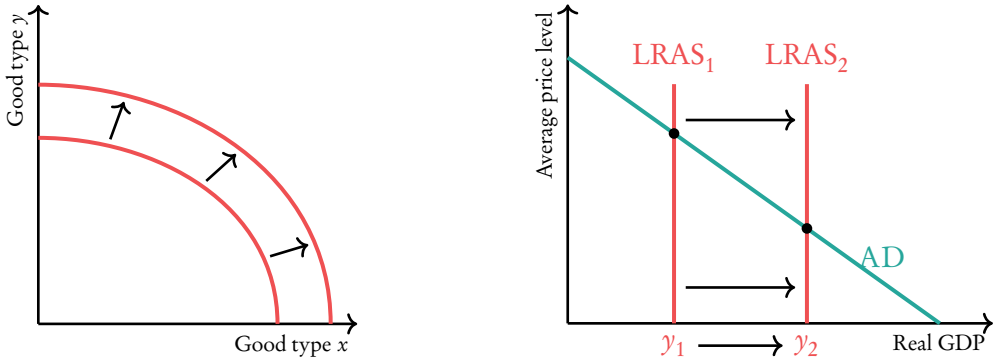
When AD increases ($AD_1 \Rightarrow AD_2$ in the graph on the right), GDP will increase as well ($y_1 \Rightarrow y_2$).

In the PPF: a shift from point *A* to point *B*: a higher production of both goods can be attained.

Possible cause: the country is making better use of existing resources, resulting in a more efficient production.

The gap between y_1 and y_2 is called a deflationary gap, because the economy was not producing at capacity (a point on the LRAS) curve.

Increase in potential output



The theoretical maximum production is increased, the production at full capacity is higher than before.

LRAS (= production at capacity) increases: $LRAS_1 \Rightarrow LRAS_2$.

PPF shifts outwards: the theoretical maximum production is increased, so more of both good *y* and good *x* can be made.

Possible cause: increases in the quantity and quality of resources due to investments in:

Human capital to increase productivity / skill of workers
(e.g. through education).
Physical capital to increase quantity / quality of man-made resources
(e.g. better machines, technological advance).
Natural capital to improve / increase the stock of natural resources
(e.g. explore parts of the world for fossil fuels).

Consequences of economic growth

- Increase in living standards, due to higher GDP per capita, increase in wealth.
- Decrease in unemployment, more workers needed for the increased production.
- Possible increase in inflation; when caused by a higher demand prices may rise due to demand pull inflation.
- Possible reduction in inequality (using taxation). Governments can increase their tax revenue and redistribute more.
- Increase in exports and imports: more production may lead to a higher export potential, more demand may lead to a higher import potential.
- Possible increase in sustainability. When GDP is growing there is more money available to work on sustainable technologies / when GDP growth is caused by technological advance, part of that technological advance may be used for a more sustainable production.
- Possible decrease in environment: a higher GDP means production has increased. Production may be polluting the environment.

3.3.4 Equity in the distribution of income

Equity Fair distribution of income.

Equality Equal distribution of income.

Due to unequal ownership of factors of production there is inequitable distribution of income.

How to promote equity?

Taxation to redistribute income

- Direct vs. indirect taxes
  - Direct: imposed directly on income, wealth and profit. (e.g. income tax)
  - Indirect: imposed over consumer spending (e.g. VAT)
- Progressive, regressive and proportional taxation
  - Progressive: the higher the income, the higher the average tax rate.
  - Regressive: the higher the income, the lower the average tax rate.
  - Proportional: same tax rate for all incomes.

Direct government expenditures

- Provide money directly to people
- Subsidies (e.g. subsidise certain sectors in order to employ more people).

Transfer Payments (e.g. unemployment benefits, pensions).

Evaluation of redistribution of income policies

Arguments in favor of redistributions

- Taxes are important revenue for the government
- Taxes can help reduce market failure (see microeconomics).
- Redistribution makes the distribution of income more fair

Arguments against redistribution

- Full efficiency can only be reached without government intervention
- Taxes may discourage people to work or engage in entrepreneurial activities
- Taxes have negative effects on growth
- Transfer payments cost a lot of money which could also be used elsewhere

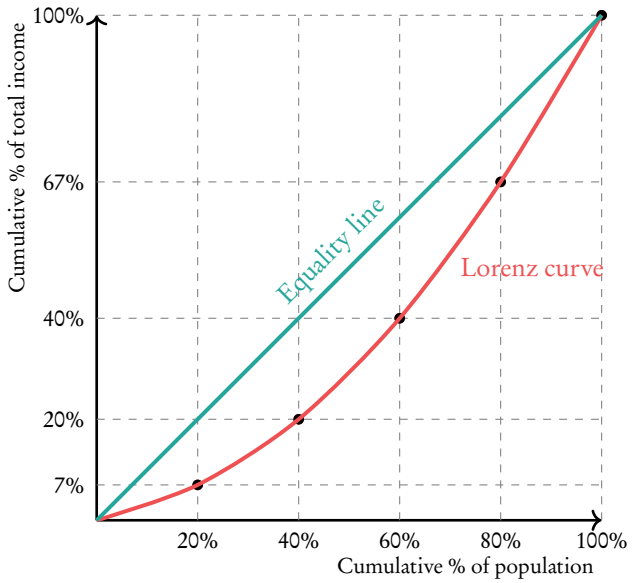
Lorenz curve

The degree of equity can be measured using the Lorenz curve. A Lorenz curve is shown on Figure 3.12, drawn on the basis of the fictional data in Table 3.5.

Table 3.5: Fictional data to draw a Lorenz Curve.

Person	Income	% of population	Cumulative	% of total income	Cumulative
A	10,000$	20%	20%	7%	7%
B	20,000$	20%	40%	13%	20%
C	30,000$	20%	60%	20%	40%
D	40,000$	20%	80%	27%	67%
E	50,000$	20%	100%	33%	100%

Figure 3.12: Lorenz curve.



The population of a country is divided into a number of income groups of equal size (in this example: 5). The first group contains the 20% poorest people of the country, the final group the 20% richest people of the country. Of each group the percentage of total income which the people in the respective group earn is calculated.

The cumulative data of these percentages is used to draw the Lorenz curve.

The green line in the diagram represents the equality line: if every group earned the same percentage of total income, the Lorenz curve would lie on this equality line. The further away the Lorenz curve lies from the equality line, the less equal the income is distributed among the people of the country.

Another measure of equality is the Gini-index. This is a number between 0 and 100. The higher this Gini-index the more unequal the distribution of income.

Poverty

In some cases income is distributed extremely unequal. In these cases poverty is imminent.

Absolute poverty The inability to fulfil the basic economic needs.

Relative poverty Being poor relative to others around you.

Causes of poverty

- Low incomes
- Unemployment
- Lack of human capital, not having enjoyed enough education may lead to unemployment and low incomes.

Consequences of poverty

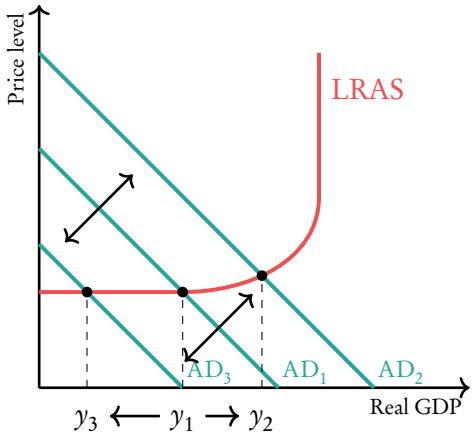
- Low living standards
- Lack of access to health care and education

3.4 Government intervention

3.4.1 Fiscal policy

Fiscal policy Government intervention by either adjusting taxes or adjusting government spending.

Figure 3.13



Two types of fiscal policy

Expansionary fiscal policy

- Reducing taxes
- Increasing government spending
- AD increases: a move from AD_1 to AD_2.

Contractionary fiscal policy

- Increasing taxes
- Decreasing government spending
- AD decreases: a move from AD_1 to AD_3.

Fiscal policy also automatically stabilises short term fluctuations in GDP: e.g. unemployment benefits, progressive tax system. People suddenly losing their job in a time of crisis get benefits from the government, so their loss in income is manageable. Their purchasing power / expenditure doesn't decrease that much, so GDP will not fluctuate dramatically.

Fiscal policy also promotes long term economic growth:

- Government expenditure can help to create an economic environment favourable to investment. (e.g. investing money in infrastructure).
- Direct investments by the government may lead to a more efficient production (e.g. by providing companies with the means to do more research & development).

The government budget

Government Revenue

- Taxes
- Sale of goods and services (e.g. by companies that belong to the government).
- Sale of state owned enterprises

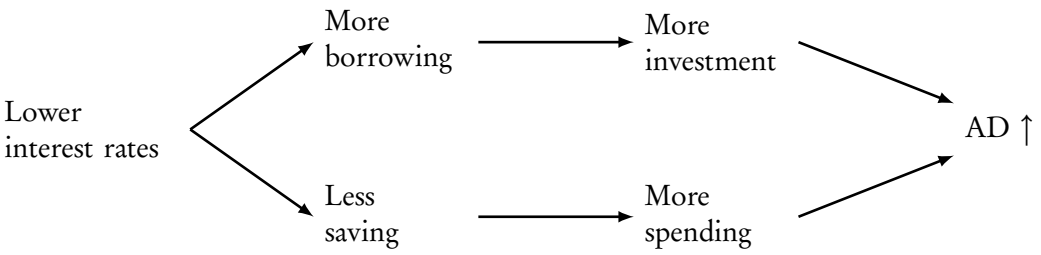
Government Expenditures

- Current expenditures = recurring expenditures (e.g. wages of civil servants, interest on government debt).
- Capital expenditures = one-time payments (e.g. building a new school).
- Transfer payments = payments to citizens (e.g. welfare, pensions).

• Revenue > expenditures	→ surplus	→ government debt decreases
• Revenue < expenditures	→ deficit	→ government debt increases
• Revenue = expenditures	→ balanced budget	→ government debt remains the same

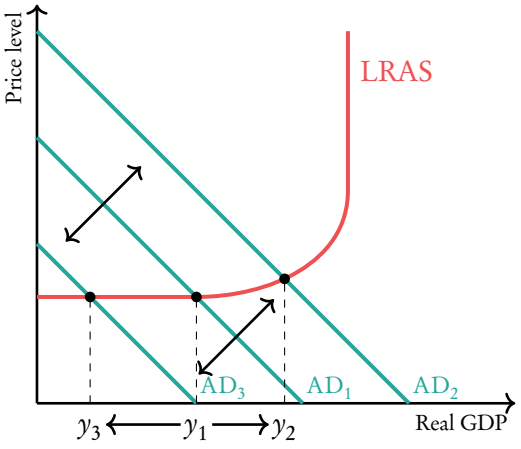
3.4.2 Monetary policy

Monetary policy Central bank intervention by adjusting interest rates or money supply.



Two types of monetary policy

Figure 3.14



Expansionary / easy monetary policy

- Increasing the money supply, this will decrease the price paid for money (which is interest) so interest will decrease.
- AD increases: a move from AD_1 to AD_2.

