Adrian's Study Kit

Year 11 Economics

trading pokémon on the black market!

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Production, distribution and exchange questions

Introduction to Economics

Topic 1 | Chapter 1

Welcome to the fun world of economics! In this course, you will learn:

- All the economic mechanisms of Pokémon trading
- Why pirating anime is bad for the economy
- "Maths is actually used in the real world?"

The economic problem

Unlimited wants and needs
Limited resources
Hence the problem of **scarcity**

The economic problem forms the backbone of economics. We all want every single Pokémon, but we can't! Even though everyone wishes they could have all the Pokémon in the world, there is a limited quantity of Pokémon. **The problem of scarcity arises since not all wants can be satisfied at once.**

Related:

- The problem of scarcity in production
- The opportunity cost and production possibility curve
- Opportunity cost: individuals and societies

Wants and needs

Wants and needs are the things we desire. They range from food and shelter, to books and video games. We can classify wants and needs into different categories.

Category	Example
Basic wants Things we need to survive, aka primary needs.	Water
	Shelter
	Food
	Clothing
Recurring wants Things that must be continually satisfied at regular intervals. They can either be **fixed** or **variable**. • **Fixed** expenses: same price every time (e.g internet, telephone) • **Variable** expenses: fluctuates in price (e.g	Electricity
	Petrol
	Food
	Internet
	Telephone

petrol, food)	
Substitute wants Wants that can be substituted with other wants.	Second-hand car *vs* new car
	Refurbished PS5 *vs* new PS5
Luxury wants Wants that are quite luxurious and expensive.	Ford Mustang
	Rolex
Complementary wants Wants that we need as a result of needing other wants. For example, if I buy a car, I will need petrol in order to use it.	Phone charger
	Printer ink cartridge
	Pencil case
	Petrol
Individual wants Wants based on an individual person. It is affected by income, their priorities, and what they can afford. • What type of food/clothing/shelter? • What can I afford?	Food
	Clothing
	Shelter
	Phone plan
	Computer
Collective wants Wants demanded by the community. They are usually controlled by governments.	Healthcare
	Police
	Transport
	Defence
	Libraries

Note: In Chapter 2, we identify the four basic questions raised by the economic problem, in relation to production, distribution and exchange of goods and services.

Consumer goods

Consumer goods give **immediate satisfaction** for **consumer wants**. A consumer good can be classified into one of two categories:

Durable Goods that can be used over and over again.	• Computers • Fridges • Stoves • Cameras
Single-use Once used, these goods cease to exist.	• Plastic bags • Cigarettes • Petrol

Definition: In Economics, satisfaction can also be referred to as ***utility***.

Capital goods

Capital goods are things such as machines, equipment, and tractors that are used to produce more capital and consumer goods. They are subject to **depreciation**.

Definition: Depreciation is the decline in usefulness and value of a capital asset over time.

Therefore, they will have to be replaced in the future. For example, a printer may need to be replaced by a newer and more efficient printer in three years.

Intermediate goods

Intermediate goods are goods that are **continually introduced to be used in the production of other goods**, but are not goods that will produce for an extended period of time. For example, **seeds** are used to grow bread, **sugar** to make syrup, and **steel** to make bridges. Since seeds, sugar and steel need to be continually resupplied, they would be considered an **intermediate** good.

Note: You can think of them as partly-finished, non-durable capital assets. Just don't use this definition in an assessment.

The factors of production

The factors of production (resources) are used in the production process to **produce goods and services** to satisfy the wants and needs of consumers. As a result, they also have **factor incomes** (returns) which is the return from the usage of resources.

Resources	Returns	Description
Land	Rent	Land includes all natural resources such as forests, minerals, rivers, and agricultural land.
Labour	Income	Human effort used in the production of goods.
Capital	Interest (subject to depreciation)	Goods that are used to produce more goods and services, such as machinery, plants, tools and equipment.
Enterprise	Enterprise	Enterprise or entrepreneurship refers to the risk-taking involved in business, in order to produce goods and services for others. Entrepreneurs combine the other three factors of production.

Definition: The factors of production are also known as ***resources***, while factor incomes are also known as ***factor income returns.***

Tip: The labour force refers to the number of people who are either employed, or those who are actively seeking work. To calculate the percentage of population in the labour force:

$$\frac{employed + unemployed\ but\ actively\ seeking\ work}{total\ population} \times 100$$

The problem of scarcity in production

Earlier, we highlighted the issue of scarcity in relation to wants and needs. This idea can be extended to the production of goods and services. Choices needed to be made over how resources should be used in production. There is only a finite amount of land, labour and capital goods. Therefore, firms make choices about how to best use their limited resources, by asking questions about **production**, **resource allocation** and **distribution**:

Question	Dependent on...	Description

What to produce?	Consumer/capital goods mix	• Firms must determine
		  ○ market demands
		  ○ its own preferences and expertise

How much to produce?	Consumer demand and resource availability	• Firms must satisfy market demand to **maximise revenue** and **minimise costs**
How to produce?	Resource availability	• A question of resources and available technology in the production process • Firms aim to produce output at minimum cost
To whom to distribute?	Factor incomes and provision of welfare	• A management structure is needed to lead the production process • Resources must be compensated for (e.g **profit** for the entrepreneur's risk taking, **income** for human labourers)

Note: See Appendix A for a more detailed table on the production, distribution and allocation questions.

Related: Chapter 2 goes into more detail about how firms respond to the problem of scarcity in production.

The opportunity cost and production possibility curves

Opportunity cost refers to the alternative foregone by present consumption or production decisions

Opportunity cost is what you give up (the alternative foregone) in choosing to consume something else. It can be represented in terms of material benefit or money. The process of choosing between alternatives is known as **economising**.

Example: For example, I might have $20 on me. I could either spend that on buying the latest Demon Slayer merch, or buying the latest Haikyuu!! merch. By choosing Demon Slayer merchandise, the **opportunity cost** would be the Haikyuu!! merchandise (the **alternative foregone**).

Note: The Riley textbook defines opportunity cost as *"the cost of the alternative uses of resources"*. Personally, I disagree with this definition, as opportunity cost **actually** refers to the benefit you sacrifice in terms of the opportunity foregone. Of course it can be expressed in money, but we don't say that I gave up $500 when I choose to buy a Nintendo Switch instead of a PS5.

Opportunity cost: individuals and societies

Individuals and societies make choices about which wants and needs should be satisfied in the present.

Individuals

It's 5pm and I just left my video game programming job at Game Freak. For doing a good job with Pokémon Brilliant Diamond & Shining Pearl I get a $100 bonus. I can spend different amounts of this money on various different things. For example:

- $80 on video games
- $20 on anime merchandise

Or, I could choose to divide it equally:

- $50 on video games
- $50 on anime merchandise

And really, I can divide it in any way. As mentioned before, lowly **consumers** like us cannot get everything in the world, so we need to make choices (economise) between different alternatives. **The rational economic person looks to optimise consumption and maximise their satisfaction.**

Definition: Economising is the process of making choices between competing alternatives, in order to optimise consumption subject to a budget or income constraint.

Societies

It's not just individuals who have to make decisions between competing alternatives. Societies also face similar choices, but there are certain projections we can make by analysing how societies choose to allocate resources and income.

More consumer goods & less capital goods in the present

Societies that produce **more consumer goods & less capital goods in the present** will immediately enjoy higher living standards in the present, but lower living standards in the future.

- Increased production of consumer goods (e.g food, houses, cars, video game consoles)
- Decreased investment on capital goods (e.g machines, factories, offices, farms)
- This will limit future growth of consumer goods and services, **∴** limiting future living standards

∴ a focus on current living standards => focus on consumer good production

More capital goods & less consumer goods in the present

Likewise, societies that produce **more consumer goods & less capital goods in the present** will experience lower living standards in the present, but higher living standards in the future.

- Increased investment on capital goods (e.g machines, factories, offices, farms)
- Decreased production of consumer goods (e.g food, houses, cars, video game consoles)

- This will promote future growth of consumer goods and services, ∴ higher future living standards

∴ a focus on <u>future</u> living standards => focus on <u>capital</u> good production

Remember: Capital goods **depreciate in usefulness and value.** A society that does not replace capital goods fast enough to continue economic growth will encounter future issues due to a lack of production capacity.

Production possibility curve

A production possibility curve (PPC) is a type of simplistic model that is used to illustrate opportunity cost. Four simplifying assumptions are used in this model:

1. **Only two goods** can be produced with **finite resources**.
2. **All resources are fully employed.** Any point on the curve represents full employment of the economy's available resources.
3. Level of technology in the economy is constant/fixed.
4. Resources are **finite and mobile**: they can be switched from one type of production to another.

Let's start with a production possibility schedule, which outlines points on the production possibility curve.

