README: Those long paragraphs in which separate points are numbered (like 1), 2), 3)) are how **I memorised the ANALYTICAL explanations for Econs**. They may or may not be applicable for your syllabus/your school. Please do ask your teachers beforehand!

Define allocative efficiency:

- Allocative efficiency is a situation where the combination of goods/services produced maximizes the total economic welfare of society

1) How does the market allocate goods and services through its signalling, rationing and incentive functions of price. NOT ABOUT WHY/HOW the market may lead to efficient allocation of resources

How does the free market allocate goods and services? Through its signaling, rationing and incentive functions

Signaling role: **Helps to decided what* and how much* to produce**

Assuming a perfectly competitive market, there is consumer sovereignty

- Consumers 'vote' for what they want firms to produce through their purchases and 'vote' against a product by not buying them. Through the use of 'dollar votes', consumers determine what and how much to produce → Firms respond to these dollar votes by producing only these goods at the prices that they themselves are willing to accept
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- Due to the economic concept of scarcity, firms will devote **scarce resources to produce a good only if it is profitable**. How much of a good **is actually** produced is determined by the price mechanism finding the price at which quantity demanded equals to quantity supplied

- Changes in price **signal** to producers if more or less resources should be allocated to production, prices will rise and fall to reflect shortages and surpluses respectively and firms will adjust their production levels accordingly

PLEASE GIVE EXAMPLE:

- Say consumers increase demand for a good like cars due to higher incomes → Rise in demand indicates a higher willingness and ability to pay a higher price

- Rise in demand leads to shortage at initial price, causing upward pressure on prices → **incentivises** firms to increase quantity supplied because it means a **higher profit margin** …also means they **are getting more than they need to cover their marginal cost of production** → hence explaining the higher profitability. This rise in profitability, **signalled by higher price** **incentivisess** profit-motivated car firms to expand production in response to the change in preference. This is indicated by the diagram as the higher price leads to higher quantity supplied (upward movement along supply curve)

- They will therefore hire more factors of production like labor → and hence more cars will be produced

Consumer-side
This rise in price is also a **signal and incentive** for consumers

- The rise in price signals to consumers that the net MB from consuming the good is now lower and thus incentivises them to consume less in response to the higher price (indicated by diagram, downward movement along demand curve)
- Thus, quantity supplied rises and quantity demanded falls until shortage is eliminated at higher price

PRICES ALSO DETERMINE **HOW GOOD** IS PRODUCED if there are changes in price of factor inputs

- Profit-maximizing firms typically use a mix of labor and capital in their production, but they will still react to relative **factor** prices to determine how to produce
- If for instance labor is more abundant than capital therefore it is cheaper, assuming that they have the same productivity → firms will be incentivised to use more labour-intensive methods of production

Rationing

- In pursuit of profits, firms will only sell their output to those who are willing and able to pay a price that minimally covers their marginal costs. Hence, market price thus determines for whom the goods are produced as those goods will only be distributed to those with the willingness and ability to pay **market equilibrium price**

2) How does the free market lead to efficient allocation of resources?

Consider the marginalist principle

DD curve → Represents maximum price consumers are willing and able to pay for various quantities of a good. But how?/why? Do they determine that price

Applied to consumers,

In **pursuit of self-interest**, a rational consumer will seek to maximize their **net total private benefits** from buying/consuming a good/service given his **limited income** (scarcity idea)

- He will buy an additional unit of a good as long as the MPB (which is the **additional** utility derived from consuming an **additional unit of the good**) exceeds the marginal private cost (which is the **price consumers pay for the good**)

Therefore, the maximum price a consumer would be willing to pay for **one more unit of a good** would represent the **marginal utility** that he derives from **consuming that additional unit**.
THEREFORE Market demand curve is the same as the MPB curve for consumers

Applied to producers,
Supply curve also represents the **minimum price that producers are willing and able to accept** for various quantities of the good.