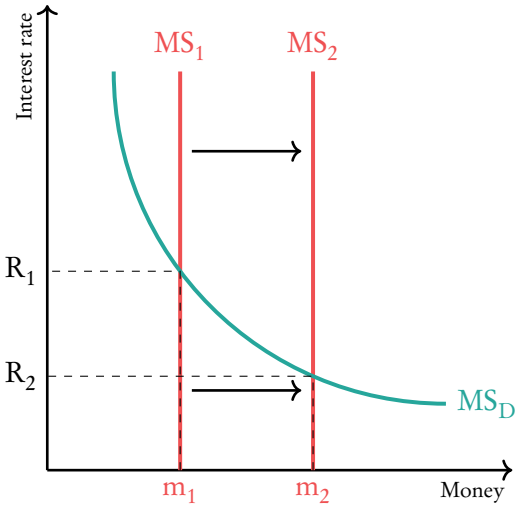
Contractionary / tight monetary policy

- Decreasing the money supply, this will increase the price paid for money (which is interest) so interest will increase.
- AD decreases: a move from AD_1 to AD_3.

Note: Central banks are more guided by maintaining a stable rate of inflation than by influencing aggregate demand. Central banks will therefore seldom use their powers to try and increase AD.

The role of central banks

Figure 3.15



Responsibilities of Central Banks

- Controlling inflation
- Controlling money supply
- Influencing exchange rates
- Regulating commercial banks
- Controlling interest rates

What can Central Banks Do?

- Increase money supply (releasing money from reserves). This will cause the Money Supply Curve (MS) to shift to the right ($MS_1 \Rightarrow MS_2$). This measure will decrease the price of money = interest rate.
- Change the interest rate directly, this will have the same effect.

3.4.3 Supply side policies

Supply side policies Government intervention by affecting the production side of the economy
⇒ changing the quantity or quality of the factors of production.

Two types of supply side policy

Interventionist supply side policies
(focuses on government intervention)

- Investment in human capital (e.g. providing education).
- Investment in new technologies.
- Investment in infrastructure.
- Policies that favour industrial companies, e.g. tax cuts, subsidies.

⇒ These policies allow companies to produce more efficiently, which may lead to an increase in production. In the graph this will shift the LRAS curve to the right ($LRAS_1 \Rightarrow LRAS_2$).

Market based supply side policies
(reduce competition, encourage free markets)

- Reforming the labour market to increase flexibility, this may make it easier for companies to find the right personnel.
- Incentivise working of labourers by cutting income tax. Incentivise investment by firms by cutting corporate tax.

⇒ These policies allow firms to produce more efficiently, which may lead to an increase in production. In the graph this will shift the LRAS curve to the right ($LRAS_1 \Rightarrow LRAS_2$).

3.4.4 Evaluation of policies

Fiscal Policy

+ Positively affects growth
+ Ability to target specific sectors
+ Direct impact on AD
+ Works well in a recession

– It takes time to work (time lag)
– Can't influence the supply side of the economy
– Negatively influences government budget
– Raise in government spending can increase interest rates
⇒ less consumption and investment (crowding out)

Monetary Policy

+ Easy to increase interest rates
+ Interest rates can be increased step-by-step (incrementally)
+ Positively affects growth

– Takes time to work (time lag)
– Doesn't work well in a recession
– Conflict of interest with inflation targets

Supply-side policies

+ Positively affects growth
+ Creates employment
+ Reduces inflationary pressure

– Takes time to work (time lag)
– Can negatively influence equity
– May be politically undesirable
– May negatively influence the environment

GLOBAL ECONOMY

4

4.1. Trade 67

This section will discuss a wide array of subjects concerning international trade. First the *Advantages of free trade*. Next *The World Trade Organisation* will be discussed. What follows is an explanation of *Trade protectionism* and of *Arguments for and against protection*. Finally *Economic integration* is discussed.

4.2. Exchange rates 72

This section discusses how the value of a currency is determined. It can be done using one of three different regimes: *Freely floating exchange rates*, *Fixed exchange rates* and *Managed exchange rates*. In this section the theory behind each regime is explained.

4.3. The balance of payments 76

All inflows and outflows of money of a certain country can be found on the balance of payments. This section will first discuss *The structure of the balance of payments*, before going into *Current account deficits and surpluses*.

4.4. Sustainable development 77

4.5. Measuring development 80

4.6. Contributions and barriers to development 84

4.7. Evaluation of development policies 89

This final section will evaluate the policies that can be used to help developing countries develop. We will first evaluate the *Market oriented policies*, before going into the *Interventionist policies*.

4.1 Trade

4.1.1 Advantages of free trade

International free trade may have the following advantages:

Lower prices for consumers: due to free trade consumers can import the goods they want from the country that can make them the cheapest. They do not necessarily have to buy the good domestically.

Greater choice for consumers: consumers can choose from goods that are made all over the world, and not just in their own country.

The ability for producers to benefit of economies of scale: producers can sell to a larger market (the whole world instead of just one country) which allows them to grow and to further exploit economies of scale to produce more efficiently.

The ability to acquire needed resources: firms may now have access to resources which cannot be found domestically.

A more efficient allocation of resources: resources can now be used in the country that can make most efficient use of them.

Increased competition: free trade opens up the world market to a large number of firms that will compete. Competition will lead to more diverse products, more quality and lower price.

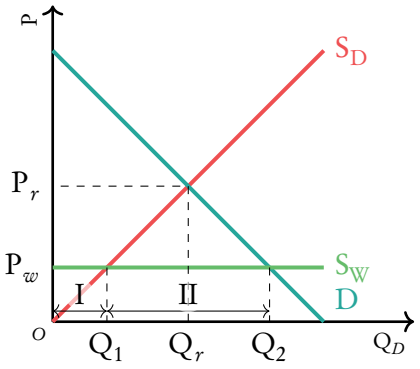
Source of foreign exchange: countries can use free trade to get foreign currency or make dispose of domestic currency (foreign countries can pay for goods they import in their own currency).

4.1.2 Trade protectionism

Different forms of trade protection exist. In this section we will first look at a graphical depiction of a free trade situation. Then, we will show what happens to the free trade equilibrium in case of (1) a tariff, (2) a subsidy and (3) a quota.

Market with free trade

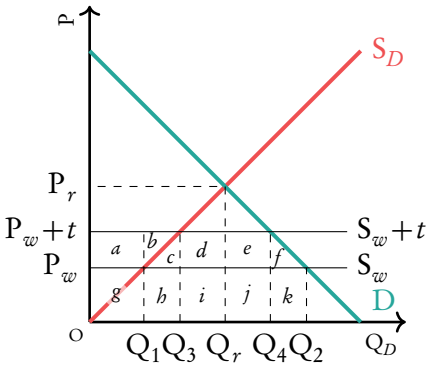
Figure 4.1



In this market with free trade the product is both produced domestically and imported (world production).
The domestic production is represented by the S_D curve and the world production by the S_W curve.
S_W is a horizontal line, the world production is not affected by the price on the domestic market, because the domestic market is only a small fraction of the world market.
In the case of free trade, producers will produce Q_1 (I).
Beyond Q_1, the price of world production will be below the price of domestic production, Q_1Q_2 (II) will be imported.

Tariff Tax charged on imported goods.

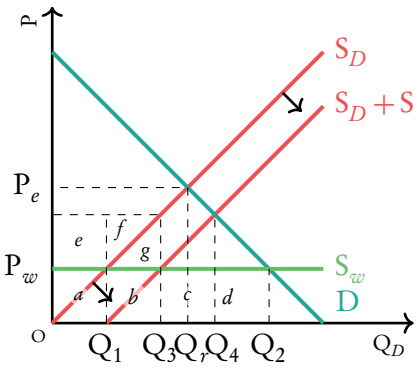
Figure 4.2



- S_{world} will shift upwards, because foreign producers have to pay the tariff in order to sell their goods in the country. Domestic consumers will face a higher market price.
- Import is reduced from Q_1Q_2 to Q_3Q_4.
- Foreign producer revenue is $d+e+i+j$ minus the tax of $d+e$, so $i+j$ in total.
- Domestic production increases from Q_1 to Q_3.
- Domestic revenue increases from g to $a+b+c+g+h$.
- Government revenue is represented by $d+e$.
- The tariff causes a welfare loss of $c+f$.

Subsidy Sum of money given to producers.

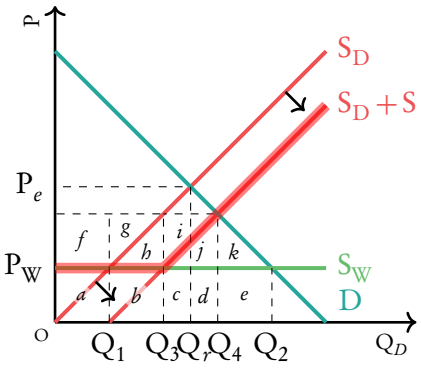
Figure 4.3



- The subsidy will increase the domestic production so S_D will shift to the right to S_{D+S}.
- Domestic production increases from Q_1 to Q_3.
- Domestic revenue increases from a to $a+b+e+f+g$ of which $e+f+g$ is the subsidy.
- Import decreases from Q_1Q_2 to Q_3Q_2.
- Foreign revenue decreases from $b+c+d$ to $c+d$.
- The government spending on the subsidy is represented by $e+f+g$.
- The subsidy results in a welfare loss represented by g. This area represents the net loss in producer and consumer surplus.

Quota Limit on imported goods.

Figure 4.4



- A quota is imposed at Q_1Q_3, meaning that the country can not import any further than point Q_3.
- Domestic production will be Q_1 and Q_1Q_3 will be imported.
- Beyond this point, the excess demand will cause domestic producers to be willing to produce more (at a higher price), S_D will thus shift to the right.
- Domestic revenue increases from a to $a+c+d+f+i+j$.
- Foreign revenue decreases from $b+c+d+e$ to $b+g+h$.
- The welfare loss is represented by $j+k$.

In addition to quota, tariffs and subsidies, countries can also set administrative barriers such as:

- Requiring a lot of paperwork before a good can be imported (this form of administrative barriers are often referred to as "red tape").
- Setting high health and safety standards that products have to comply to in order to be imported.

4.1.3 Arguments for and against protection

Arguments for protectionism

- Domestic jobs are protected because domestic consumers are more dependent on domestic production.
- Protection can reduce dependence on international trade and can this way protect national security.
- Infant industries can freely develop when they do not face competition from foreign established producers.
- Maintenance of health, safety and environmental standards.
- Foreign producers can use the market of other countries to dump excess production at extremely low prices. Protectionism protects domestic producers for this kind of unfair competition.
- Protectionism limits imports, this way a balance of payments deficit can be overcome.
- The government can profit out of tariff revenues.

Arguments against protectionism

- It raises prices because its limits free trade.
- Import is limited, which limits the diversity of goods being supplied on the domestic market, limiting consumer choice.
- Competition diminishes, which reduces the positive effects of competition such as improved quality and diversification of products.
- Foreign countries may retaliate with trade barriers of their own, harming the exporting companies of the domestic country (trade wars).
- Resources may not be used in the country that can make most efficient use of them: misallocation of resources
- Because governments can earn major sums of money by using tariffs there is great potential for corruption, especially in less developed countries.
- Domestic companies may focus more on the domestic market due to the barriers, thereby reducing their export competitiveness.
- Increased cost of imported factors of production, because tariffs and quota may also apply to these.

4.1.4 The World Trade Organisation

The World Trade Organisation (WTO) is an international organisation that sets the rules for global trading and resolves disputes between its member countries.

Objective

Increase international trade by lowering trade barriers and provide a forum for negotiations.

Functions of the World Trade Organisation

- Administer Wto trade agreements that the Wto has set up between countries.
- Be a forum for trade negotiations and facilitate in setting up trade deals.
- Handle trade disputes among member states.
- Monitor national trade policies.
- Provide technical assistance and training for developing countries.
- Cooperate with other international organisations in order to increase trade.