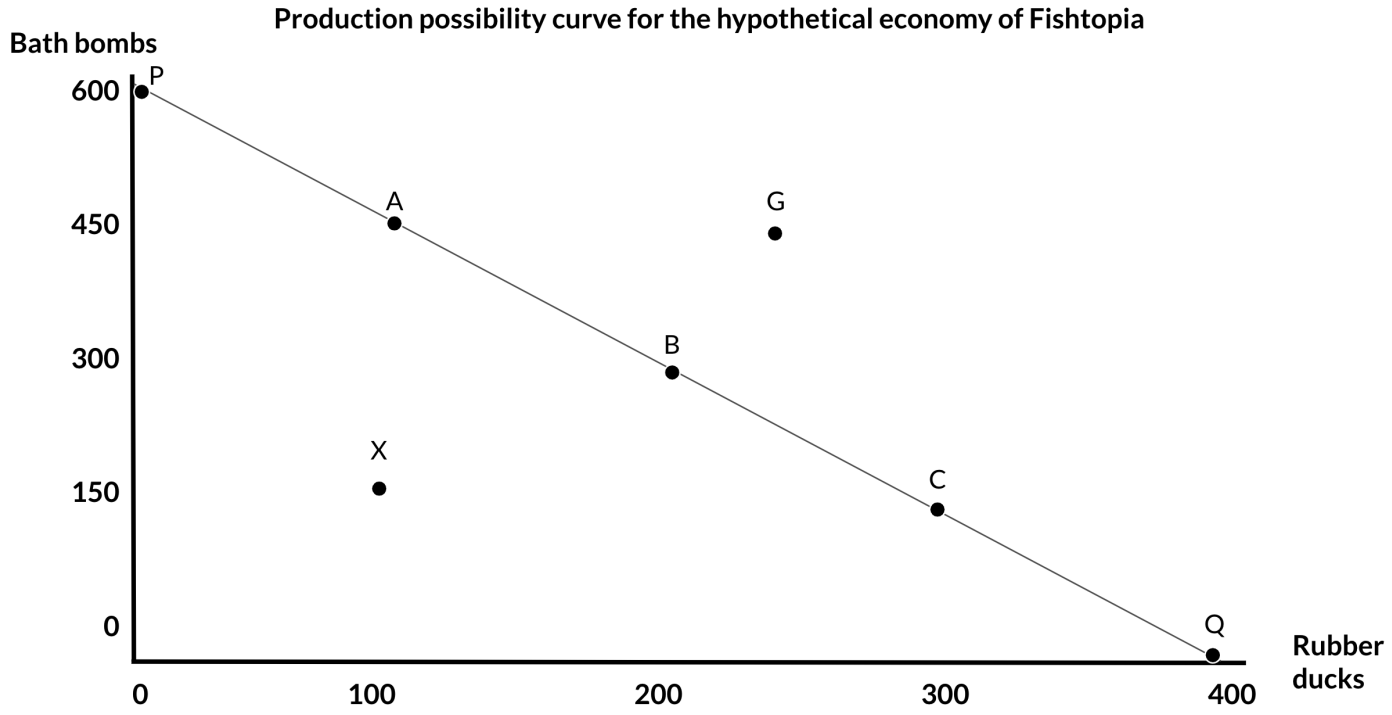
Production possibility schedule for Fishtopia

Rubber Duck Production	**0**	**100**	**200**	**300**	**400**
Bath Bomb Production	600	450	300	150	0
Point on the curve	P	A	B	C	Q

For every 100 units of rubber ducks, 150 units of bath bombs are sacrificed. In other words, 150 units of bath bombs is the **opportunity cost** of 100 units of rubber ducks. Therefore, we can calculate the **marginal rate of substitution (MRS):**

$$opportunity\ cost\ = 100\ rubber\ ducks/150\ bath\ bombs$$
$$\therefore MRS\ = 1\ rubber\ duck/1.5\ bath\ bombs$$

So, let's now illustrate this using a production possibility curve.



Note: In this example, the MRS is **constant**, hence the gradient of the PPC is **linear**, as all resources are fully substitutable into each product. Later, we'll see what happens when there is a non-linear PPC and thus, a non-constant MRS.

Taking a look at the points on the linear PPC:

- At point **P**, all of Fishtopia's resources are dedicated to making bath bombs.
- At point **A**, more of Fishtopia's resources are dedicated into making bath bombs than rubber ducks.
- At point **B**, it is about even, with 300 bath bombs and 200 rubber ducks being produced.
- At point **C**, more of Fishtopia's resources are dedicated into making rubber ducks than bath bombs.
- At point **Q**, all of Fishtopia's resources are dedicated to making rubber ducks.

How about the points outside the PPC?

- At point **X**, there are unemployed resources. This could mean that some of the labour market is unemployed, not all land is being used, or not all capital goods are being used.
- At point **G**, this represents a future production possibility curve if production capacity increased. We'll take a look at the different ways an economy might see this occur. Currently, this however is unattainable.

Changes in the economy

A production possibility curve may expand for one of three reasons:

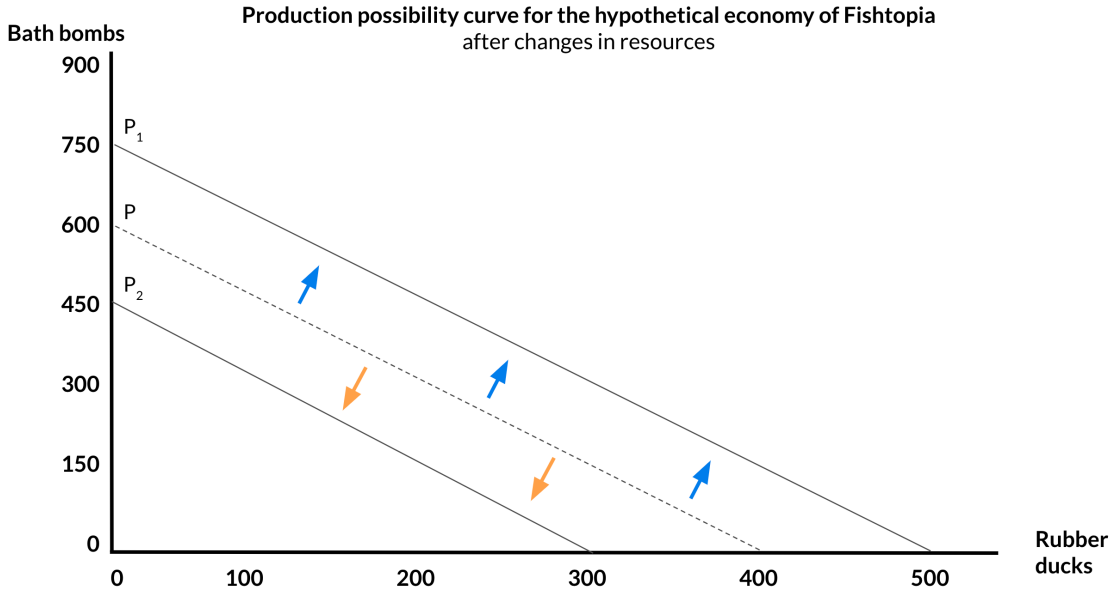
1. More resources are discovered
2. Increase in productivity of existing resources
3. Technological progress

What would this cause the production possibility curve to look like then?

Changes in resources

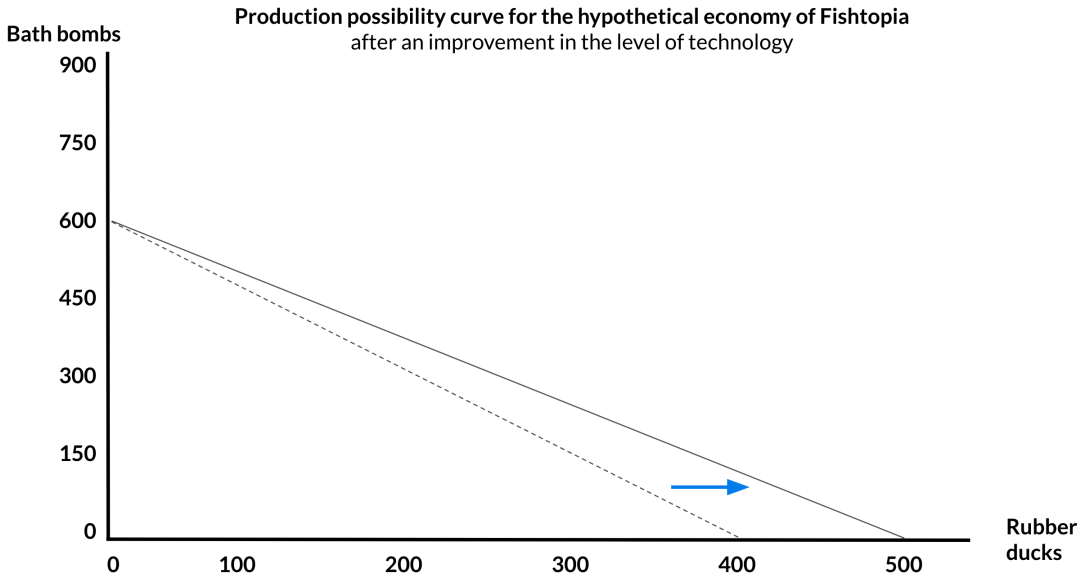
At **P_1**, the economy is great! More coal has been found to power new factories, more land stolen from the Republic of Hamsteria, and overall there is a general increase in the number of resources. Alternatively, existing resources are made more productive. That Prius the factory bought is pretty efficient! Therefore, the **production potential for Fishtopia shifts outwards** towards P_1 compared to P.

In an alternate universe, things aren't looking too good. Everything sucks, there isn't enough coal and the battery in the Prius died out. All the machinery is from 1892 and the eyes of the rubber ducks are drawn by hand. Oh damn it, a convenient tropical cyclone wiped out half of the machines. Therefore, the **production potential for Fishtopia shifts inwards** towards P_2 compared to P.