How/why do they determine that minimum price?
In the pursuit of self-interest, a **rational producer** seeks to maximize **the total profits** from producing/seling a good/service.

- Producer will be willing to sell **an additional unit of a good** as long as the MPB (which is the **additional revenue from selling an additional unit** which is equal to price consumers pay) exceeds the MPC (which is the **marginal cost of production**)

Therefore, minimum price that a producer would be willing to accept to produce one more unit of a good would represent the **MC he incurs from producing an ***additional unit**. Market supply curve is the same as **MPC** of producers

Here's the analytical part

- Assuming no externalities, the MPC incurred by the firms will be the same as MSC incurred by society as a whole, while the MPB enjoyed by consumers is the same as the MSB enjoyed by society as a whole.
- As such, **in a perfectly competitive market for a ***private good**, the demand curve will reflect both MPB and MSB whilst supply curve reflects both MPC and MSC

WIth the three aforementioned assumptions (perfect competition, private good, no externalities) → The market equilibrium at point e is also **socially optimal equilibrium, where MSB=MSC**.
At output Qe, society's welfare is maximized and allocative efficiency is achieved.

TO GO FURTHER IN ANALYSIS, you also need to explain why welfare is maximized at Qe and what happens if market output is less or more than Qe

For units Q1 (to get Q1 u just choose a quantity shorter than equilibrium) to Qe, MSB>MSC. This means that for every additional unit of output from Q1 to Qe, the additional satisfaction to society is greater than the additional cost incurred.

- Highlight the TSB from between **Q1 to Qe** and then the TSC
- Hence, there will be a net increase in society's welfare of area **xyz** if society is to produce and consume Q1 to Qe units..therefore, at Q1, society's welfare is not maximized due to underconsumption . Any output level smaller than Qe is hence not allocatively efficient

If market output is more than Qe. For unit Q2 (just choose quantity larger than equilibrium)

- MSC>MSB. This means that for every additional unit from Qe to Q2, the additional satisfaction to society, the TSB is given by … whereas TSC is greater at…

- Therefore, there is a net loss in society's welfare of area exy that is incurred because society produced and consumed Qe to Q2 units. Therefore, society's welfare is not maximised. Any output level above Qe is hence not allocatively efifcient

THEREFORE, for the free market to allocate resources efficiently, the 3 assumptions of **private good, absence of externalities, and perfectly competitive markets must hold**

Allocative efficiency can also be achieved where the sum of CS and PS is maximised, but this isn't too analytical

Relevant very standard question to point 2). Explain why allocative efficiency may be achieved in free market

Causes of market failure

1) Externalities
2) Imperfect information
3) Immobility of FOP
4) Market dominance
5) Public good

3) Extrernality refers to positive or negative impact on a third party not involved in the consumption or production of a good.

Positive externality: Refers to beneficial impact on a third party not involved in the production or consumption of a good
Negative externality: Refers negative impact on third parties not involved in the production of rocnsumption of the goods

Externalities cause a divergence between MPC and MSC or MPB and MSB

Marginal external benefit (always must describe) - **additional benefit** enjoyed, from the production of consumption of the **additional unit of the good**, by third parties not involved in the production or consumption of the good

Marginal external cost - **additional cost imposed** by by the production or consumption of the **additional unit** of a good, on **third parties** not involved in the production or consumption of that good

You should know how to describe all of this already

PLEASE make sure to give examples of externalities etc.

- Positive externality causes the MSB to be greater than MPB, since additional benefits to society (MSB) includes **both** private benefits to individuals consuming and external benefits to individuals not consuming
- **Graphically, the existence of MEB** causes the MSB curve to be higher than MPB curve, where **MEB is the vertical distance between the MSB and MPB curves**

Citizens not involved in production or consumption of (vaccines, healthcare , education, R&D) enjoy positive externality, which is defined as an external benefit to third parties not involved in the consumption of the good … highlight what the **contextualised** externality is

1) Describe what the MPB and MPC is in the context of the person undergoing the consumption/production

1) This positive externality causes **the MSB to be greater than the MPB, since the additional benefits to society (MSB) include both the additional private benefits to consumers (MPB) as well as the additional benefits to third parties not involved in the consumption (MEB)**
2) Graphically, the existence of this MEB causes the **MSB curve to be higher than the MPB curve**, where **MEB** is the vertical distance between the **MSB** and **MPB** curves
3) (also make sure when you draw MSB the gradient is converging)
4) **Under the free market**, consumers will disregard the external benefits of their consumption and will solely base their consumption decisions on their MPB and MPC.