Factors that limit the effectiveness of the WTO

- Some economies, especially the USA and the EU are said to have too much power in the Wto and its trade negotiations
- Trade rules that are unfair toward developing countries and fail to protect their "infant industries"
- Growing number of trade deals are negotiated outside of the WTO

4.2 Exchange rates

4.2.1 Freely floating exchange rates

Figure 4.5: Demand and Supply for a currency (the euro).

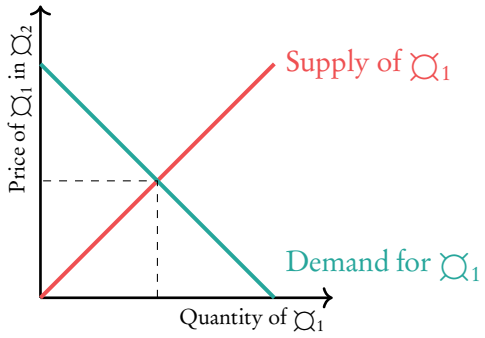


Figure 4.6: An increase in demand for the currency leads to an increase in the price (value of the currency): an appreciation.

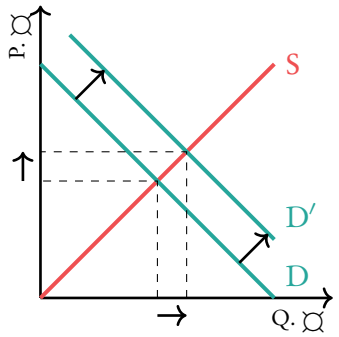
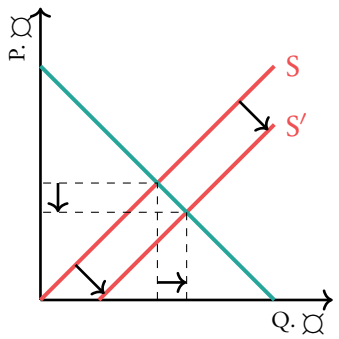


Figure 4.7: An increase in supply of the currency leads to a decrease in the price (value of the currency): a depreciation.



The exchange rate is the value of one currency expressed in terms of another currency. (e.g., 1€ = 1.15$).

In a freely floating exchange rate regime, the value of an exchange rate is determined by the demand for and supply of that currency. At the equilibrium point the price and quantity of the currency on the market is determined (see graph).

Demand for and supply of currency can change due to shifts in the supply and demand curves. This will lead to a change in exchange rate as well. These changes in exchange rates due to market shocks are called depreciations and appreciations.

If the supply of the € decreases (supply curve shifts to the left) or the demand for the € increases (demand curve shifts to the right), the value of the € will go up, and the exchange rate will increase; we call this an appreciation of the €.

If the supply of the € increases (supply curve shifts to the right) or demand for €s decreases (demand curve shifts to the left), the value of the € will go down and the exchange rate will decrease; we call this a depreciation of the €.

Note: we only call it appreciation or depreciation if the shift in demand/supply is caused by market forces (and not when it is caused by government intervention).

Calculating with exchange rates

You may be asked to make various, simple calculations relating to exchange rates in paper 2!

1. If the Japanese yen is currently trading against the Canadian dollar at a rate of 1 JPY = 0.010 CAD. What is the rate for 1 CAD ($) in JPY (¥)?

   If 1¥= 0.010$, then 1$ = 10.01 = 100¥.

2. With the above exchange rate, calculate the cost in Canadian dollars for a good that is selling for 2075¥

   $2075 \times 0.01 = 20.75\$$

3. If the exchange rate changes from 1 JPY = 0.010 CAD to 1 JPY = 0.020 CAD, what would happen to the price of a Japanese kimono in Canadian dollars that is exported to Canada with the price of 5000¥?

   Price with the initial exchange rate would have been $5000 \times 0.01 = 50\$$.
   Price with the new exchange rate is $5000 \times 0.02 = 100\$$.

   With the new exchange rate, the value of the Canadian dollar has depreciated against the Japanese yen. It now costs more dollars to buy the same amount of yen.

What factors influence supply of and demand for a currency?

Foreign demand for exports: when foreign demand for exports increases, demand for the currency will increase because foreign nations will need to buy the exports in the domestic currency.

Domestic demand for imports: when domestic demand for import increases, the supply of the domestic currency increases because domestic consumers will need to buy the import in the foreign currency. They will need to exchange the domestic currency for the foreign currencies.

Domestic interest rates relative to foreign interest rates: when the domestic interest rate increases relative to the foreign interest rates, foreign investors will bring their money into the domestic country. They can only deposit money of the domestic currency on the domestic country's banks, so demand for domestic currency (in order to exchange their foreign currencies) will increase.

Investment from overseas in domestic firms: when foreign investors invest more in domestic firms the demand for domestic currency will increase, because these investments must be made in the domestic currency.

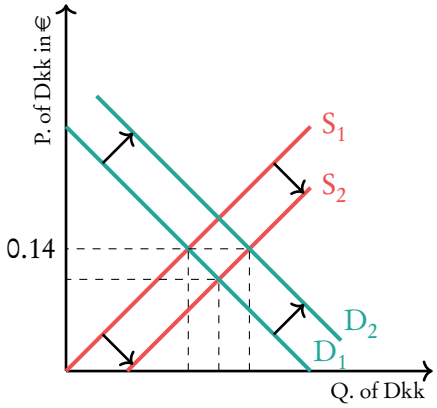
Speculation: investors may spread rumors about the future development of exchange rates and speculate on future value. Anything can happen to the value of the currency, depending on the content of the rumors.

What happens if the domestic currency appreciates?

- Domestic products will be more expensive to buy for foreign nations so exports will decrease.
- This will result in decreased employment, because people producing goods for exports will be needed less, and less economic growth.
- Foreign products will be cheaper to buy for the domestic nations so imports will increase.
- This will result in less inflation due to decrease in price of imports.
- Because exports decrease and imports increase the current account balance (X—M) decreases.

4.2.2 Fixed exchange rates

Figure 4.8: The revaluation of a currency.



A fixed exchange rate regime is an exchange rate regime in which the value of the currency is pegged to the value of another currency e.g. 1 Danish krone (DKK) will always be 0.14€.
But what if due to a shock the price of DKK decreases? e.g. due to an increase in supply of DKK because the Danes suddenly buy more? ($S_1 \Rightarrow S_2$).
The government will have to increase demand for DKK in order to keep the exchange rate fixed at 0.14€. (How the government can do this is discussed later on in this chapter).
The demand curve for the currency will therefore shift to the right ($D_1 \Rightarrow D_2$).
This rise in value of the currency caused by government is called a revaluation; a decrease in value caused by the government is called a devaluation.

4.2.3 Managed exchange rates

Under a managed exchange rate regime the exchange rate is freely floating but there is periodic government intervention to influence the value of the exchange rate. For example there is a bandwidth within which the value of the currency can freely float but if the value of the currency goes outside this bandwidth, the government will intervene.

How does the government influence demand for and supply of a currency?

1. Using reserves of money (the central bank has in them in the vaults) to buy or sell foreign currencies:
   - Selling foreign currencies in exchange for domestic currency decreases the supply of and increases the demand for domestic currency.
   - The opposite is true for buying foreign currency in exchange for domestic currency.
2. Changing interest rates:
   - If a government were to increase the domestic interest rate this would draw (the money of) foreign investors to the country and they would have to exchange their foreign currency for domestic currency. This increases demand for domestic currency and decreases supply of domestic currency.
   - The opposite is true for a decrease in interest rate.

Overvalued currency Keeping the value of the exchange rate artificially high through periodical government intervention in the foreign exchange market.

4.2.4 Overvalued currency, evaluation

Benefits

- Downward pressure on inflation, as imported final goods are cheap
- Increased purchasing power on imported materials and goods
- Forces domestic producers to improve their efficiency in order to compete in the world market with a relatively higher selling price

Possible drawbacks

- Damage to export industries
- Damage to domestic industries as domestic consumers switch to consuming imports

Undervalued currency Maintaining an artificially low value of the exchange rate.

Undervalued currency, evaluation

Benefits

- Exports appear more competitive in the world market
- Increased employment in export industries
- Increased employment in domestic industries

Possible drawbacks

- Imports become expensive
- The increased price of imported materials may spur cost-push inflation

4.3 The balance of payments

4.3.1 The structure of the balance of payments

The balance of payment is a record of all money entering the country (credit, +) and leaving the country (debit, —). It consists of different sub-accounts, which can be summarised in the following schedule:

I. Financial account

The inflows from investments from abroad (credit) against investment to abroad (debit). These investments can be placed into three categories:

- Direct investment: purchase of long-term assets (such as buildings or factories).
- Portfolio investment: purchases of stocks and bonds.
- Reserve assets: purchases of reserves of gold and foreign currencies.

II. Capital account

Miscellaneous income (credit) or expenses (debit) that can't be placed in any other category.

- Capital transfers: miscellaneous (e.g. death duties, debt forgiveness).
- Transactions in non-produced non-financial assets: purchases of intangible assets (trademarks, patents, rights etc.).

III. Current account

Inflows of trade and income (credit) against outflows (debit)

- Balance of trade in goods: exports of goods minus import of goods.
- Balance of trade in services: exports of services minus import of services.
- Income: earnings from investment leaving (—) and entering (+) the country.
- Current transfers: net payments to governments without retribution (e.g. gifts, aid etc.).

The financial account and capital account add up to the current account.

But it is almost impossible to measure exactly how much money is leaving and entering a country. That is why the formula must also include 'errors and omissions'. The final formula will be as follows:

Current account
= financial account + capital account + net errors & omissions

The relationship between the current account and the exchange rate

A current account deficit causes a downward pressure on the exchange rate, because the supply of the currency (imports) exceeds demand (exports). In a freely floating exchange rate system, the value of the currency should fall, boosting the competitiveness of exports.

This is a problem in a fixed exchange rate regime, although in the short run deficits may be covered by gains in the financial and capital accounts. Downward pressure implies that the value of the currency has been set too high. In the long-run, the currency may have to be *devalued*.

A current account surplus causes upward pressure on the exchange rate. In a freely floating regime, the currency appreciates. In a fixed regime, this implies that the value of the currency has been set too low. In the long-run, the currency may have to be *revalued*.

4.3.2 Current account deficits and surpluses

A (persistent) current account deficit may cause:

Downward pressure on the domestic currency exchange rate: more imports than exports lead to relatively more supply than demand for the domestic currency.
Increase in indebtedness: to finance the net outflow of money the country must borrow money, resulting in more indebtedness and higher interest rates. this can result in declining international credit ratings.
More foreign ownership of domestic assets: a current account deficit can be financed with a financial account surplus, meaning the net ownership of foreign countries of domestic country's assets will increase.

The opposite of the above may happen in case of a current account surplus.

4.4 Sustainable development

Economic growth Increase in GDP.

Economic development Improvement in living standards. This includes wealth but also quality of life.

The bottom line in development economics is that *economic growth is not equivalent to economic development*.

For economic development to occur, growth must be *inclusive*. That is, it must benefit everyone partaking in the economy.

To dive further into the distinction between growth and development, let us look at the sources of each one.

4.4.1 Sources of economic growth

Increases the quantity or quality of factors of production. As the quantity of, say land, is difficult to increase, most economies focus on improving the quality. Better planning, the use of fertilizers, or improved technology are all factors that may improve the quantity of land and therefore lead to increases in potential growth.

Increases in the quantity or quality of human capital. Policies that increase population growth or encourage new immigration will increase the pool of human capital in the long term. Improving the quality of education and investing in public health care will boost the quality of human capital.