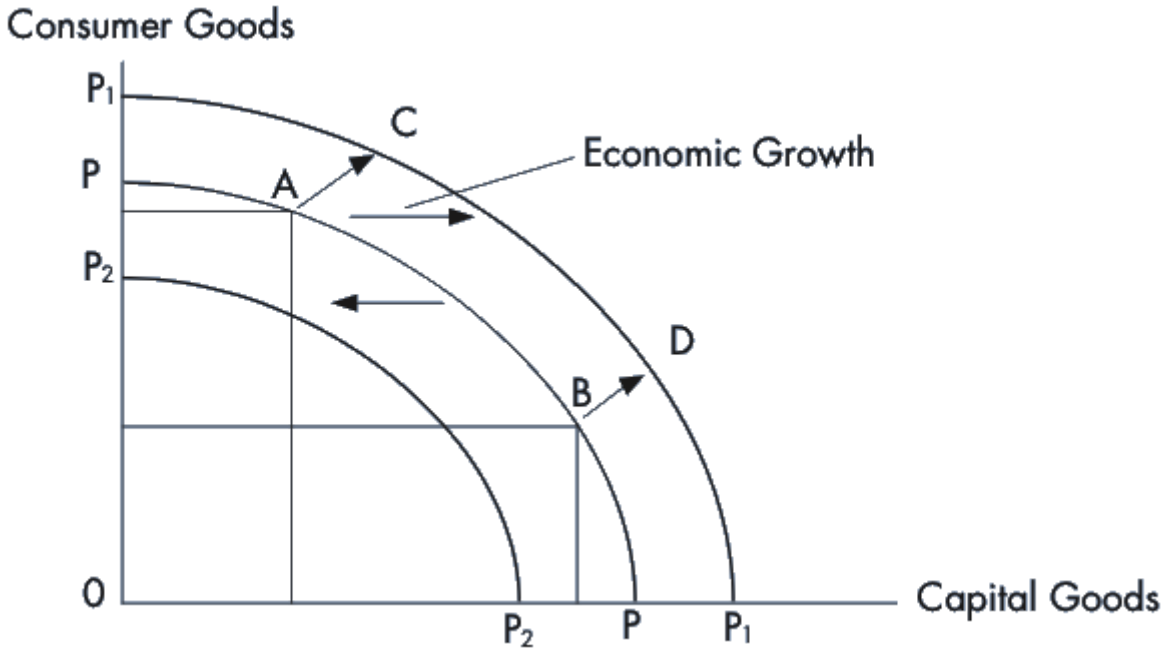
Improvement in the level of technology

Here, Fishtopia has innovated and created a machine that can produce rubber ducks more efficiently. The eyeball stamper is now much faster than before, therefore, Fishtopia's production capacity of rubber ducks has increased.



The concave production possibility curve

When a production possibility curve is concave about the origin, therefore it means that resources are not perfectly substitutable.



yes i'm too lazy to draw my own so here is one from the textbook

Definition: When resources are **perfectly substitutable** this means that the opportunity cost of producing one good vs another increases, as production of that good increases. This occurs when it is easier to dedicate resources to one product as opposed to another.

Example: In a hypothetical economy, I might produce two things: wagyu and anime. If my economy has land more suited to farming cows, then it would mean that producing wagyu is easier than producing anime using that resource. Therefore, the resources are not **perfectly substitutable**.

Allocative efficiency

Allocative efficiency is the allocation of resources according to the preferences of consumers and societies for certain goods and services, in order to **maximise utility and returns.**

Definition: In Economics, **utility** means satisfaction.

Current choices have future implications. This is known as the **intertemporal** budget constraint.

Definition: The **intertemporal budget constraint:** when consumption/saving choices affect our current and future living standards and availability of money.

Consumers

omg!! It's **Roy** from Fire Emblem: The Binding Blade. Roy, being the poor kid he is, has a **budget constraint** which means he needs to decide how much of his income he wants to save for the future, and how much he wants to spend now. In Australia, most people save 5-10% of their income for future utility through voluntary private saving. They also save for retirement through superannuation.

Note: The mandatory **superannuation guarantee levy (SGL)** in Australia is 9.5% at time of writing, although some people may voluntarily save more.

Businesses

Firms also have to make decisions about how they consume, and how much to save.

- Do we produce anime or manga?
- From our profits, should we distribute dividends, or retain the money for future investment?
- How much do we invest (e.g in new technology) to increase future competitiveness?

Governments

Governments mainly source income from taxation, fines, and the privatisation & profits from PTEs. They make consumption decisions on a variety of different community services and infrastructure projects like:

- Schools
- Roads
- Health
- Social security
- Fire department

If the government budgets for a **deficit** then government spending exceeds government revenue. Therefore, it may presently experience higher debt, and lower spending in the future.

If the government budgets for a **surplus** then government revenue exceeds government spending. Therefore, it may be able to repay debt and spend more money in the future.

Economic factors underlying decision making

Economic factors will influence the decision making of conusmers, firms and governments. For instance, if a society has a lot of **weebs**, they will probably consume a lot of **anime**.

Consumers

The basic macroeconomic relationship between income, consumption and saving is denoted as:

$$Y = C + S$$

where:

- **Y** = income
- **C** = consumption
- **S** = saving

Note: You'll see this macroeconomic relationship on the 3-sector circular flow model.

Keynes proposes three main reasons for why people save:

1. **Transactionary motive** to finance the purchase of goods and services
2. **Precautionary motive** as a precaution, such as in the case of unforeseen expenses
3. **Speculative motive** to invest money in order to earn a return (e.g shares, bonds, real estate)

Note: There are two main economists that are worth noting.

- **John Maynard Keynes**, who was an early pioneer of macroeconomics and governmental intervention, advocated for government intervention in the form of fiscal and monetary policies during economic downturn (even if running into a deficit), published in *The General Theory of Employment, Interest and Money* (1936). He also had a major role in shaping the international economy post-World War II.
- **Friedrich von Hayek**, a graduate of the Chicago School of Economics, defended classical free market liberalism in economics, and was particularly important in understanding the price signal. He believed private investment in public markets.

Keynes and Hayek disagreed with each other, Keynes leaning towards the planned economy, and Hayek more towards the free market. However, both made important contributions to economics in the 20th century, especially after the Second World War.

Other factors that will affect financial decision making include:

- **Education**, as higher education increases the potential of income that can be gained
- **Work**, as more-skilled employment will usually produce higher income and therefore, higher standards of living
- **Retirement,** as emphasis on self funded retirement is a major pillar of Australia's domestic economic policy through both compulsory and voluntary superannuation
- **Political views**, as one's political views is often reflective of their economic standards and effects of their policy platforms on households

Businesses

Businesses aim for the maximisation of profit, and as such, will make choices such as how much output, what the most efficient combination of capital and labour is, etc.

Prices will usually be determined by production costs, and there will be a mark up. Therefore, the **cost plus pricing** principle is:

$$price = costs + markup$$

where mark up is the profit margin to the entrepreneur.

Labour costs represent over 70% of production costs, which is why employers and employees will often negotiate wages and working conditions. The government regulates this in three main ways:

- The *Fair Work Act 2009* contains the National Employment Standards which outline the minimum working conditions

- The Modern Award system administered by the Fair Work Commission establishes minimum wage for various types of work
- The National Minimum Wage provides the absolute baseline minimum wage

Since 1991 negotiations have been deregulated in favour of **enterprise bargaining**. Employees, often through a trade union, directly negotiate with their employer in good faith. It must pass a "better off overall test" however, to ensure that the government-mandated standards are not sidestepped.

Government

Government influences decision making for households and firms in four main ways:

1. **Allocation of resources** through spending for the provision of infrastructure (e.g police, education, health, defence).
2. **Stabilisation of economic activity** through **monetary** and **fiscal** policy (e.g reducing interest rates, budgeting for a deficit).
3. **Progressive system of taxation** where individuals are taxed according to the level of income they earn. Taxation is then used to fund **transfer payments** such as pensions and social security.
4. **Regulation and fair trading** to protect individual consumer rights and encourage competition (e.g price regulation, minimum wage, and resource regulation)

Definition: A **transfer payment** is a redistribution of income and wealth from the government, making a payment without receiving goods or services in return.

Related:

- Market economy

The Operation of an Economy

Topic 1 | Chapter 2

An **economy** refers to the way in which a **society is organised** in order to solve the economic problem of scarcity.

There are two main types of economic systems:

- The free market (aka capitalism)
- The planned economy (aka communism)

Economies need to perform the three functions of **production**, **distribution** and **exchange**.

- What to produce?
- How much to produce?
- How to produce
- To whom to distribute

Note: See Appendix A for a more detailed table on the production, distribution and allocation questions.

Related:

- Allocative efficiency
- Short run average cost curve
- Economies of scale

What to produce?

- Societies will prefer certain goods over others.
- Producers are guided by these preferences to meet consumer demand for a variety of goods and services.
- Efficient allocation of resources = satisfaction of consumers' wants and needs = profit maximisation for producers — aka **allocative efficiency**

Based on demand and society's preferences.

- Which combination of goods and services will maximise society's utility?
- When deciding what to produce, we maximise the returns from using the available resources.

How much to produce?