5) **Assuming no negative externalities*****, MPC=MSC. Left to market forces, the market equillibrium output will be at Q and
6) However, the **socially optimal output and price is at Q*** , where MSB=MSC and hence society's welfare is maximised
7) Hence, the positive externaliteis generated have resulted in underconsumption of …, resulting in DWL of area..
8) This is because from Q to Q, MSB>MSC, ..graphical analysis of respective areas

Negative externality explanation

1) Production/consumption of …imposes a cost to the person undertaking as they have to pay…, which will be the firms' MPC
2) Nonetheless, they also earn revenue, which is their MPB
3) However, the ….of this activity causes negative externalities, which refer to costs borne by third parties not involved in production or consumption…(medical bills, domestic violence, etc)
4) This negative externality causes the Marginal Social Cost to be greater than the Marginal Private cost. Because MSC consists of both MEC and MPC
5) Graphically, the **existence of MEC causes MSC>MPC, where MEC is reflected as the vertical distance between the MSC and MPC curves**
6) Under the free-market, producers will base their decisions on their MPC and MPB and disregard the external costs
7) **Assuming no positive externalities**, MPB=MSB.
8) Left to market forces, market equilibrium output will be at Q where **demand=supply** and market equilibrium price is at P. However, socially optimal output is where MSB=MSC. Hence, **the negative externalities results in under-pricing of the good as the market price P is lower than the socially optimal price…** as well as overproduction of demerit good resulting in welfare loss to society
9) DWL area TSB TSC must be explained

4) Imperfect information

Imperfect information/Assymetric information (always demand side. If it's like vaccines where people are informed. 'Perceived MPB' lower than Actual MPB' and if it's alcohol/cigarettes where people are uninformed, 'Perceived' MPB is higher than actual MPB)

Under-estimation

1) Describe how **imperfect information**…consumers may be ignorant and **under-estimate/ true benefits of consumption**
2) Under-estimation causes the perceived **MPB** to be lower than the **true MPB**. Consumers would base their consumption decisions on their **perceived MPB** and hence **perceived MPB** curve is also **market demand curve**

3) **Assuming no externalities,** the MSB curve will be the same as the True MPB whilst the MSC curve is the same as MPC curve, which is also SS
4) Left to market forces, market equilibrium will be at Q. Socially optimal output will be at Q*, where MSBMSC
5) There is hence **underconsumption of Q-Q units**
6) Between these units, MSB>MSC, hence there is additional gain to society's welfare that can be reaped if more healthcare is consumed
7) At output level Q, a DWL of area M is incurred since TSB>TSC between this

Over-estimation

1) Describe how imperfect information in (cigarettes, alcohol etc PLEASE highlightt he problem)...consumers are ignorant about these harms and over-estimate **the true value**
2) The over-estimation causes the **perceived MPB** to be higher than the **true MPB**
3) Consumers base their consumption decision on their **perceived MPB,** hence perceived MPB is also **market demand curve**
4) **Assuming no externalities**, the MSB curve will be the same as the True MPB curve, while the MSC curve is the same as the MPC curve which is also the supply curve
5) Left to market forces, market eqlm output will be at Q where DD=SS…
6) Socially eqlm is where MSB=MSC at Q, hence there is overconsumption area incurred hence TSC >TSB therefore market have failed to achieve allocative efficiency

Assymetric information

Definition: Occurs when one side of the market - either buyers or sellers, has better information than the other. **Different information leads to *distortion of incentives and inefficient market outcomes**

5) Asymmetric information leading to **adverse selection**

Adverse selection is a situation in which the asymmetric information results in 1)**an unfavourable selection of of products and/or buyers in a market** → which leads to a **missing market** for a 2) segment of other buyers/sellers, who do not get to buy or sell the good even though it is beneficial for them to do so. This arises from **information asymmetry before the transaction has been completed**

Case 1: Knowledgable sellers and uninformed buyers

Example: Used car market.