Increases in the quantity or quality of physical capital. Increases in the number of factories, machines, shops, offices, and motor vehicles. Investments in higher education, research and development and access to foreign expertise improve the quality of physical capital.

Capital widening Extra capital is used with an increased pool of labor. Total production will rise, but productivity is unlikely to change, as the ratio of capital per worker remains unchanged.

Capital deepening Exists when there is an increase in the amount of capital per worker. Usually leads to improvements in labor productivity and total production. Capital deepening often means that the level of technology has improved.

Improving the institutional framework. Improving national institutions such as the banking system, the educational system, the legal system, as well as public infrastructure are understood as a prerequisite for meaningful economic growth. Investments in national institutions include promoting political stability and building good international relationships.

4.4.2 Sources of economic development

- Reducing widespread poverty improves welfare.
- Raising living standards improves welfare.
- Reducing income inequalities this increases overall welfare.
- Increasing employment opportunities which may increase incomes and therefore welfare.

4.4.3 Common characteristics of developing economies

Low standards of living The vast majority of a developing country's population tend to experience low incomes, high inequality, and insufficient education. Other indicators of low living standards include extremely poor housing, high infant mortality rates, high levels of malnutrition, and low standards of health and sanitation.

High levels of poverty

Low levels of productivity Measured by output per capita, low productivity is mainly caused by inadequate education and the lack of access to correct technologies in production.

High rates of population growth, spurring dependency burdens The crude birth rate is calculated as the annual number of live births per 1000 of the population. In developing countries, crude birth rates are on average more than double than the rates in developed countries.

A high crude birth rate raises the *child dependency ratio*, as adults in the working population have to support more and more children. Supporting large families causes pressure upon the working members of the family, and may cause them to carry out precarious work to make ends meet.

However, developed countries tend to have a much higher *old age dependency ratio* than developing countries. This means that developed countries have a high number of population over the age of 64 that need to be supported by the working population.

$$\text{Child dependency ratio} = \frac{\%\text{ of population under 15}}{\%\text{ of population between 15 and 64}}$$

$$\text{Old age dependency ratio} = \frac{\%\text{ of population above 64}}{\%\text{ of population between 15 and 64}}$$

High and increasing levels of unemployment and underemployment. Developing countries are characterized by high levels of unemployment, typically between 10 and 20%. However, the figures omit the part of the population that have given up the search for a job and are no longer featured in the statistics. Additionally, hidden unemployment such as an informal job on a family farm is not included in the unemployment figure.

The issue of underemployment in developing countries is massive. Many individuals who would like to get a full-time job get to work only part-time with precariously low wages and, often, dangerous and unsanitary conditions.

Dependence on the primary and agricultural sector. Many developing countries are heavily dependent on the exports of one or two primary commodities, making their economies extremely vulnerable to price volatilities and natural catastrophes that might ruin the crops. These circumstances, out of control for the country itself, make it highly difficult to plan effectively for the future.

Prevalence of imperfect, informal markets and limited information. The recent decades have revealed a neoliberal trend, where market-oriented growth is promoted to developing economies by international organisations such as the IMF and World Bank. However, this approach is possibly problematic, as developing

countries often lack the necessary factors that facilitate free markets to function efficiently. The lack of adequate infrastructure, a stable financial system, and a developed legal system all act as barriers to efficient allocation of resources.

Dependence and vulnerability in international relations. In almost all cases, developing countries are dominated by developed countries. They are dependent on them for trade, access to technology, aid, and investment. For these reasons, developing countries are vulnerable in global trade and often harmed by the decisions made by developed countries.

4.4.4 The sustainable development goals

The 17 SDGs were created at the UN Conference on Sustainable Development in Rio de Janeiro in 2012. They came into effect in 2016 and will continue until 2030.

Their objective is to act as a set of universal goals that meet the urgent environmental, political, and economic challenges facing the world. Although the goals may seem as overly broad to be achievable, they are paired with more specific targets.

For your IB Economics exam, you should be able to explain current progress towards meeting the SDGs in the context of at least two countries.

The 17 SDGs

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequality
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace and justice, strong institutions
17. Partnerships to achieve the goal

4.5 Measuring development

4.5.1 Single indicators

Single indicators are solitary measures that we use to evaluate development. They are divided into economic indicators, health indicators, education indicators, and institutional indicators. The next sections will provide examples of each four.

Economic indicators

Purchasing power parity The exchange rate that equates the purchasing power of currencies in different countries. The PPP is constructed by comparing the prices of an identical product or a service, such as the Big Mac, in different countries.

Health indicators

In the following table, different health indicators are listed that can be used to distinguish between developed countries and developing countries:

Indicator	What does it measure?	Developed Country	Developing Country
Life expectancy at birth	The average number of years a person may expect to live from the time that they are born	High	Low
Infant mortality rate	A measure of the number of deaths of babies under the age of one year per 1000 births in a given year	Low	High
Expected years of schooling	The number of years a child of school entrance age is expected to spend at school	High	Low
Mean years of schooling	The average number of completed years of education of a population	High	Low

Institutional measures

- Economic and social inequality indicators such as wealth distribution, income inequality, asset ownership and access to credit
- Energy indicators like access to electricity or the share of energy bills on the household budget
- Environmental indicators including municipal waste (kgs per capita), level of greenhouse gas emissions and oil spill data

4.5.2 Composite indicators

It is also possible to distinguish between developed countries and developing countries by using *composite indicators*. Composite indicators combine a number of single indicators with weighting. This provides us with a single figure that measures multiple dimensions of economic development.

The Human Development Index (HDI)

The best example is the Human Development Index (HDI), a number between 0 and 1 comprised of:

- Long and healthy life; measured by life expectancy.
- Education; measured by literacy rate and school enrolment.
- Standard of living; measured by GDP per capita at PPP.

Economically developed countries have a very high HDI ($>$ 0.900). Economically developing countries have a medium (0.500–0.799) or low ($<$ 0.500) HDI.

Because HDI takes into account more than just GDP/GNI per capita, a country's GNP ranking may differ from its HDI ranking.

Limitations of the HDI

- Does not show difference between rural and urban populations
- Does not account for differences between men and women
- Does not indicate differences between different ethnic, religious, or social groups within the country

The Gender Inequality Index (GII)

The GII is an inequality index that measures gender inequality in three aspects of human development to better expose disparities in the achievements between women and men. The GII measures:

- Reproductive health, measured by maternal mortality ratio and adolescent birth rates
- Political representation, measured by proportion of parliamentary seats occupied by females and proportion of females and males aged over 25 that have received secondary education
- Economic status, measured by labor market participation rate of female and male populations 15 years and older

Inequality adjusted Human Development Index (IHDI)

This indicator is an HDI that takes also into account the cost of inequality. Each of the three components of HDI; life expectancy, education, and the ability to meet basic needs, is toned down by its level of inequality. The difference between the HDI and the IHDI value then measures the cost to human development owing to inequality.

Happy Planet Index (HPI)

Measures sustainable wellbeing through a combination of four elements: wellbeing (satisfaction), life expectancy, inequality of outcomes, and ecological footprint.

The HPI like many indices can also be used to measure economic growth in developed economies, and it was was covered in the Macroeconomics §3.1.2 on page 43

The Multidimensional Poverty Index (MPI)

The MPI measures the deprivations experienced by the poor in the population in three key areas that are the same as in the HDI.

- Health, measured by nutrition and child mortality
- Education, measured by years of schooling and school attendance rates
- The ability to meet basic needs, expressed by access to cooking fuel, sanitation, drinking water, and electricity, as well as the level of housing and the ownership of assets.

The Inclusive Development Index (IDI)

The World Economic Forum's project that constructs an annual assessment of the economic performance of 103 countries in eleven different dimensions. Based on the evaluation, countries are divided into 'Advanced economies' and 'Emerging economies' for comparison.

4.6 Contributions and barriers to development

4.6.1 Domestic factors

In the following table, several domestic factors that can contribute to economic development are listed:

Domestic Factor	Examples
Education and health	Better education can lead to a more productive workforce. Better health care improves life expectancy
The use of appropriate technology	Using technology that fits the skills of the people may lead to higher employment levels
Access to credit and micro credit	Small loans can give people the chance to start a business, which increases income and business productivity
The empowerment of women	Emancipation of women can mean higher employment of women or more educated women contributing to development
Income distribution	More equitable income distribution could lead to less conflict, rebellion and wars, which is good for growth and stability
Capital flight	The movement of large amounts of money out of the country as a response to political or economic instability can spur hyperinflation or a sharp depreciation of the domestic currency.
Indebtedness	The repayment of debt by the local government means that the money cannot be spent on other areas of the economy, hindering development.
Landlocked countries	Landlocked countries trade less and have slower growth rates than coastal countries. Transport costs add to the cost of exports.
Tropical climates and endemic diseases	A tropical climate tends to slow down development in two key areas; agriculture and health. The prevalence of disease is considerably higher in the tropical zone, affecting the quality of human resources.

4.6.2 International trade

Contributions to development

In the following table, several international trade factors that can contribute to economic development are listed together with their advantages and disadvantages.

International Trade factor	Explanation	Advantages	Disadvantages
Import substitution	Producing goods yourself instead importing them	+ Protects jobs + Protects local culture + Less dependence on foreign nations	— Doesn't benefit from comparative advantage — Higher prices — Danger of retaliation
Export promotion	Focussing on exporting goods and using the revenues from this export to boost aggregate demand	+ More efficiency + Increased variety / quality + Quick growth	— Strategy for growth, not development — Inequality — Might not be possible in developing countries
Trade liberalisation	More free trade (see international economics!)	+ Lower prices + Increased variety / quality + Increased efficiency	— May cut jobs in some sectors — Increases dependence
Help of the World Trade Organisation	International organisation which regulates international trade	+ Can help set up trade deals + All free trade arguments	— Gives multinationals a chance to exploit cheap labour in developing countries
Bilateral and regional preferential trade	Trade agreements between countries in a certain region (see international economics!)	+ Lower prices + Increased variety / quality + Increased efficiency	— May cut jobs in some sectors — Increases dependence
Diversification	To move from the production and export of primary commodities and to replace these with production and export of manufactured goods	+ Protection from volatile changes in primary product	— Developing countries often don't have the sophisticated workforce for this

Barriers to development

In the following table several international trade factors that can be barriers for economic development are listed:

International Trade Factor	Explanation
Over specialisation on a narrow range of products	This can cause too much dependence on the export of a small set of goods. If the market of these goods collapses, the country may face economic catastrophe.
Price volatility of primary products	Since developing countries are very dependent on the export of primary products, volatility in the price of these products (especially decreases in price) can hurt the economy.
Inability to access international markets	Developing countries often can't access the markets of developed countries due to protectionist measures, which leads to less exports and thus limits growth and development potential.

4.6.3 Foreign direct investment

Another factor that may contribute to or form a barrier to development is Foreign Direct Investment:

Foreign Direct Investment (FDI) Long term investments by multinational corporations (MNCs) in foreign countries by either building new plants or expanding existing ones.

Why would companies want to invest in developing countries?

- Developing countries can often provide factors of production at a very low cost (e.g. low wages). This makes it possible to produce goods at a low price.
- Developing countries often have a favourable fiscal (tax) climate, allowing companies to produce while paying little to no taxes.
- Developing countries often have a regulatory framework that makes it easy to bring made profits to the country of origin of the MNC (profit repatriation).

FDI can contribute to development, but can also form a barrier:

Advantages of FDI

- Provide employment and education.
- Provide greater access to Research & Development, technology and expertise.
- Improves infrastructure of the country.
- Drop in consumer prices and more diversity in goods.
- More efficient allocation of world resources.