- Dependent on the **pattern of consumer demand**, and **available resources**.
- The volume of production must coincide with the volume of demand, in order to achieve the most efficient allocation of resources.
- $production < demand$ = shortage of goods and resources = **unsatisfied wants**

- $production > demand$ = excess production = surplus of goods and resources = **waste of resources**
- $production = demand$ = **efficient allocation of resources**

Based on consumer demand and resource availability
- Which combination of goods and services will maximise society's utility?
- When deciding what to produce, we maximise the returns from using the available resources.

How to produce?

- The method of production is dependent on **resource availability** and the **level of technology**
- The incentive of **profit maximisation** means producers will attempt to minimise production costs through .
- **Resources which are scarce relative to others will command higher prices to reflect that scarcity.**
- In developing countries, **labour intensive production methods** are used more as unskilled labour is abundant and wages are low relative to the cost of capital.
- In developed countries, **capital intensive production methods** are generally used as capital is more abundant and cheaper to employ relative to higher cost labour.

Based on resource availability, costs and the state of technology.
- The method of production is motivated by profit.

To whom to distribute?

- Higher levels of personal income = greater ability to purchase goods and services ∴ **higher standard of living.**
    - Income is determined by employment, productivity, and contribution to production.

Distribution of output depends on individual incomes.

Economic systems

In the current world, there are two main economic systems, the capitalistic **market economy** and the socialist/communist **planned economy.**

Market economy

Market economies let the market allocate resources via the **price mechanism.** The price mechanism acts as a **rationing device** in the distribution process between producers and consumers. Income distribution in market economies are usually uneven as individuals are free to accumulate money and wealth. However, many governments provide welfare and a basic safety net. **Transfer payments** are made to the sick, unemployed, the disabled, veterans and others through a **progressive taxation system.**

Definition: A **progressive taxation system** redistributes income from high income earners to low income earners, making the distribution of income less unequal (compared to an absolute market economy).

The price mechanism

Prices are monetary indicators of the relative value of goods and services in an economy. A loaf of bread might cost $5, and a car $50,000. Therefore, the car is worth more than bread. The price mechanism:

1. **Matches output of producers, with the demand of consumers.** Increase in demand = rise in price.
2. **Rations limited supply of resources and commodities.** Increased scarcity = rise in price.
3. **Prevents wastage of resources** by avoiding shortages/surpluses in relation to demand. Producers are encouraged to match supply with demand (i.e. allocative efficiency).
4. **Act as signalling devices** to adjust economic behaviour.

Planned economy

Countries such as Cuba and North Korea are **planned economies**. The government is responsible for determining income and prices. The distribution of income is more equal, and prices of basic wants and needs are subsidised to make them affordable.

In former planned economies such as the Soviet Union and Poland, political elites usually had access to more money than the general public. Basic consumer goods were also in short supply, and now many formerly planned economies are opening up towards becoming more like a market economy.

Resources and the provision of income

Related:

- The factors of production

Note: The textbook blabbles a lot here about stuff I've already covered so I'm just going to ignore that :D

Investment

Investment is the process by which capital is accumulated for future want satisfaction.

$$saving \rightarrow investment \rightarrow capital\ accumulation$$

Interest

Note: We didn't cover this in class, so I'm not sure if it's too important to revise.

Interest is the cost of borrowing funds for investment purposes.

- The rate of interest is the **annual percentage return** paid to lenders for the borrowers of funds.
- It is determined by demand and supply of funds or money.

Real interest rate

$$real\ interest\ rate = nominal\ interest\ rate - inflationary\ expectatio$$

where:

- the **nominal interest rate** is the interest rate before taking inflation into account

If inflation rises, nominal interest rates will rise to maintain the real interest rate (and therefore, the real return on borrowed funds).

Factor income returns

Factor income returns are influenced by the productivity of each factor of production. They are paid to households by firms for the use of productive resources.

Disposable income is the income available to households after taxation:

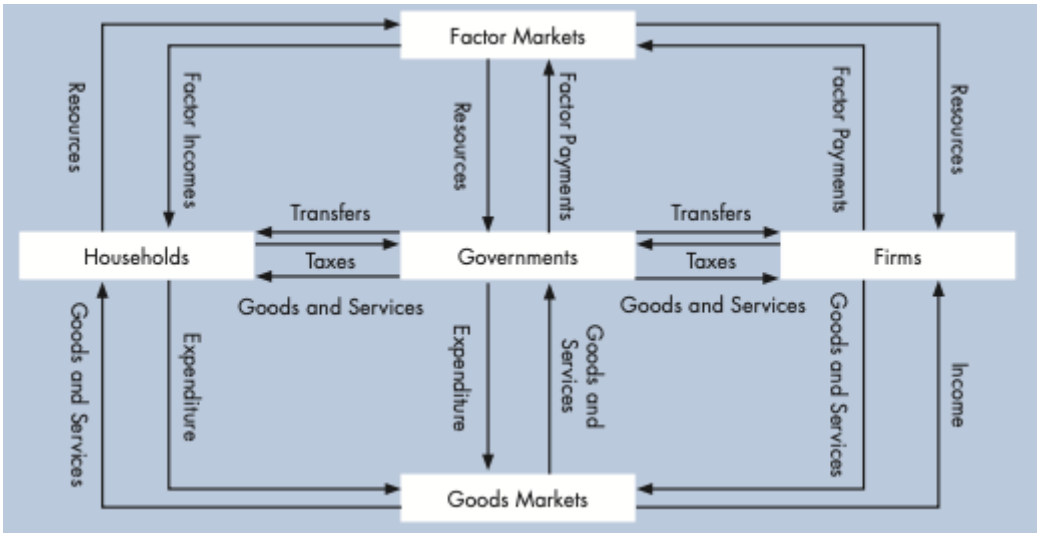
$$disposable\ income = gross\ income - taxation$$

Final income is all income, including government transfer payments, minus all taxation, including indirect taxes such as GST:

$$final\ income = gross\ income - taxation + social\ wage - indirect\ t$$

Provision of income

- Households provide resources to firms and governments through **factor markets**, in return for factor incomes.
- Firms supply goods and services to households through **goods markets,** in return for money expenditure.
- Governments provide goods & services and transfer payments to households and firms, and collect taxes from households and firms.



Provision of employment and the quality of life

The high level of **specialisation** in the economy leads to **interdependence** between households, firms and governments.

- Households depend on firms for the provision of employment and the payment of income.
- Firms depend on expenditure from households for their income.
- Governments collect taxes to provide collective goods and services, and transfer payments.

Definition: Specialisation (or the division of labour) is when individuals, firms or economies concentrate on producing a few goods and services that they are best at.

Definition: Interdependence, as a consequence of specialisation, means that participants in the economy rely on the economy to obtain products they cannot produce efficiently for themselves.

Related:

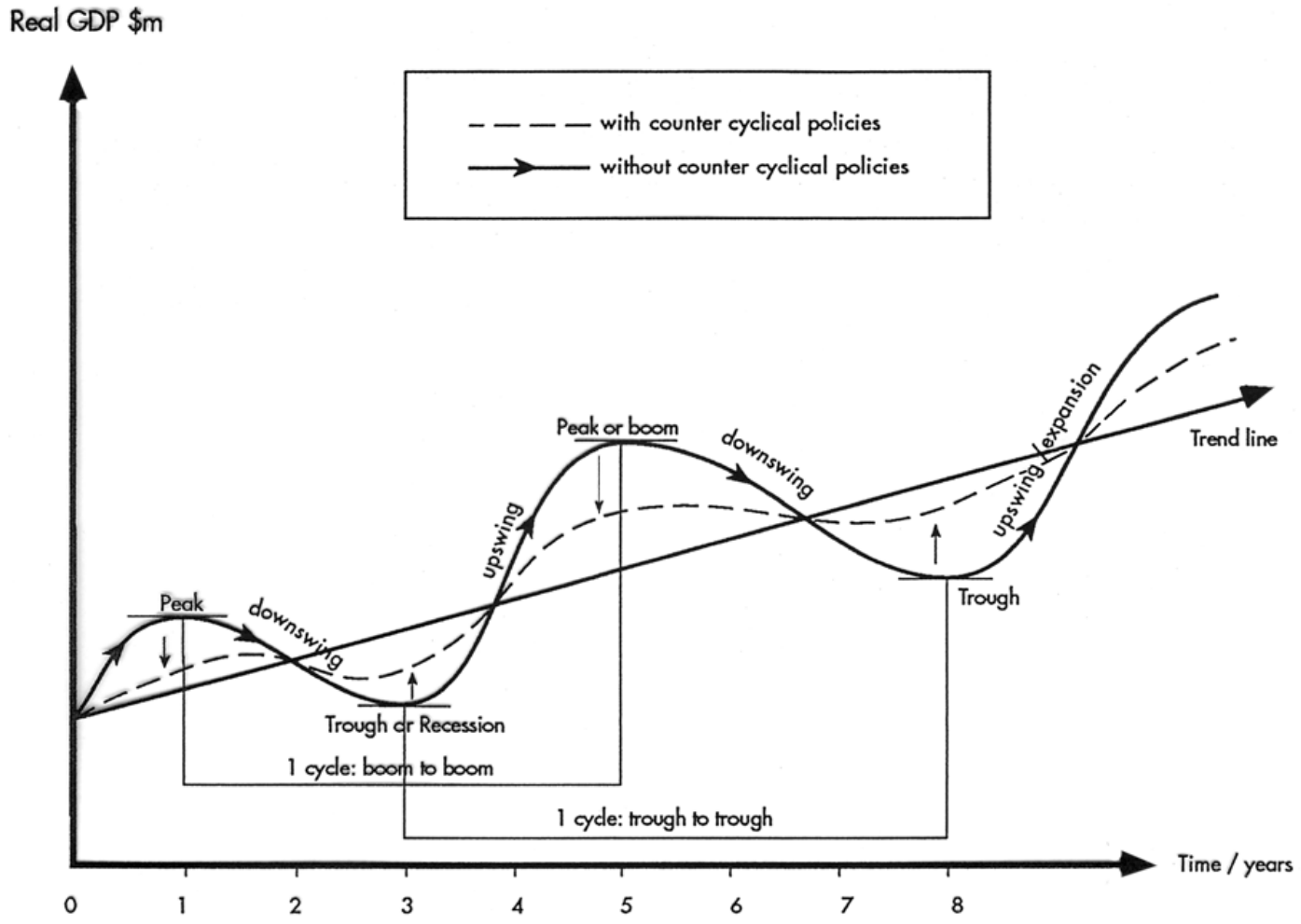
- Industries

Quality of life

The **quality of life** refers to the quantity and quality of material and non-material goods and services in the economy and in the community.