Take a 'lemon' to represent a poor quality product, like a second hand car that needs frequent repairs1

1) Sellers know more about the quality of the cars than the buyers, who at the very most will get to test drive the car

2) Buyers will offer a price based on **whether** they believe a car is high-quality(like a cherry), or low-quality (like a lemon)
3) If he thinks that the used car is a cherry, he will be willing to pay a high price of $10,000
4) If he thinks that the used car is a lemon, he will only be willing to pay a price of $5,000
5) The price sellers are willing to accept is based on the quality of the car **which is known to them**. Seller of a high quality car is **only prepared** to part with it if offered say $8000, whereas for low-quality used car, **he is only willing to part with it for at least $3000**

The issue is
7) Consumers know there are low-quality cars being offered for sale, **but they do not know which car is of low or high-quality**
8) If they assume that half the cars are lemons and half are cherries, they will be prepared to offer an average price of $7500 for instance (10,000+5000/2)
9) HOWEVER, sellers of high-quality cars are not prepared to accept this price.
10) They will not offer their cherries for sale and they will leave the market
11) On the other hand, sellers of low quality cars are **willing to sell their cars at this average price** and will join the market
12) As the quality of cars on offer deteriorates, the **average price** that consumers will **offer** will fall
13) Thus, more and more cherries will leave and the **market will becoming dominated by Lemons → Adverse selection problem**
14) In an extreme case, **all the cars sold and purchased in the used-car market** are lemons and there is a massing market for cherries
15) This means that consumers who desire to buy 'cherry' cars and 'producers' who desire to sell 'cherry cars' will be unable to do s
16) Socially optimal outcome is to have some sales of good quality cars, but since **better quality cars are driven out of market by low quality products DUE TO ASSYMETRIC INFORMATION,** the **potential net benefit to society from having some good quality products traded is lost** and society's welfare is not maximised

Case 2: Knowledgeable buyers and uninformed sellers (Health insurance)

- Asymmetric information in health insurance results due to how consumers of health insurance know much more about his/her risks and health than an insurance provider does.

Broadly, there are two types of customers. 1. High-cost with high medical expenses and 2. Low-cost with low medical expenses

1) Insurance company is unable to distinguish between these customers but it **has to charge a price for coverage**
2) If the insurance company were to assume half customers were high-risk and the other half were low-risk, it will offer coverage at **a price that is equal to the average cost of providing insurance coverage for both types of customers**
3) But this price would exceed what low-cost customers are willing to pay and they drop out of the market

4) On the other hand, this price is lower than what high-cost customers are prepared to pay → More high-cost customers join the market and **eventually dominate the market**
5) Average cost of insurance coverage will hence rise and thus the avg price they are willing to cover will also increase
6) In extreme case, only **high-cost customers are left** → Market for insurance for low-cost customers **disappears resulting in a missing market**
7) Low-cost customers who desire to buy good and producers who desire to sell good to low-cost customers will be unable to do so.
8) As the socially optimal level is to have some sales of insurance to low-cost customers → The potential net benefit to society from having some low-cost customers insured in lost and hence society's welfare is not maximised thus leading to AIE

6) Asymmetric information leading to Moral Hazard

- Moral hazard is when economic agents **take greater risks/act less carefully than they normally would** because the **uresulting costs will not be borne by them**
- This occurs due to information asymmetry between buyer and seller after transaction has been completed