Disadvantages of FDI

- MNCs may only use low-wage/unskilled workers of the country.
- MNCs may exploit the favourable tax rules leading to less revenue for the country's government.
- MNCs may exploit the weak legislation on pollution of the country, which may lead to unsustainable and polluting production.

4.6.4 Foreign aid

Another factor that may contribute to or form a barrier to development is Foreign Aid. Aid can be extended by:

- Governments (we then call it "Official Development Assistance" (ODA)).
- Non-governmental organisations (NGO's).

In general we can distinguish between humanitarian aid and development aid:

Humanitarian Aid

- Food aid
- Medical aid
- Emergency relief aid

Development Aid

- Grants, sums of money given to invest in development.
- Concessional (= with favourable conditions) long-term loans.
- Project aid (e.g. support for schools and hospitals)
- Programme aid (e.g. support for sectors such as education and financial sector)

NGO's mainly focus on providing aid on a small scale to achieve development objectives.

Aid may also be "tied aid" meaning that the receiving country must spend the aid according to guidelines of the donor country.

Why do economically more developed countries give aid?

Social factors:
- to relieve the suffering in the developing country
- to improve the standard of living in the developing country

Economic factors:
- Developed countries can benefit financially as a result of interest being paid on loans.
- Companies in developed countries may get better prices for product it buys from the recipient developing country, because the aid has helped the developing country to produce more efficiently.

Political factors:
- The developed country can use the aid to encourage a preferred political system (democracy) in the developing country.
- The developed country can make a political ally out of the recipient country.
- Providing foreign aid may give the donor country prestige within the international community.

4.6.5 Multinational development assistance

Multilateral development assistance is mostly provided by two international organisations: the International Monetary Fund and the World Bank. In the following table the most important characteristics of the two organisations are listed:

International Monetary Fund (IMF)

1. Surveillance
   - Monitoring economic development.
   - Providing policy advice to developing countries.
2. Loans
   - to provide temporary financing.
   - to support policies to fix underlying problems.
   - to reduce poverty.
3. Technical assistance & training
   - to educate government officials.

World Bank

Goals:
- End extreme poverty
- Promote shared prosperity

1. Loans
   - to support a wide array of development projects (e.g. education, infrastructure)
2. Knowledge sharing
   - Policy advice to governments of developing countries.
   - Research and analysis of policies and economic situations in developing countries.
   - Technical assistance to governments of developing countries.

4.6.6 International debt

A final factor, which is mostly a barrier to economic development, is international debt.

Foreign debt Outstanding loans that a country owes to other countries or other countries' institutions.

Countries often borrow internationally in order to finance government expenditure, a negative balance of trade or fees for goods and services.

In some cases developing countries have become so heavily indebted that rescheduling of debt payments and/or conditional assistance from international organisations is required.

Debt is a barrier to development because it costs a lot of interest which could also be spent on development projects (opportunity cost of interest) and which can cause balance of payment problems.

The burden of debt often forces developed countries to cancel a part of the debt owed to them by developing countries in order not to jeopardise repayment of the rest of the debt.

4.7 Evaluation of development policies

4.7.1 Market oriented policies

Market oriented policies Policies that minimise the role of government and maximise free market operation (e.g. liberalised trade and capital flows, deregulation, privatisation).

Strengths

- More efficient allocation of resources
- Economic growth

Weaknesses

- No government intervention may still lead to market failure (see microeconomics).
- No government intervention may lead to income inequalities
- Not intervening may lead to the creations of dual economies within the country (= developing countries where one sector focuses on local needs and another on the global export market, the two economies have different levels of development and technology).

4.7.2 Interventionist policies

Interventionist policies Policies that promote an active role by the government and manipulation of the workings of the market.

Strengths

- A strong government can provide infrastructure.
- A strong government can invest in human capital (e.g. through education).
- A strong government can provide, monitor and maintain a stable macroeconomic economy.
- A strong government can provide a social safety net (e.g. unemployment benefits)

Weaknesses

- A large government may lead to excessive bureaucracy
- A large government may lead to poor and inefficient planning because the government does not face market incentives.
- A large government in developing countries which have a weak judicial system may lead to corruption.

When considering interventionist policies, good governance is crucial. You need a good government in power to make well informed decisions.

Due to strengths and weaknesses of both policies, the general view is that what's best is a combination of market oriented and interventionist policies.

4.7.3 Evaluating real-world progress in meeting the Sustainable Development Goals

Now that we've reached the end of the Global Economy chapter, let's engage in a quick research into the progress in the fulfillment of Sustainable Development Goals (SDG's). Remember that in your exam you should be able to explain the progress of achieving SDGs in the context of two countries!

1. Go to the website: www.sdg-tracker.org
2. Choose one of the 17 SDG's. Click on the icon to further examine it. What are the specific targets defined for this goal? What indicators are used to measure these targets?
3. The website allows you to examine a world map that shows in colors how well countries are performing with regard to specific targets. Find your two countries of interest and make notes below.
4. Evaluate the success of one developed and one developing country in achieving the targets of this goal. Compare and contrast the progress of these two countries. What would change if you were to compare two developed countries? What about two developing ones?
5. Repeat the steps for more SDGs. You may use the table below to mark down your findings.

Developed country: _____

Developing country: _____

SDG	Targets defined for the SDG	Progress in *developed* country in achieving the SDG targets	Progress in *developing* country in achieving the SDG targets
Goal:			
Goal:			
Goal:			
Goal:			

DEFINITIONS

5

5.1 Microeconomics

Ad valorem tax A tax whose amount is based on the value of a transaction.

Cap and trading schemes Government-mandated, market-based approach to controlling pollution by providing economic incentives for achieving reductions in the emissions of pollutants: a central authority (usually a governmental body) allocates or sells a limited number of permits to discharge specific quantities of a specific pollutant per time period. Polluters are required to hold permits in amount equal to their emissions. Polluters that want to increase their emissions must buy permits from others willing to sell them.

Carbon tax A tax on fossil fuels intended to reduce the emission of carbon dioxide.

Ceteris paribus Latin expression meaning 'when all else remains equal'.

Common access resources Resources that everyone has access to so it is very hard to exclude people from using them.

Community surplus Total welfare created in the economy; the sum of consumer and producer surplus.

Complementary good A good that is consumed along with another good.

Consumer surplus The extra satisfaction gained by consumers from paying a price that is lower than the price they were prepared to pay.

Cross price elasticity of demand A measure for the effect a change in price of one product has on the demand for a certain other product.

Demand curve A curve showing how the demand for a commodity or service varies with changes in its price.

Demerit goods Goods of which the consumption has negative consequences on society.

Elastic demand The percent change in demand is more than the percent change in price.

Elastic supply The percent change in supply is larger than the percent change in price.

Equilibrium price The market price where the quantity of goods supplied is equal to the quantity of goods demanded.

Equilibrium quantity The quantity of goods that will be demanded at the point of market equilibrium.

Excess demand A situation in which the quantity of a good or service demanded is higher than the quantity supplied.

Excess supply A situation in which the quantity of a good or service supplied is higher than the quantity demanded.

Excludable characteristic of a good People can be excluded from the use of the good.

Externality A situation in which production or consumption of a good has an effect on a third party for which the latter does not pay or does not get compensated.

Factors of production All the inputs that are used in the production of final goods and services. They include land, labour, capital and enterprise.

Free rider problem A market failure that occurs when people take advantage of being able to use (public) goods without paying for it.

Incentive function of a price A higher price is an incentive for producers to produce more to increase profit.

Income elasticity of demand is used to measure the effect that a change in income of consumers has on the demand for a certain product.

Income elastic The percent change in demand for a good is larger than the percent change in income.

Income inelastic The percent change in demand for a good is smaller than the percent change in income.

Indirect taxes Taxes imposed on certain goods to discourage the consumption of goods that can create externalities (demerit goods).

Indirect taxes Taxes levied on the sale of goods.

Inelastic demand The percent change in demand is less than the percent change in price.

Inelastic supply The percent change in supply is less than the percent change in price.

Inferior good Goods for which demand decreases when income increases.

Law of demand The economic law that states that when price goes up, ceteris paribus, quantity demanded goes down.

Law of supply The economic law that states that higher prices will, ceteris paribus, increase quantity supplied.

Luxury good A good for which demand increases more than proportionally as income rises.

Manufactured commodities Products that have been made (manufactured) from a raw material.

Marginal private benefits Benefits the individual enjoys from the consumption of an extra unit of a good.

Marginal private costs Costs of production that are taken into account in a firm's decision making process.

Marginal social benefit The benefit of consumption of one extra unit to society.

Marginal social cost The cost of production of one extra unit to society.

Market equilibrium A state where the supply in the market is equal to the demand in the market.

Market failure Failure of the market to achieve allocative efficiency resulting in an overallocation or underallocation of resources.

Market price The current price at which goods or services can be bought or sold.

Merit goods Goods of which the consumption has positive consequences on society.

Necessity goods Goods whose consumption is essential to human survival.

Negative externalities The costs that are suffered by a third party (that does not get compensated) as a result of an economic transaction.

Negative externality of consumption A negative externality (see: 'negative externality') caused by the consumption of goods.

Negative externality of production A negative externality (see: 'negative externality') caused by the production of goods.

Non-excludable characteristic of a good People cannot be excluded from the use of the good.

Non-price rationing The use of methods other than price that have the effect of limiting consumption or demand.

Non-rivalrous characteristic of a good More people can use the good at the same time.

Normal good Any good for which demand increases when income increases.

Perfectly elastic demand The percent change in demand is infinite when price changes; when price increases demand will drop to zero, when price decreases demand will increase to infinity.

Perfectly elastic supply The percentage change in supply is infinite when price changes; when price decreases supply will drop to zero, when price increases supply will increase to infinity.

Perfectly inelastic demand Demand does not change when price changes.

Perfectly inelastic supply Supply does not change when price changes.

Positive externalities The benefits that are enjoyed by a third-party (that does not pay for them) as a result of an economic transaction.

Positive externality of consumption A positive externality (see: 'positive externality') caused by the consumption of goods.

Positive externality of production A positive externality (see: 'positive externality') caused by the production of goods.

Price ceiling A price set by the government above which the price may not rise.

Price control A measure by the government that forces producers to sell goods for a fixed price of for a price within a certain range.

Price elasticity of demand A measure of the effect a change in price has on the demand for a certain good.

Price elasticity of supply A measure of the effect a change in price has on the supply for a certain good.

Price floor A price (set by the government) above the equilibrium price below which the price may not fall.

Primary commodities Materials in a raw or unprocessed state.

Producer surplus The excess of actual earnings that a producer makes from a given quantity of output above the amount a producer would be willing to accept for that output. The producer surplus is equal to producer profits.

Public goods Goods that one individual can consume without reducing its availability to another individual, and from which no one can be excluded.

Queuing Form of non-price rationing in the situation of a shortage in which the goods are distributed to the consumers who were willing to wait the longest time in a queue.

Revenue maximisation Producing at a level of output at which the amount of revenue is at its maximum level (MR = 0) for the firm, ignoring increases in costs..

Rivalrous characteristic of a good The good can't be used by more people at the same time.

Shortage A situation in which demand for a good or service exceeds the available supply.

Signalling function of a price A signal to producers that consumers want to buy the good.

Specific tax A tax that is defined as a fixed amount for each unit of a good or service sold.

Subsidy A sum of money given to producers by the government to encourage production and consumption.

Substitute good A good that is consumed instead of another good.