Material considerations	• Level of individual income • Types and nature of employment • Access to a range of consumer goods and services
Non-material considerations	• Collective goods and services (e.g healthcare, education, emergency services, housing)
Other quality of life indicators	• Access of safe drinking water • Clean environment • Social welfare • Safety of the community
Political freedoms	• Personal freedom (e.g freedom of speech) • Democratic electrons and voting

The business cycle



Upswing	• Higher economic growth • Higher levels of tax collections • Increased quality of life as a result of increased investment into collective goods

Boom	• Economic growth at a maximum point
	• Shortages of labour and resources
	• Inflation of prices
	• The government may use **contractionary** policies to slow down economic activity
	  ○ Lower inflation
	  ○ Higher cash rate to incentivise saving

Downswing	• Lower economic growth as economic activity decelerates • Less demand for labour leading to increased unemployment • Decline in the quality of life for some households because of falling incomes
Recession	• Economic growth at a minimum point • Excess supply of labour leading to rising unemployment • Deflation of prices as businesses attempt to clear unsold inventory by cutting prices • The government may use **expansionary** macroeconomic policies to stimulate the economy ○ Lower cash rate to disincentive saving

Note: Economic growth can refer to expenditure, output, income and employment opportunities.

The circular flow of income model

damn, so you want to trade your pokemon? Well you don't *just* trade pokemon, you carry coins with ya, throw pokeballs, battle others. It's almost like there are different **sectors** which carry out different economic purposes.

Definition: A **sector** is an aggregation of economic units which perform a similar economic activity or function.

The different sectors

Households	• All individuals in the economy who earn **income** by selling **productive resources.** • Households use income to purchase goods and services from firms in order to satisfy their needs and wants.
Firms	• All private business enterprises who **produce and distribute** goods and services to consumers. • Firms buy productive resources from households and make factor income payments in return. • Firms aim to maximise profits from production by **minimising production costs** and **maximising revenue** from the sale of goods and services.
Finance	• All financial institutions (banks and NBFIs) who engage in the **borrowing and lending** of money, and the **sale and purchase** of financial assets and services, to both households and firms. • Financial institutions will charge a higher interest rate to borrowers, than what they pay to depositors.
Government	• Governments raise revenue through taxes, rates, fees, PTE profits, and that parking fine you got last weekend. • They use taxes to provide collective goods and services (e.g education). ○ Or they're corrupt and they wire the money to a shell company registered to a shack in the Cayman Islands.

Overseas	• Exporters and importers of goods and services from across the world.
	• **Trade flows** refer to exports (e.g wagyu beef, iron nuggets, tourism) sold by Australian firms to the foreigners.
	• **Imports** (e.g anime, Dr Pepper, calculators) are purchased by Australian households from foreigners.
	• **International money/financial flows** are also included.
	  ○ Borrowing and lending between Australians and foreign financial institutions.
	  ○ Payments and receipts (e.g dividends, interest, rent and profit).

Definition: A **non bank financial intermediary** is a financial institution that doesn't have a full banking license, such as insurance firms, and therefore cannot accept deposits.

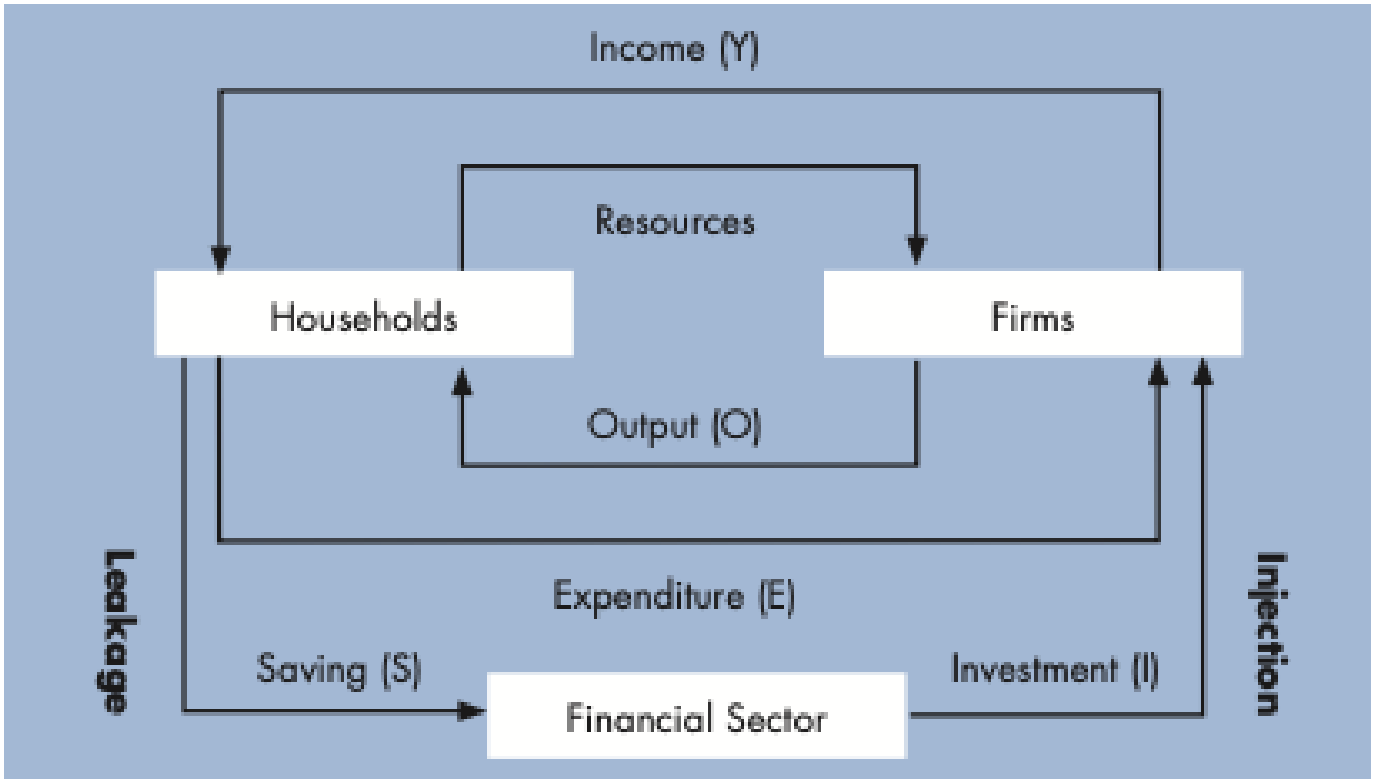
Definition: A **public trading enterprise (PTE)** (aka state-owned enterprise) is a government-owned business that operates as a business, as opposed to a government department. For example, Australia Post is a public trading enterprise.

Three sector model

The **three sector model** contains these sectors:

- Households
- Firms
- Financial

where **savings** are leakages as there will be less demand for goods and services from firms due to lower expenditure from households, and **investment** are injections to businesses wishing to invest in new capital or plant.