1) Moral Hazard arises when a contracting party **changes their behaviour as a result of the contract**
2) In Insurance for example, it may induce people to **take greater risks** because they know that the costs of their risks will be borne by the insurance company
3) For instance, if a person buys house insurance for theft, they may become complacent and not lock their doors, close their windows etc and this changes the **risk that insurance company thought they would be taking based on his/her's past history of burglaries**
4) When the insured party undertakes actions **not observed by insurer**, this increases the probability that triggers payment for insurer
5) It will drive up the insurer's cost such that business may no longer be profitable → **Hence there will be insufficient incentive (profits) to offer it for sale and there may thus be a missing market**
6) Moral Hazard creates a lack of trust between potential buyers and sellers, which means **mutually advantageous trade might not take place and there is thus no market for it**
7) Hence there is market failure as the **potential net benefit to society from having these goods and services is lost and society's welfare is not maximised → Thus leading to allocative inefficiency**

7) Supplier-induced demand (got diagram) (Mechanic example)

- If a producer has more information than the consumer, a situation of supplier-induced demand may arise where consumers end up buying more goods/services than what is optimal for them

1) For example, a doctor knows more about the **health** of a patient and what treatments to undertake from then on than a **patient**
2) Lacking expertise, patients will trust the doctors for advice when deciding how much healthcare services to consume
3) Profit-motivated doctors may lead patients to believe that unnecessary healthcare services or tests are required
4) This causes consumers' perceived MPB to be higher than their true MPB
5) Since consumers' demand is based on their perceived MPB, there will be overconsumption…similar explanation to imperfect information

8) Factor immobility

Factor immobility refers to the **inability and/or** unwillingness of FOPs to move between different uses or locations

Two main types: Occupational and Geographical immobility

Occupational immobility: Refers to the inability or/and unwillingness of FOPs to **move between occupations or industries**

Geographical immobility refers to the inability or/and **unwillingness of FOPs to move between geographical areas**

Causes of occupational immobility

1) Lack of skills and knowledge - becoming a doctor requires training and time
2) Barriers imposed - Many jobs necessitate university degrees, and some require more than that. For instance, lawyers have to be called to the bar and doctors in Singapore can only graduate from recognised universities

Causes of geographical labor immobility

1) Family and other social ties - a person may not be willing to relocate and take on a job in another city due to family
2) Costs of living: Quite obvious

Why does factor immobility lead to market failure?

1) Prevents the price mechanism from achieving allocative efficiency because it **results in unemployment and wastage of resources**
2) Economy will be producing on a point **inside the PPC**, hence it is productively inefficient as producing on PPC is a prerequisite for allocative efficiency

9) Public Goods

A public good is a good that is **non-excludable, non-rivalrous and non-rejectable**

National Defense is a public good, flood control systems, street lighting etc

1) National defense is non-excludable as everyone in a country will enjoy defense **regardless of whether they paid for it** as it is impossible to **selectively defend only certain people in a country**
2) National defense is also non-rivalrous because when one person consumes national defense, it does not diminish the availability of of national defense for others in the country
3) It is also non-rejectable, because in a war or in any other circumstance, a person residing in the country will not be able to refuse the safety created even if he wants to
4) Since public goods are by nature non-excludable, it is **impossible or impractical for producers to exclude those who have not paid from consuming the good**.
5) This means that consumers can be **free-riders** that benefit from the good or service without paying for it, therefore no consumer would be willing to pay for public goods
6) As a result, **there is no effective demand in the market since consumers are not willing to pay for public goods**
7) With no demand, producers will be unable to sell their good at any positive price level and thus will not earn revenue to cover their cost of production
8) Hence, when left to the free market, total market failure occurs.
9) The potential net benefit to society from having some level of public goods produced and consumed is lost, resulting in allocative inefficiency
10) Hence, when left to free market, **no production of public goods + total market failure**
11) At zero price, the profit-motivated private producers would not be willing and able to supply the good → Therefore there is 0 possibility in achieving allocative efficiency.
12)