Supply curve A curve showing the relationship between the price of a good or service and the quantity supplied for a given period of time.

Tax burden (1) The amount of tax paid by a person, company, or country in a specified period considered as a proportion of total income in that period. or (2) The total welfare loss of society due to taxation.

Tax incidence The division of a tax burden between buyers and sellers; the tax burden on a specific group in the economy.

Underground parallel market or black market A market where transactions occur without the knowledge of the government, letting participants to avoid government price controls or taxes.

Unit elastic demand The percent change in demand is equal to the percent change in price.

Unit elastic supply The percent change in supply is equal to the percent change in price.

5.2 Macroeconomics

Absolute poverty See 'poverty'. The inability to fulfil the basic economic needs.

Aggregate demand curve The curve representing the relationship between aggregate demand and the price level.

Aggregate demand The total demand for goods and services in an economy at a given time.

Aggregate supply The total amount of goods and services that all industries in the economy will produce at every given price level.

Balanced budget A (government) budget in which revenues are equal to expenditures.

Boom The phase of a business cycle characterised by high economic activity and low unemployment.

Business confidence The degree of optimism or pessimism that business managers feel about the prospects of their companies.

Business cycle The fluctuation of economic activity around the long term growth path; consists of different phases of real GDP growth and decline.

Capital (1) The cash or goods used to generate income either by investing in a business or a different income property, or (2) All man-made tools used in the production process e.g. machines.

Capital expenditures One-time payments of governments (e.g. building a new school).

Central bank A bank which controls a country's money supply and monetary policy.

Circular flow of income model The economic model that illustrates the exchange between households and firms.

Closed economy A self-sufficient economy, meaning no imports are brought in and no exports are sent out, the goal being to provide consumers with everything they need from within the economy's borders.

Consumer confidence The degree of optimism of consumers on the current and expected state of the economy, which determines their spending and saving decisions.

Consumer expenditure The expenses incurred in consumption.

Consumer Price Index (CPI) An index that measures the purchasing power of consumers in a country, by comparing the prices of a basket of goods in different years.

Contractionary fiscal policy A form of fiscal policy that involves increasing taxes and decreasing government expenditures.

Contractionary monetary policy A monetary policy which slows the rate of growth in the money supply in order to control inflation.

Cost-push inflation Inflation which occurs when an increase in the cost of production pushes the average price level up.

Current expenditures The recurring expenditures of governments, such as wages of civil servants, interest on government debt.

Cyclical unemployment Unemployment that results when the overall demand for goods and services in an economy cannot support full employment.

Deflationary gap Shows the difference between the full employment level of output and actual output.

Deflation The persistent fall in the level of prices.

Demand deficient unemployment See 'cyclical unemployment'.

Demand-pull inflation Inflation which occurs when an increase in AD pulls up average price level.

Direct taxes Taxes that are imposed directly on income, wealth and profit.

Disinflation A persistent fall in the rate of inflation.

Disposable income Personal income actually available for spending.

Easy monetary policy A monetary policy that increases the money supply, usually by lowering interest rates.

Economic activity The production and consumption of goods and services.

Economic growth An increase in GDP.

Enterprise Entrepreneurship; the skill set of the entrepreneur to combine capital, land and labour in order to make a profit.

Equality The equal distribution of income.

Equilibrium The state in which demand is equal to supply.

Equity The fair distribution of income.

Expansionary fiscal policy A form of fiscal policy that involves reducing taxes and increasing government expenditures.

Expansionary monetary policy A policy used to expand money supply and boost economic activity.

Exports The goods and services that are made in the domestic country and transmitted (sold) to foreigners (foreign countries).

Factors of production All the inputs that are used in the production of final goods and services. They include land, labour, capital and enterprise.

Fiscal policy The government intervention by either adjusting taxes or adjusting government spending.

Frictional unemployment Unemployment due to people changing jobs when some sectors of the economy grow and other contract.

Full capacity The maximum level of output that a company can sustain to make a product or provide a service.

Full employment A state in which producers are producing at full capacity and maximum employment is reached.

GDP or Gross Domestic Product The total income earned by the factors of production in a country, regardless the assets owner.

Gini index A measure of inequality of a distribution. A value of 0 (0%) for the Gini index denotes complete equality, and a value of 1 (100%) denotes maximal inequality.

GNI or Gross national income The total income earned by a country's factors of production, regardless the assets location.

GNP or Gross national product The total market value of all final goods produced in a country.

Government debt Debt owed by the government.

Government deficit A government's income is less than the money it spends.

Government spending The overall public spending carried out by the government.

Government surplus A government's income is greater than the money it spends.

Green GDP GDP minus the environmental costs, such as pollution; it measures sustainability.

Hidden unemployment Unemployment of potential workers that is not captured in official unemployment statistics.

Human capital The stock of knowledge, skills and abilities that determine the labour productivity of an individual or individuals.

Imports The goods and services that are made in a foreign country and transmitted (sold) to the domestic country.

Income Money received as a compensation for providing factors of production to firms. Income includes wage, rent, interest and profit.

Indirect taxes Taxes that are imposed over consumer spending.

Inflationary gap (1) The situation where the economy is (in equilibrium) at a level of output that is greater than the full employment level of output or above potential output; or (2) A situation in which an increase in aggregate demand (when the economy is at full employment) results in an increase in the average price level with no increase in real GDP.

Inflation A sustained increase in the level of prices.

Inflation rate A measure of how fast prices for goods and services rise over time.

Injections Additions to the value of economic activity due to investment, government spending or exports.

Interest A fee paid for the use of another party's capital or money.

Interest rate The price or cost of borrowed money; the reward for saving; the percentage paid on borrowed money.

Interventionist supply side policies Supply side policies focused on government intervention.

Keynesian economics The analysis of economic activity based on the fundamental premises that economic activity is largely based on aggregate demand and that recessions can be restrained by fiscal stimulus in order to increase aggregate demand.

Labour force Everyone that can, wants to, and is allowed to work.

Labour Human resources; human beings as factors of production.

Land A natural resource employed as a factor of production.

Long-run aggregate supply curve The curve representing the relationship between long-run aggregate supply and the price level.

Lorenz curve A curve used to measure the degree of equity.

Market based supply side policies Supply side policies focused on encouraging free markets and reduce competition.

Monetary policy The macroeconomic policy laid down by the central bank which involves management of money supply and interest rate to influence the economy.

Money demand The amount of money people wish to hold.

Money supply The amount of money that exists in an economy.

Natural capital The world's stocks of natural resources.

Neoclassical economics The analysis of economic activity based on the fundamental premises that all participants on the market have rational preferences, all consumers maximize utility, firms maximize profit and all choices are made taking into account relevant constraints.

Nominal value At current prices.

Open economy An economy where goods and services are traded with other countries.

Output The amount of something produced.

Per capita Per head of the population.

Physical capital The capital in form of physical goods.

Potential output The output that could be produced by an economy if all its resources were fully employed.

Poverty The inability to fulfil the basic economic needs.

Producer Price Index (PPI) An index that measures the price of an average bundle of inputs for producers in different years.

Production capacity The volume of products or services that can be produced by an enterprise using given resources.

Production-possibility frontier A curve which shows the maximum possible output combinations of two goods or services an economy can achieve when all resources are fully employed.

Profit Income received from enterprise; the financial gain occurred when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes.

Progressive tax scheme A tax scheme in which the higher the income, the higher the average tax rate.

Proportional tax scheme A tax scheme in which the same tax rate for all incomes is charged.

Protectionism The restriction of international trade with the goal of preventing losses in industries threatened by imports.

Purchasing power The amount of real goods and services each unit of money will buy.

Real value The nominal value adjusted for inflation.

Recession An overall decline in economic activity during which trade and industrial activity are reduced; is often defined as real GDP falling for two successive quarters.

Recovery The phase of a business cycle when output and employment are moving back from their lowest point towards normal levels.

Regressive tax scheme A tax scheme in which the higher the income, the lower the average tax rate.

Relative poverty A Measure of poverty in relationship to other members of a population.

Rent A payment made for the use of land as a factor of production.

Saving Income not spent; deferred consumption.

Seasonal unemployment Unemployment due to seasonal variations in the demand for labour.

Short-run aggregate supply curve The curve representing the relationship between short-run aggregate supply and the price level.

Structural unemployment Unemployment due to a lack of capital equipment which unemployed workers could use; lack among unemployed workers of the skills necessary to produce.

Subsidy A sum of money given to producers by the government to encourage production and consumption.

Supply-side policy A policy intended to increase the aggregate supply available in an economy.

Sustainability Development that meets the needs of the present generation without compromising the ability of future generations to meet their needs.

Taxes Fees levied by states upon their citizens and firms to finance government expenditure.

Tight monetary policy See 'contractionary monetary policy'.

Transfer payments Payments made by the government as a way to redistribute money through programs such as pensions, student grants etc.

Trough The phase of the business cycle in which the low point of GDP is reached. GDP is stable at this point.

Unemployment A phenomenon that describes all people of working age that are not working and are actively looking for a job.

Unemployment benefits The income support payments to the unemployed.

Unemployment rate The total number of people unemployed as a percentage of the corresponding total labour force.

Wage A payment for work performed by the workforce.

Wealth The total value of a person's net assets.

Withdrawals Reductions to the value of economic activity due to savings, taxes or imports.

5.3 Global

Administrative barriers Bureaucratic procedures and practices that make it more difficult to trade.

Adult literacy rate An education indicator used to measure the proportion of the adult population (15+) that knows how to read.

Appreciation An increase in the value of a currency caused by market forces.

Balance of payments A record of all money entering the country and leaving the country.

Bilateral and regional preferential trade Trade agreements between countries in a certain region.

Bilateral preferential trade agreements Preferential trade agreements formed between two countries.

Capital account A financial statement which shows miscellaneous income or expenses that cannot be placed in any other category. Part of the balance of payments.

Common market A customs union with common policies on product regulation and free movement of goods, services, capital and labour between member states.

Complete economic integration The form of economic integration where countries have no control of economic policy. It is the full monetary union with the complete harmonisation of fiscal policy.

Composite indicators Indicators which contain more than one measure and so are considered to be better indicators of economic development.

Concessional long-term loans Loans that are extended on terms substantially more generous than market loans. The concessionality is achieved either through interest rates below those available on the market or by grace periods, or a combination of these.

Current account A financial statement which shows inflows of trade and income against outflows. Part of the balance of payments.

Customs union A degree of economic integration in which countries are able to trade freely among themselves and also agree to adopt common external barriers against any country outside the union.

Debt cancellation The process of a creditor cancelling a debt previously owed by a debtor.

Depreciation A decrease in the value of a currency caused by market forces.

Devaluation A decrease in value of a currency caused by government intervention.

Development aid Aid given to support the economic, social and political development of developing countries.

Diversification Moving from the production and export of primary commodities to the production and export of manufactured goods.

Economic development An increase in welfare, which includes wealth but also quality of life.

Economic growth An increase in GDP.

Economic indicators Indicators that distinguish between countries using economic data; used to distinguish between developed countries and developing countries and to predict future economic activity.

Economic integration The unification of economic policies between different states through the partial or full abolition of tariff and non-tariff restrictions on trade taking place among them prior to their integration.

Economies of scale The cost advantages that enterprises obtain due to size, output, or scale of operation, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output.

Education indicators Indicators used to distinguish between countries on the basis of education.

Exchange rate The value of one currency expressed in terms of another currency.

Export promotion Focussing on exporting goods and using the revenues from this export to boost aggregate demand.

Financial account A financial statement which shows the inflows from investments from abroad against investment to abroad. Part of the balance of payments.