- $S = I$ the economy is at equilibrium.
- $S > I$ Y, E, O and employment will fall, leading to a recession and unemployment **(contraction)**
- $S < I$ Y, E, O and employment rises, leading to a boom and higher employment **(expansion)**

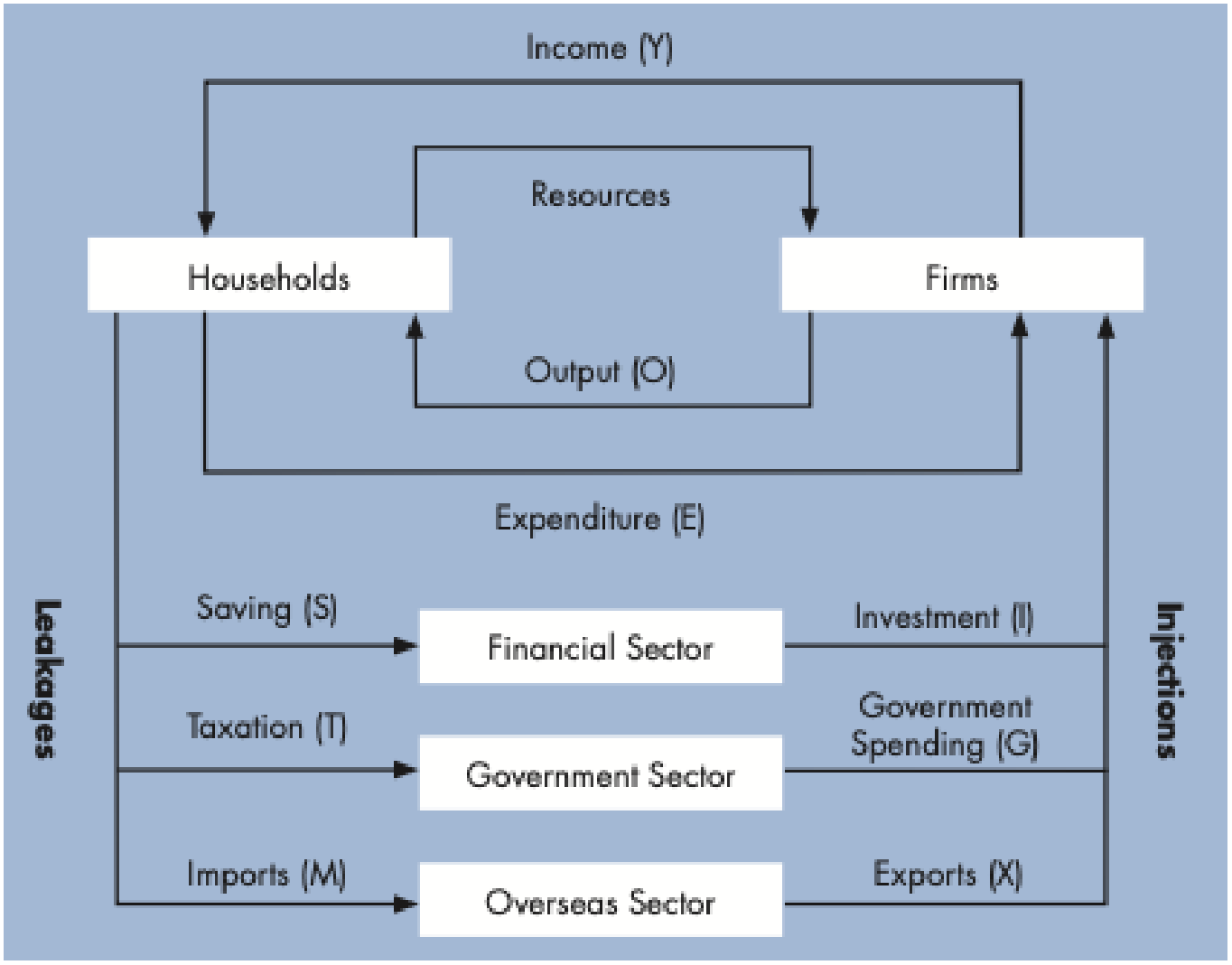
Remember: When $leakages > injections$, the economy **contracts**. When $injections < leakages$, the economy **expands**.

Note: You may be asked to draw a **consumption function** for the three sector model.

Five sector model

The five sector model contains these sectors:

- Households
- Firms
- Financial
- Finance
- Government



The equilibrium conditions occurs when **savings = injections**:

$$S + T + M = I + G + X$$

- If $S + T + M > I + G + X$ **leakages exceed injections** leading to a **contraction** in economic activity and increased unemployment
- If $S + T + M < I + G + X$ **injections exceed leakages** leading to an **expansion** in economic activity and lower unemployment

The Role of Business in the Economy

Topic 2 | Chapter 5

Businesses (also known as firms) play a big role in the economy. Unlike Pokémon Centers in the Pokémon video games, most things aren't free. Instead, businesses produce and sell products in order to gain the **maximum return** by **minimising costs**. So, more like the Pokémon Center in Tokyo. Where you actually have to pay.

Note: This topic focuses on the microeconomics of business and industry.

Note: This chapter assumes prior knowledge of Chapter 2: The Operation of an Economy.

Industries

Primary Natural resources	• Agriculture • Mining • Fishing • Forestry
Secondary Manufacturing of usable products	• Mineral processing • Clothes • Furniture • Food
Tertiary Distributing final goods and services	• Wholesale • Education • Health • Insurance
Quaternary Information technology services	• Database engineers • Programming • Adrian
Quinary Personal services	• Taxis • Uber • Deliveroo • Housekeeping • Babysitting

Production periods

- In the **short run**, some costs (e.g capital) are fixed and some costs are variable
- In the **long run** (planning period), all costs are variable as firms can expand or contract in operations

Example:
- In the **short run,** there can be **fixed costs** (e.g rent) or **variable costs** (e.g wages).
- In the **long run,** all costs are variable. **Expansion** through increasing productive capacity will

contribute to growth in output, employment of labour, and resources (e.g raw material, capital). Or, the firm may **wind down** if it is not turning a profit.

Legal structure of firms

Firms are always either:

- **Privately held** (owned by private shareholders) or **publicly listed** (traded on the stock market)
- **Private sector** (private business) or **public sector** (owned by the government - see PTEs)
- **Incorporated** (separate legal entity) **or unincorporated** (personally connected to shareholders)

Incorporated businesses exist as a separate legal entity. The company can be sued in court, but the liability (debt) of

Note: A proprietary limited company (Pty Ltd.) is a **limited liability** company incorporated in Australia.

Definition: A **public trading enterprise (PTE)** (aka state-owned enterprise) is a government-owned business that operates as a business, as opposed to a government department. For example, Australia Post is a public trading enterprise.

The goals of a firm

Profit maximisation

The main goal that is assumed to apply to a firm's market behaviour in economics is **profit maximisation.**

Calculating profits	$\pi = TR - TC$	• π **= profit** • TR = total revenue • TC = total cost
Calculating total revenue	$TR = P \times O$	• **TR = total revenue** • P = price • O = output
Calculating total cost	$TC = FC + VC$	• **TC = total cost** • FC = fixed costs • VC = variable costs

Cost and revenue theory

Fixed and variable costs

Fixed costs are costs that don't change or fluctuate. They remain constant regardless of the amount of output in the short run.	• Rent • Insurance • Depreciation of capital

Variable costs are costs that will vary and fluctuate. They may be an increase in variable costs if there is an increase in output.	• Water • Electricity • Wages

Calculating average cost	$AC = \frac{TC}{O}$	• **AC = average cost** • TC = total cost of production • O = units of output
Calculating marginal cost	$AC = \frac{\Delta TC}{\Delta O}$	• **AC = average cost** • ΔTC = difference in total cost of production • ΔO = difference in units of output
Calculating average revenue	$AR = \frac{TR}{O}$	• **AC = average revenue** • TR = total revenue • O = units of output
Calculating marginal revenue	$AR = \frac{\Delta TR}{\Delta O}$	• **AC = average revenue** • ΔTR = difference in total revenue • ΔO = difference in units of output

Note: Δ represents **change**. For example, ΔTR in total revenue would be the total revenue from Y_n — the total revenue from Y_{n-1}

Related:
- Calculating total revenue
- Calculating total cost

Efficiency and the production process

The main sources of productivity improvements arises from either one of the following means:

- The division and specialisation of labour
- The specialisation or localisation of land or industry
- The specialisation of capital or large scale production

Calculating productivity	$productivity = \frac{output}{inputs}$
Calculating multifactor productivity	$MFP = \frac{output}{all\ inputs}$

Calculating single factor productivity	$$SFP = \frac{output}{single\ input}$$

Advantages of rising factor productivity	Disadvantages of rising factor productivity
• Lower costs • Lower prices • Increased efficiency • Higher profits and real incomes	• Structural unemployment through deskilling of labour • Higher rates of structural and technological change in production and industry

Specialisation

The specialisation of labour will result in higher efficiency, therefore increased output per unit of labour (higher APP).

Example: A cashier who is skilled and confident at their job, and does not need to be trained, will be able to serve more customers than a trainee cashier who will be slower at their job.

Law of diminishing returns

The **law of diminishing returns** or variable proportions proposes that in the **short run**:

> Adding increased amounts of variable factors to fixed factors will affect total output, therefore diminishing returns.

When considering the law of diminishing returns, we use a simplistic model using the following assumptions:

- There is only **land (fixed)** and **labour (variable)**
- The level of technology and other factors of production remain **constant**

In the economic model, various quantities of the **variable** factor are used in combination with the **fixed** factor, resulting in changes in output.