10) Production tax

To correct negative externalities,

1) Government could **impose a per unit output tax equal to the marginal external cost (MEC)** at the socially optimal output level
2) Forcing firms to internalise the externalities when making production decisions
3) The output tax raises the producers' marginal cost of production (MPC), causing supply to fall and a leftward shift in SS
4) Assuming that the government has perfect information and is able to estimate MEC accurately, this production tax will cause quantity demanded to exceed quantity supplied, thus leading to a shortage → M.A>P
5) As the price of the good rises, this disincentivises consumption and Qd falls
6) Henceforth, at the new eqlm output, the welfare loss of area D will be eliminated and AE will be restored

11) Pollution tax

1) A pollution tax is a compulsory levy imposed on producers, where firms have to pay the government a **fixed fee per unit of pollution generated**
2) An example is a tax on Carbon emissions → Singapore carbon tax 2019 to incentivise producers to reduce greenhouse gas emissions
3) A pollution tax works by **creating incentives for firms to reduce emissions** such as by utilizing cleaner production methods or inventing ways to reduce carbon emissions → In their bid to reduce the tax they pay to the government
4) With this tax, rational firms will **choose to lower pollution if MPB**(avoiding having to pay pollution tax) outweighs the MPC (installing equipment to reduce emissions). The tax will cause the MPC (SS) to rise from MPC to MPC' as if these firms choose to pay the tax, their cost of production will rise and as their profits decrease, they will cut back on production causing SS to fall
5) Simultaneously, these firms who undertake ways to cut their emissions (innovation etc) will now cause the extent of **negative externalities** reduced from MEC to MEC'
6) This would result in reduction of welfare loss, resulting in a **more allocative efficient outcome**

12) Subsidies (typically used to address positive externalities)

1) Government could pay firms a per unit output subsidy equal to **MEB at the socially optimal output Q***.
2) The **per unit output production subsidy will lower producers' MPC, causing a rise in supply**
3) The SS (MPC) curve will shift vertically downwards to SS (MPC') by the amount of MEB at Q*, which leads to a fall in the **price of the good/service**
4) This lower price will incentivise consumers to **increase their consumption towards the socially optimal level Q*, thereby internalising the MEB to society**
5) Assuming that the government has perfect information and is able to **estimate the MEB accurately**, the subsidy results in a rise in output from Q to Q*.

6) The new market equilibrium output (where DD=SS) coincides with socially optimal output Q*, causing the welfare loss of area A to be eliminated and allocative efficiency to be restored
7) This could also be used to address factor immobility to deal with employees who have become structurally unemployed

13) Tradeable permits (mix of command and market policy)

1) Government first decides on **the optimal level of pollution that is allowable**
2) Government can either then auction the permits to pollute off or distribute them for free
3) The firms are then free to buy and sell the permits with each other, **with the price of permits being determined in the market by demand and supply forces**
4) Firms that acquire the permits acquire the right to emit the given quantity of pollution
5) Frism do not all face the same costs of reducing pollution → Firms with high clean-up costs would wish to pollute above the quota limits they were assigned
6) They may thus buy permits from other firms with low clean-up costs, as these firms will seek the higher profits they could derive from the revenue generated by the sale of these permits
7) Thus, some of these low-clean up cost firms may also then be incentivised to find cleaner methods of production to reduce their pollution and the overall pollution level so that they can earn even more revenues
8) **Target root cause of problem + provides some measure of guarantee**

10) Policies: https://drive.google.com/drive/u/2/folders/1-HnHn3kv6eU2ynuFssJM5YjE31viQViA
(Please revise for evaluations, free direct provision, direct provision, quotas, total ban and public education)

Cognitive biases

1) Sunk cost fallacy

Sunk costs are costs that have already been incurred by economic agents and cannot be recovered

- This is human's tendency to continue a behaviour irrespective of whether the marginal benefits exceeds the marginal costs due to the time, money and energy already invested into it