Fixed exchange rate regime An exchange rate regime in which the value of the currency is pegged to the value of another currency.

Foreign Direct Investment The long term investments by multinational corporations (MNCs) in foreign countries by either building new plants or expanding existing ones.

Foreign aid Resources given from one country to another out of charity.

Foreign debt Outstanding loans that a country owes to other countries or other countries' institutions.

Free trade area A degree of economic integration in which countries are able to trade freely among themselves, but are able to trade with countries outside the free trade area in anyway they like.

Freely floating exchange rate regime An exchange rate regime in which the value of an exchange rate is determined by the demand for and supply of that currency.

GDP per Capita at Purchasing Power Parity GDP per capita corrected for differences in prices and exchange rates between countries; compares purchasing power (how much can you buy from your money) between countries.

GDP per Capita Total income earned by the factors of production in a country regardless the assets owner per head of the population.

GNI per Capita Total income earned by a country's factors of production, regardless the assets location per head of the population.

Good governance A term used to describe how public institutions conduct public affairs and manage public resources. This should be done in a responsible, hence 'good', way.

Health indicators Indicators used to distinguish between countries on the basis of health or healthcare.

Human Development Index (HDI) A composite indicator that measure country's overall achievement in its social and economic dimensions, such as long and healthy life, education and standard of living.

Human capital The stock of knowledge, skills and abilities that determine the labour productivity of an individual.

Humanitarian aid Aid provided for humanitarian purposes; it involves food aid, medical aid and emergency relief aid.

Import substitution refers to producing goods yourself instead importing them.

Infant industry A new industry in its early stages of development, often in need of protection against international competitors.

Infant mortality rate A health indicator used to measure the number of deaths of babies under the age of one year per 1000 births in a given year.

International Monetary Fund (IMF) An international organization created for the purpose of standardizing global financial relations and exchange rates.

Interventionist policies Policies that promote an active role by the government and manipulation of the workings of the market.

Life expectancy at birth A health indicator used to measure the average number of years a person may expect to live from the time that he is born.

Managed exchange rate regime An exchange rate regime in which the exchange rate is freely floating but there is periodic government intervention to influence the value of the exchange rate.

Market oriented policies Policies that minimize the role of government and maximize free market operation.

Monetary union A common market with common currency and common central bank.

Multilateral development assistance Assistance provided by international organizations, mostly the International Monetary Fund and the World Bank.

Multilateral preferential trade agreements Preferential trade agreements formed between three or more countries.

Net enrolment in primary education An education indicator used to measure the ratio of children of primary school age enrolled in primary education to the total number of children who are of primary school age in the country.

Non-governmental organisations Non-profit organizations that are independent from states and international governmental organizations.

Official Development Assistance (ODA) The foreign aid extended by the government.

Over specialization A narrow range of products can cause too much dependence on the export of a small set of goods. If the market of these goods collapses, the country may face economic catastrophe.

Physical capital The capital in form of physical goods.

Poverty trap A situation in which poor communities are unable to invest in physical, human and natural capital due to low or no savings, thus poverty is being transmitted from generation to generation.

Preferential trade agreements Agreements between two or more countries that give preferential access to the markets of the participating countries by reducing or eliminating tariffs or by other agreements related to trade.

Price volatility The (relative) rate at which the prices move up and down. If prices are volatile, they change rapidly over time.

Primary products Goods that are made of cultivating raw materials without a manufacturing process.

Profit repatriation Bringing profit earned in a foreign country into the borders of one's own country.

Programme aid Aid provided to accomplish tasks in a particular area or sector (e.g. support for sectors such as education and financial sector).

Project aid Aid provided to accomplish a specific purpose (e.g. support for schools and hospitals).

Quota A governmental restriction on the quantities of goods that may be imported into the country within a specific period of time.

Resource endowment The amount of resources that a country possesses and can exploit.

Revaluation A rise in value of a currency caused by government intervention.

Subsidy A sum of money given to producers by the government to encourage production and consumption.

Tariff A tax charged on imported goods.

The Millennium goals Global goals for the development of developing nations, established by the United Nations.

Tied aid A type of aid that the receiving country must spend according to guidelines of the donor country.

Trade liberalization Removing barriers to trade between different countries and encouraging free trade.

Trade protectionism The measures used by countries to limit competition from foreign industries.

World Bank An international organization dedicated to providing financing, advice and research to developing nations to aid their economic advancement.

World Trade Organisation (WTO) An international organisation that sets the rules for global trading and resolves disputes between its member countries.

ABBREVIATIONS

6

AD	**Aggregate demand.** Total demand for goods and services in an economy at a given time.
AS	**Aggregate supply.** The total amount of goods and services that all industries in the economy will produces at every given price level.
CPI	**Consumer Price Index.** Economists compile a basket of goods that is representative for the economy, they then compare the cost of this basket over time. The increase in price of the basket is the inflation rate.
CS	**Consumer surplus.** The extra satisfaction gained by consumers from paying a price that is lower than the price they were prepared to pay total welfare gained from being able to consume.
C	**Consumer expenditures.** The expenses incurred in consumption.
FDI	**Foreign Direct Investment.** Long term investments by multinational corporations (MNCs) in foreign countries by either building new plants or expanding existing ones.
GDP	**Gross Domestic Product.** Total income earned by the factors of production in a country, regardless the assets owner.
GNP/GNI	**Gross National Product / Gross National Income.** The total income earned by a country's factors of production, regardless the assets location.
G	**Government spending.** The overall public spending carried out by the government.
HDI	**Human Development Index.** A composite indicator that measure country's overall achievement in its social and economic dimensions, such as long and healthy life, education and standard of living.
IMF	**International Monetary Fund.** An international organization created for the purpose of standardizing global financial relations and exchange rates.
I	**Investment.**
J	**Injections.** Additions to the value of economic activity due to investment, government spending or exports.
LRAS	**Long run aggregate supply.**
MNCs	**Multinational corporations.**

MPB	**Marginal Private Benefits.** Benefits the individual enjoys from the consumption of an extra unit of a good.
MPC	**Marginal Private Cost.** Costs of production that are taken into account in a firm's decision making process.
MSB	**Marginal Social Benefit.** Benefit of consumption of one extra unit to society.
MSC	**Marginal Social Cost.** Cost of production to society.
MS	**Money supply curve.**
M	**Imports.** The goods and services that are made in a foreign country and transmitted (sold) to the domestic country.
NGO's	**Non-governmental organisations.** Non-profit organizations that are independent from states and international governmental organizations.
ODA	**Official Development Assistance.** The foreign aid extended by the government.
PED	**Price elasticity of demand.** It is used to measure the effect a change in price has on the demand for a certain good.
PES	**Price elasticity of supply.** It is used to measure the effect a change in price has on the supply for a certain good.
PPF	**Production Possibilities Frontier.** A curve that shows the theoretical maximal combination of two goods that an economy can produce if full use is made of all factors of production.
PPI	**Producer Price Index.** Economists compile a basket of factors of production representative for the economy, they then compare the cost of this basket over time. The increase in the price of the basket is the inflation rate.
PS	**Producer surplus.** The excess of actual earnings that a producer makes from a given quantity of output above the amount a producer would be willing to accept for that output — total welfare gained from being able to produce; equal to producer profits.
SRAS	**Short run aggregate supply.**
S	**Savings.** Income not spent; deferred consumption.
T	**Taxes.** Fees levied by states upon their citizens and firms to finance government expenditure.
UN	**The United Nations.**

WTO	**The World Trade Organisation.** Is an international organisation that sets the rules for global trading and resolves disputes between its member countries.
W	**Withdrawals.** Reductions to the value of economic activity due to savings, taxes or imports.
XED	**Cross price elasticity of demand.** It is used to measure the effect a change in price of one product has on the demand for a certain other good.
X	**Exports.** The goods and services that are made in the domestic country and transmitted (sold) to foreigners (foreign countries).
YED	**Income elasticity of demand.** It is used to measure the effect that a change in income of consumers has on the demand for a certain product.

ESSAY GUIDE

7

Exam:	Time:	Marks:	% of total:
Paper 1	75 minutes	25 marks	30%

Choose and answer 1 question from a choice of three (Micro, Macro, and Global Economy). Answer both part a and b.

7.1 Time management

Managing your time well guarantees that you can address each question at the exam, to at least score the easier marks from each question. So when time allotted to the question runs out, finish the sentence and leave some space to finish the question later. Then, if you have time left at the end of the exam you can go back to complete your answers.

Keeping to a strict schedule ensures that you will not waste time by getting stuck on a question, and securing enough time to answer each question. This will help you stay relaxed throughout the exam, especially if you also remember that you do not have to write perfect answers to get a good grade: rather get as many marks for each question within the time you have. Plus, the answers to the question you are stuck on will often come to you while working on a different question.

The next section lists how much time you should spend on each part of the exam. Do all your practice from now on by sticking to these times, because doing so will familiarize you with how much and at what pace you need to be able to write in paper 1.

Choose 1 question out of a choice of 3. You can choose to answer a question about microeconomics, macroeconomics, or about global economy. Time: 75 min.

Use 5 minutes to plan for each part. (10 minutes for planning in total)

part a) 10 marks, max. 26min

part b) 15 marks, max. 39min

Part a) in paper 1 is really to get you started, part b) is worth more marks and requires more detail!

7.2 Essay writing style

7.2.1 DEED

Define First, define any key terms that arise in the question itself and in your answer. *Any* key terms that are introduced by the question or that you introduce should be defined! Remembering to do this is a really easy way to gain points. Also once you have defined terms, and there is an abbreviated version, place this behind- e.g. Aggregate Demand (AD). This way now in your text you can save time by just writing "AD".

Explain Then after all is defined, explain your answer to the question. Make sure to properly elaborate on the economic theory that you are using to answer the question.

Diagram Provide a diagram. The diagram is there to help you explain the concept: *so use it!*
You should draw a diagram next to where the theory is explained as you write it, or you can leave space for it and come back to it at the end.

7.2.2 DEED & CLASPP

The structure of part b) differs from part a) in two significant aspects: students must **evaluate** their arguments throughout the paper, as well as provide a relevant and true real-world **example** to support their explanation of the theory. The two E's of evaluating and explaining make up the extended version of DED – the DEEDE (Define, Explain, Example, Diagram, Evaluate).

To help you with acing the evaluation part, let us go over another helpful acronym; the CLASPP.

Conclude Make a weighted concluding statement e.g. So the best policy is a combination of Monetary policy and fiscal policy, rather than both in isolation etc…) Justify/reason why this is the stance you have taken.

Limitations to the theory Provide insight into the drawbacks of your conclusion or an alternate solution (i.e. this solution works, but it doesn't work all the time, this other solution would also be a good option, and which we choose depends on more information). This will show the examiner that you have a thorough understanding of the topic.

Assumptions of the theory Some economic theories rely on certain assumptions. Mention these assumptions and reflect on their significance for the conclusions that you make from them (e.g. we assume rational human behaviour, however humans may not always act economically rational)

Stakeholders Mention the stakeholders involved in the problem and describe the effect on each of them.

Priorities Explain what is most important: which effect is most important, which stakeholder is most important, etc.

Pros and Cons Evaluate the advantages and disadvantages of the theory.

Please note that evaluation should **not** only occur at the end of your paper. Instead, you should evaluate the case that you are building throughout the essay. Evaluation is required in each markband. Use the CLASPP!