Production function

- The **total physical product** (TPP) is the total output
- The **average physical product** (APP) is the average output per unit of variable factor (e.g labour)
- The **marginal physical product** (MPP) is the extra output per an additional unit of variable factor

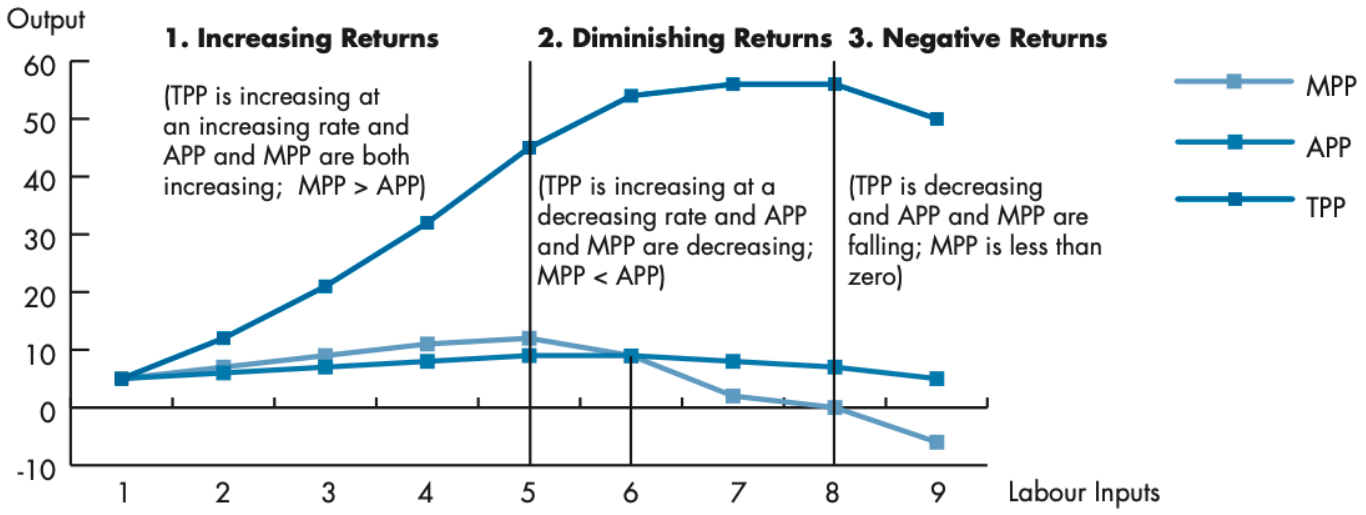
Calculating average physical product	$$APP = \frac{TPP}{L}$$	• **APP = average physical product** • TPP = total physical product • L = units of variable factor

Calculating marginal physical product	$$MPP = \Delta TPP = TPP_1 - TPP_{t-1}$$	• **MPP = marginal physical product** • ΔTPP = change in total physical product • ΔO = change in units of output • t = time
Calculating total physical product	$$TPP = O$$	• **TPP = total physical product** • O = total units of output

For example, consider this production function for **wheat**, shamelessly stolen from the textbook..

- **Fixed factor:** land
- **Variable factor:** labour

Land (Fixed factor)	**Labour** (Variable factor)	**TPP**	**APP**	**MPP**
1	0	0	0	0
1	1	5	5	5
1	2	12	6	7
1	3	21	7	9
1	4	32	8	11
1	5	45	9	13
1	6	54	9	9
1	7	56	8	2
1	8	56	7	0
1	9	50	5.5	-6

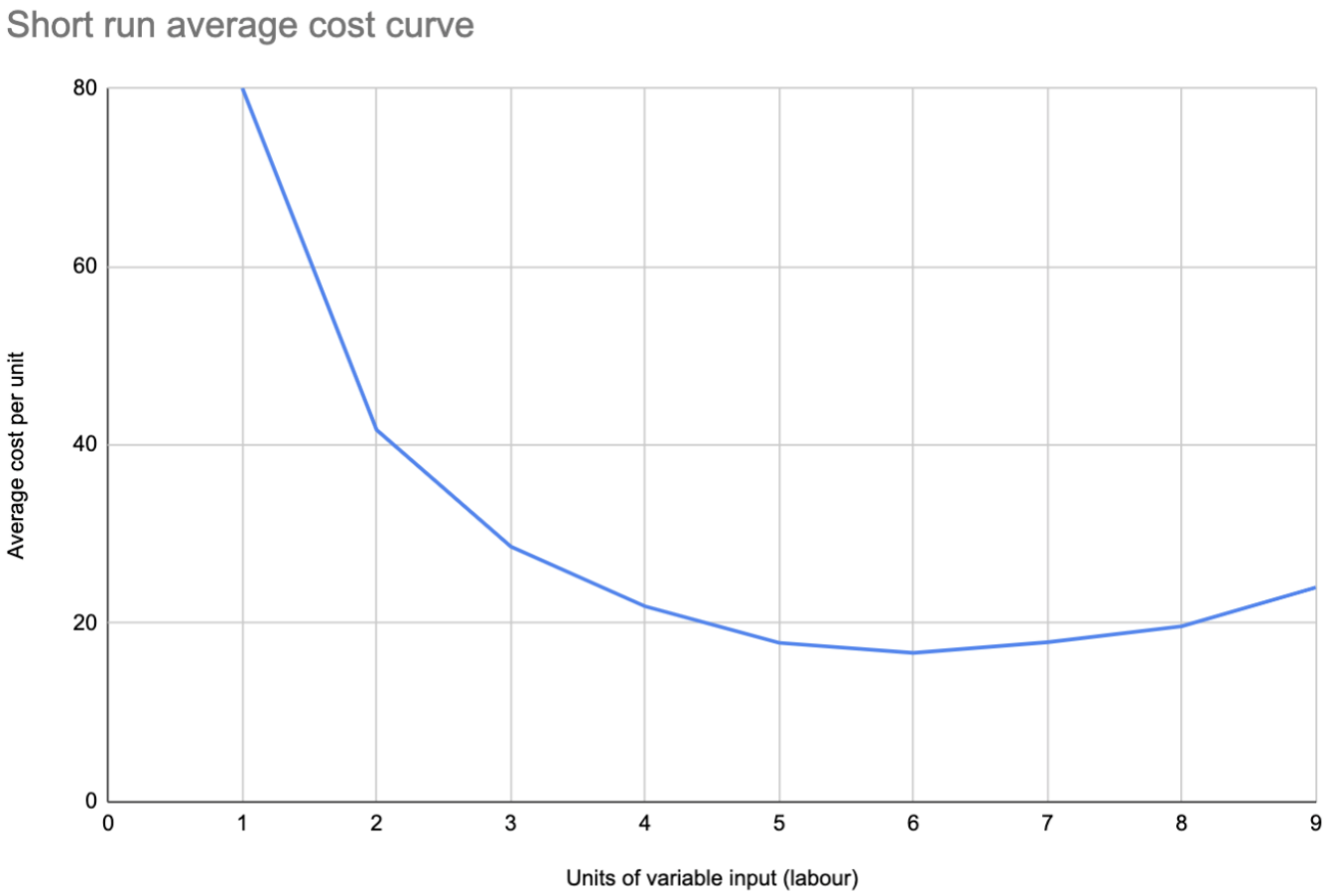


Variable factor	TPP	APP	MPP	Returns to the variable factor
1 to 5	Increasing at an **increasing** rate	Positive and rising	Positive and **rising** MPP > APP	**Increasing** returns
6 to 8	Increasing at a **decreasing** rate	Positive but falling	Positive but **falling** MPP < APP	**Decreasing** returns
9	Decreasing	Positive but falling	Negative	**Negative** returns

Example: In a coffee shop, adding labour for a few people might increase efficiency, allowing output to be produced at faster rates **(increasing returns)**. As you add more people, you'll see that adding labour may increase output and efficiency, but at a slower rate than before **(diminishing returns)**. And adding too many people in a small coffee shop, will result in them bumping into each other, and possibly not being as efficient as before **(negative returns)**.

Short run average cost curve

The **short run average cost curve** (SRAC) is a concave up parabolic curve which represents the average cost per unit of variable input, based on the law of diminishing returns.



- The **x-axis** is output (TPP) or units of variable input (e.g labour)
- The **y-axis** is average cost per unit

At the lowest point on the graph, this is known as the **technical optimum (TO)**, where the average cost per unit of variable input is at its lowest.

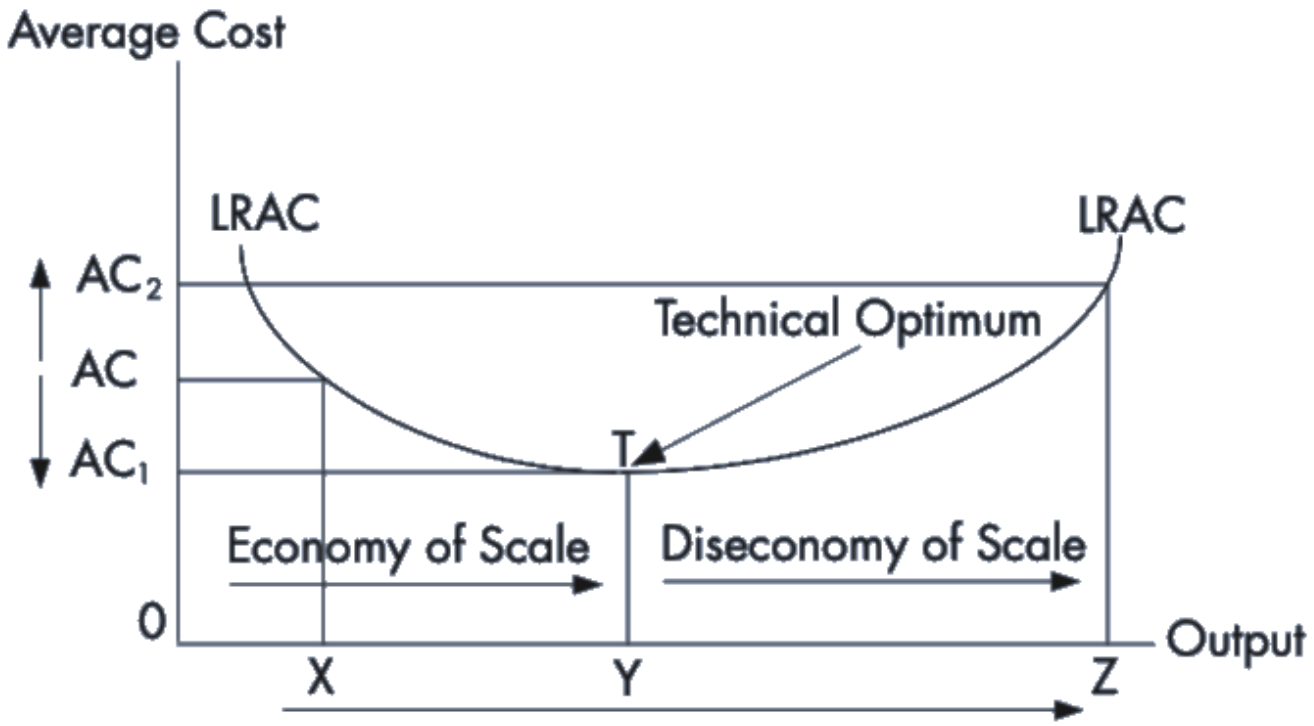
Remember: Short run assumes both **fixed** (e.g capital) and **variable** (e.g labour) costs.

Note: The technical optimum is what most firms aim towards, however some may decide to make different choices. For example, if a company needs to fill orders and retain customers, they may use more resources at a higher cost per unit.

Economies of scales

Long run average cost curve

With a series of short run average cost curves, we can determine a **long run average cost curve** (LRAC). It has the same axis as the LRAC.



Remember: Economies of scale only apply to **long run**.

Internal economies of scale

Before the technical optimum (OX—OY), **as output increases, cost per unit reduces**. This can result from the following:

- **Specialisation and division of labour** for higher labour productivity and output.
- **Specialisation of capital** to raise total factor productivity, especially labour productivity, increasing TPP.
- **Lower input costs** through discounted purchase of resources in bulk.
- **Access to cheaper finance** with lower interest rates due to a lessened risk of borrowing.
- **Reusing waste material** from large scale production.
- **Research and development** that leads to new products and processes, to lower production costs and increase sales of output.

Internal diseconomies of sales

Beyond the technical optimum (OY—OZ), **as output further increases, cost per unit increases.** This can result from the following:

- **Management of the firm becomes too complex and costly** to coordinate due to lack of communication and bureaucratic inefficiencies.
- **Increased output may only occur with more variable factors** raising variable costs, therefore increasing average costs.
- **Congestion in the production process** from errors in production, and higher distribution & administrative costs will make rising average costs difficult to reduce.

External economies of scale

Factors outside the firm's direct control, may result in reductions in average costs. Naisu. This could occur because of the following:

- **Lower resource costs** with closer proximity to natural resources.
- **Improved transport facilities** such as expanded rail.
- **Proximity to a higher-skilled labour force** (e.g technology park).
- **Government-funded research and development** to improve the production process or create new products.
- **Lower cost of finance** from growth opportunities within the entire industry.

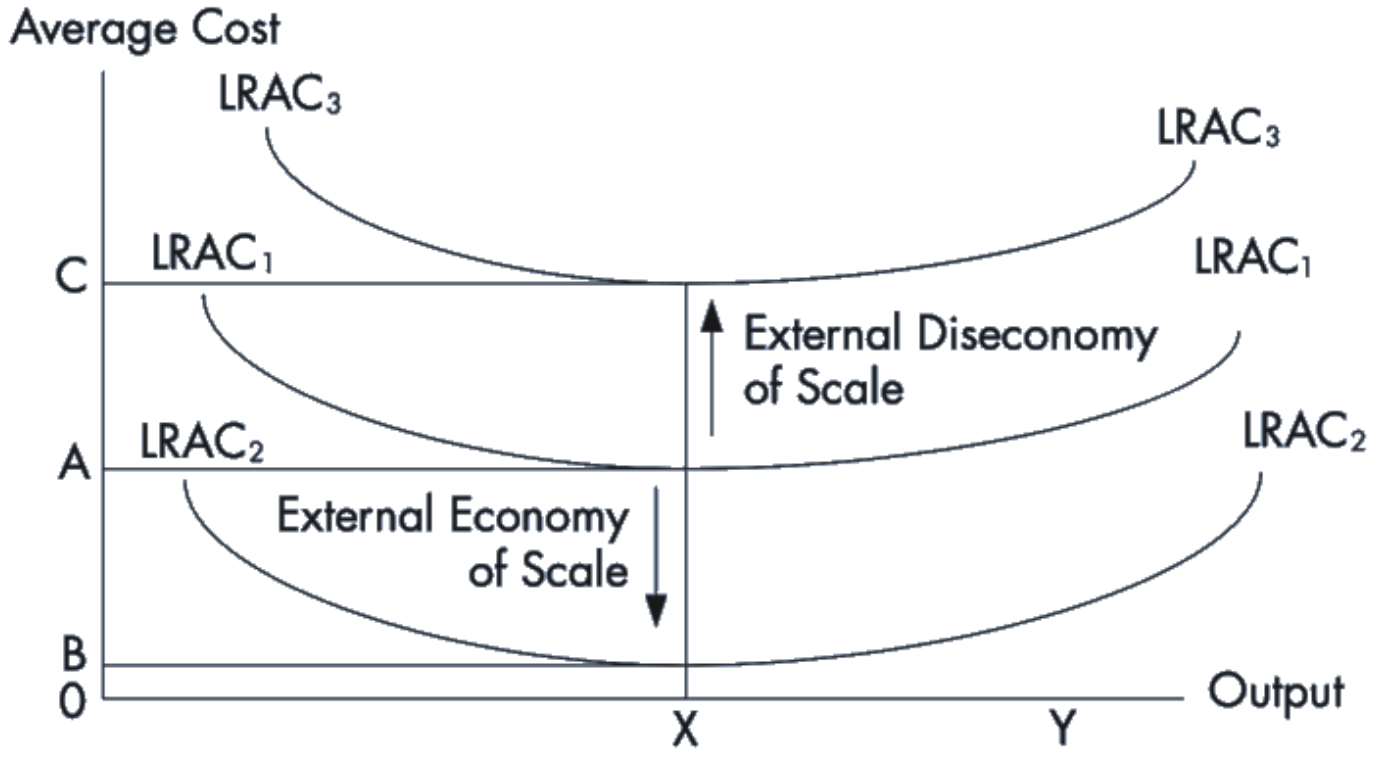
Note: With **external economies** of scale, the entire LRAC shifts **downward**.

External diseconomies of scale

Factors outside the firm's direct control, may also result in increases in average costs. Oof. This could occur because of the following:

- **Higher resource costs** due to increased competition between firms.
- **Increased government regulation** (e.g environmental regulation).
- **Higher labour costs** due to a shortage of labour.
- **Increased congestion and pollution** (e.g lack of parking, higher traffic congestion).

Note: With **external diseconomies** of scale, the entire LRAC shifts **upward**.



Demand and Supply

Topic 3 | Chapter 6

How many hot dogs will you buy?

The theory of demand

Demand refers to the quantity demanded of a good or service by consumers at a particular price point.

Definition: Effective demand refers to the ability for consumers to both desire and pay for goods and services

Individual demand factors

Individual demand is affected by:

- **Price** where a higher price usually means a lower quantity demanded.
- **Price of other goods and services** where relative prices of substitute or complementary goods and services will affect demand.
- **Individual income** where a higher individual income usually means a higher quantity demanded.
- **Personal preferences and taste** where if I like pineapples, imma buy more pineapples.

Market demand factors

Market demand is affected by:

- **Population demographics** such as population, age composition, social-economic status and distribution of people. For example, an ageing population may result in creased demand for healthcare and pharmaceuticals.
- **Distribution of consumer and household incomes**, where more equal distribution of income may lead to a rise in demand for luxury consumer durables.
- **Customer expectations about the future**, where if consumers expect a price of a good or service to fall in the future, they may purchase larger quantities now.
- **Level of technological progress**, where if better quality products are produced, it may lead to increased demand for that product or service.

References and Related Links

spice and wolf~

textbook + wikipedia + mr duggan :D

Acknowledgements

- Mr Greg Duggan

Version information

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Appendix A

Production, distribution and exchange questions

- Production
- Resource allocation
- Distribution
- Exchange

Question	Dependent on...	Description	Type of question

What to produce?	Consumer/capital goods mix	• Firms must determine
		  ○ market demands
		  ○ its own preferences and expertise
			Production question based on demand and society's preferences

How much to produce?	Consumer demand and resource availability	• Firms must satisfy market demand to **maximise revenue** and **minimise costs**	**Production** question baked on consumer demand and availability
How to produce?	Resource availability	• A question of resources and available technology in the production process • Firms aim to produce output at minimum cost	**Production** question based on resource availability, costs, level of technology
To whom to distribute?	Factor incomes and provision of welfare	• A management structure is needed to lead the production process • Resources must be compensated for (e.g **profit** for the entrepreneur's risk taking, **income** for human labourers)	**Distribution** and **exchange** question based on income and individual productivity