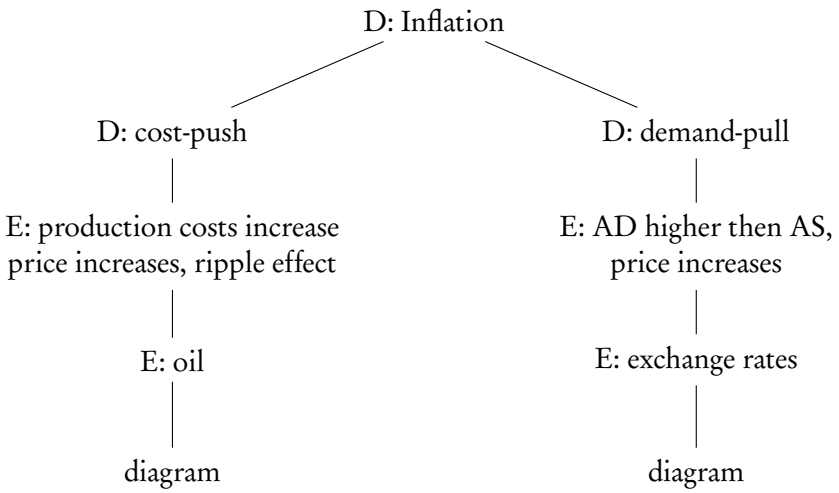
For paper 1 part b, the IBO requires students to use a "real" real-life example. Your essay response should use the real life example throughout the paper as the context and building block of the essay.

For instance, for a micro paper asking about solving a negative externality of consumption, you could use the example of the European Union banning menthol and flavored cigarettes as of 2020 in order to discourage the consumption of cigarettes. For a macro question about expansionary monetary policy, you could evaluate the response of the European Central Bank and the US Federal Reserve to the economic downturn caused by the covid-19 pandemic.

When going over the syllabus, make sure that you have a real life example for all the topics covered in micro, macro, and global economy! It might be helpful to make a table of all topics and the corresponding examples.

7.3 Worked example

a) Using two AD/AS diagrams, explain cost-push and demand-pull inflation.

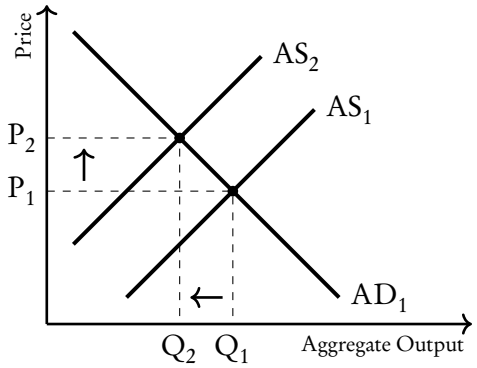


Define: Inflation can be defined as a persistent increase in the average level of prices in an economy.

Define: There are two main types of inflation, namely cost-push inflation and demand-pull inflation. Cost-push inflation is a situation in an economy where there is a persistent rise in prices due to production costs increasing.

Explain: When production costs of one firm increases, they may consequently have to increase prices. If they increase prices, this means that a firm who depends on this now has higher costs. The increase in production costs thus ripples through the economy and results in persistent increases in prices across many industries.

Diagram: In the case of cost-push inflation, the rise in the production costs will lead to a leftwards shift of the Aggregate Supply Curve (AS_2 to AS_1), effectively raising the price level (from P_2 to P_1). This will also reduce output (Q_2 to Q_1). This can be seen in the diagram below.



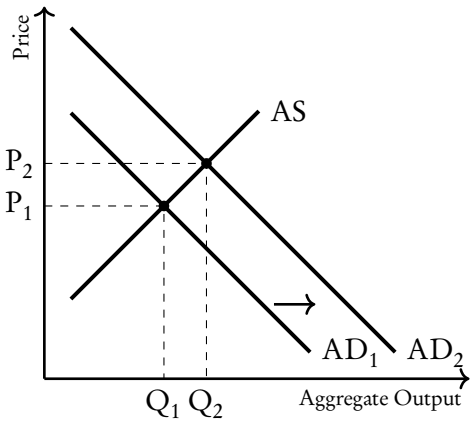
All axes and curves are labelled and all points identified. Now you can just refer to the points i.e. price decreases (P_2 to P_1). This will be very helpful in your explanations and examiners love this!

Define: Demand-pull inflation is inflation caused by consistently higher levels of aggregate demand over aggregate supply in the economy.

Define: Aggregate demand (AD) referring to the total demand for final goods and services in an economy at a given time.

Explain: Here this means that as AD increases, because supply remains fixed, the price has to increase to keep up.

Diagram: In the case of demand-pull inflation, the increase in AD will lead to a rightwards shift of the AD curve (AD_2 to AD_1), effectively raising the price level (P_2 to P_1). This rise in general price level is in some ways counteracted by the increase in output (Q_2 to Q_1). This is illustrated in the diagram below:



b) "The rate of inflation can be most effectively reduced through the use of monetary policy." to what extent do you agree with this statement?

Note: Typically, it would be necessary to define *'the rate of inflation'*, but as it was already defined in part (a) it is sufficient to simply refer to it.)

Define: Monetary policy can be defined as policies that the central bank makes to manipulate the rate of interest, exchange rates and the quantity of money. Monetary policy is an example of a demand-side policy, which is a policy that attempts to alter the level of aggregate demand (AD) in an economy.

Define: Monetary policy is a very important tool to manage the economy. There are two general strategies- contractionary and expansionary monetary policy. Expansionary monetary policy aims to increase the total supply of money in the economy (or more rapidly than usual). On the other hand, contractionary policy expands the money supply more slowly than usual or even shrinks it.

Example: The records of the Dutch central bureau of statistics indicate that the price of goods and services rose by 11.6 percent on average during the year 2022. The rate of inflation measured in the Netherlands ties in with a Europe-wide trend of high inflation in 2022, caused by a mix of factors; the war in Ukraine, the apparent end of the covid-19 pandemic, and bottlenecks in global supply chains after the pandemic.

Explain (using example as the context): to tackle post-pandemic high inflation, the European Central Bank (ECB) has implemented contractionary monetary policy measures. The bank does this by increasing the interest rate. The commercial banks in the Eurozone must follow suit, providing consumers with higher interest rates. In theory, if interest rates increase, there is less demand for investment and more incentive for people to increase their savings. Contractionary monetary policy thus reduces AD, shifting the AD curve to the left (AD1 to AD2). We experience the desired result of a lower general level of prices (P1 to P2). A fall in the general price level is a fall in the rate of inflation, as defined above in part (a).

Evaluate: Monetary policy may reduce inflation, but higher interest rates discourage investment by firms. Long term productivity/competitiveness domestically and internationally may be harmed in the aftermath. Moreover, the fact that monetary policy for all Eurozone countries is handled by a single central bank often leads to a situation where the policy is more optimal for some member countries, while hurting the economies of others.

Define: However, monetary policy is not the only tool that can be used to manage an economy. Fiscal policies are a type of demand-side policy (also targets altering AD in the economy as discussed earlier) that entails the government altering government expenditure and/or taxes to influence the AD curve. The government can use expansionary fiscal policy (to "expand" or increase AD) or contractionary (to "contract" or reduce AD).

Example: In response to high inflationary pressures and a looming recession, the Dutch government has also imposed fiscal measures in 2022. Through contractionary fiscal policy, the Dutch government has increased taxes and cut government spending. Increased taxes leave households with less money to spend on goods and services. Some workers employed in the public sector may be laid off due to

spending cuts. Unemployment reduces the ability to spend significantly.

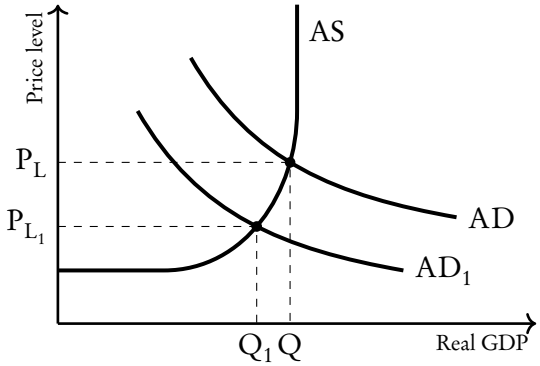


Diagram: In theory, less demand for goods and services shifts AD to the left (AD1 to AD2). This, as a result, reduces the general price level (P1 to P2), reducing inflation.

Evaluate: As shown by the diagram, contractionary fiscal policy can combat demand-pull inflation but as the primary effect is on AD, the policy has little power over cost-push inflation. Moreover, contractionary fiscal policy may reduce inflation, but higher taxes and less government expenditure are not politically desirable; they may make the government very unpopular.

Evaluate: (Stakeholders): to choose only short term solutions to inflation (monetary policy and fiscal policy) lowers the level of inflation immediately, but comes at the price of lower output. Lower output means higher levels of unemployment and potentially reductions in living standards.

Define: Monetary policy implemented by the ECB and fiscal relief offered by the Dutch government are both demand-side policies. When inflation arises from the supply-side, as is the case in global, post-pandemic supply chain bottlenecks, supply-side policies can come in handy.

Example: In 2022, the Dutch government promised to channel close to 3.5 billion euros into public infrastructure and railway projects. In the long-run, improved railway systems will improve the mobility of labor and increase the reachability of new housing developments. In the long-run, these factors should improve the quality of labor in the Netherlands.

Evaluation: However, in the short-run, increased government spending may act against contractionary fiscal policy goals. Pouring more money into the economy may spur inflation instead of taming it.

Diagram: The Dutch investment in public infrastructure influences the long-run aggregate supply of the economy. If labor becomes more effective due to increased mobility, each person can now produce more output. This is what then causes the increase in LRAS, and therefore shift the curve to the right (LRAS1 to LRAS2). Shifting the LRAS curve means that the AD curve now intersects the LRAS curve at a much lower general level of prices (P1 to P2), therefore again solving the problem of inflation.

Evaluate: (Assumptions of theory) When talking about the LRAS curve, we are working with the neoclassical framework. Economists in the Keynesian school of thought argue that the long-run is too far ahead to play a relevant role in economic policy considerations. Arguably, the time lags in the implementation of supply-side policies make them less effective in reducing inflation in the short- and medium-term.

Conclusion: In this essay, the Netherlands was used as the primary example. The conclusion of the most effective tool to combat inflation is therefore dependent on the country in question and the current state of the economy. Fiscal policy will reduce inflation, but higher taxes and less government expenditure may not be politically desirable. Monetary policy can also reduce inflation but it harms investments through a higher interest rate. Moreover, high interest rates have detrimental effects on long-term productivity and/or competitiveness, both domestically and internationally. Last, the implementation of a supply-side policy such as an investment in public infrastructure can reduce inflation, but only in the long-run. In the long run, this is the only way to reduce inflation. However, to bring about immediate alleviation, fiscal and monetary policy prove more pertinent. In conclusion, a mix of policies seems most appropriate.

Limitations to theory: Finding the right balance between these three policies so that they all coordinate is often easier said than done.

Priorities, Pros and Cons: The coordination of the three policies requires massive efforts, especially in countries with a weak government and limited institutional power. Moreover, in the case of the Netherlands, monetary policy is implemented by the ECB while fiscal and supply side policies are set by the national government. The needs of other Eurozone countries influence monetary policy decisions, making coordination of the three more difficult on a national level.

Ultimately, a small spread of problems is preferred over the other extreme. A small group of dissatisfied citizens due to an increase in taxes or a slight decrease in current output when implementing a long-term infrastructure project can be seen as healthy side-effects of business cycle fluctuations. On the other hand, a significant drop in domestic and foreign investment or a precarious period of stagflation are neither politically nor economically desirable for an economically developed country such as the Netherlands.