2) Loss aversion

- Refers to tendency of people avoiding a loss over making an equivalent or greater gain

3) Saliency bias

- Tendency for people to focus on information that is more prominent and ignore other less prominent but equally relevant pieces of information

Globalisation

1. What are the factors driving globalisation
2. Why do countries trade with each other
3. How does opportunity cost explain specialisation at the international level
4. Does society gain from trade and globalisation?
5. In light of a country's macro goals, how beneficial is it to be globalised?
6. Can protectionism ever be economically justified

Define globalisation: Increased integration of economies around the world through the **movement of goods, services, capital, labour and knowledge** across international borders

1) What are the factors driving for globalisation

Technological advancements

1. Advances in telecommunications technology

- Advancements in satellite technology and telecommunications have reduced **the costs of telecommunication**, allowing businesses to reach and sell their services to **customers overseas**

2. Advancements in transportation technology

- Advancements in shipping have **reduced the cost of transporting manufactured goods around the globe**
- Besides encouraging trade in **finished products**, the reduction in transportation costs has encouraged **product fragmentation** in manufacturing whereby a firm locates different phases of production in different and far-away countries, thereby increasing trade in semi-finished products
- E.g: Marks and Spencer's shirts sold in UK and SG could be sewn in Turkey, using cotton grown in the USA

Increasing liberalisation of trade, capital and labour markets

1. Reduction in trade barriers

- The work by WTO which promotes multilateral trade liberalisation has led to further reductions in trade barriers like tariffs and quotas

- Even as WTO talks stalled in the 2000s, globalisation kept pace as countries formed preferential trade agreements such as NAFTA, and APEC, which led to further reduction of tariffs → increasing volume of international trade

This stems from how policymakers who previously sought to limit trade have come to accept that free trade between countries is mutually beneficial and that **trade provides opportunities for economic growth.**

- More governments thus chose to reduce **protection** of their economies from foreign competition and influence, allowing trade and FDI

Reduction in capital controls

- Many countries have also undertaken structural reform of their financial sector → allowing capital flows in from other countries as they opened their economies to international trade

Reduction in legal barriers restricting movement of labour

- Relaxation of immigration policies have led to movement of labour across borders
- The EU was established in 1993 and it was characterised by freedom of movement of workers, and that it made it mandatory for all member states to consider foreign nationals of other fellow member states as equal to their own citizens with respect to work
- China has also relaxed immigration policy in recent years

2) Theory of comparative advantage:

The theory of CA states that **mutually beneficial trade** between countries is possible whenever one country has a **comparative advantage in producing an item over another country**. This means that it can produce a good/servic at lower opportunity cost in terms of other goods/services sacrificed

Utility of theory of CA

- Helps to explain why countries open their borders to goods and services and **engage in international trade with one another**
- Countries specialize in producing and exporting goods/services in which it has comparative advantage and import goods/services in which they have comparative disadvantage in as this enables them to consume beyond their PPC

Limitations of theory of CA

1) Assumption of perfect factor mobility within country

- A country that engages in international trade based on CA will reduce production of goods/services in which it has comparative disadvantage in, and re-chanell resources towards where it has CA

- This involves moving resources such as labor from sunset industries into sunrise industries → But this is not applicable in practice since resources are not perfectly mobile

- In the case of a country losing CA in agricultural products but gaining CA in manufactured products, labour from the agricultural industry would lack skills needed in manufacturing industry
- This would limit the expansion of the manufacturing industry
- This also means that when a country opens to trade, there will be **structural unemployment due to mismatch of skills**
- EV: In Sg however, got skills retraining programs to manage and ward off the negative impacts

2) Assumption of no transport costs
- Whilst a country may have CA in a good, high transport cost between countries can **offset the gains from trade** and hence discourage international trade
- This is especially significant for land-locked countries like Bhutan and Laos

3) Assumption of no trade barriers
- Country might not be able to exhort as much as it desires due to obstacles to trade imposed by other countries
- Factor immobilitty is a major source of structural unemployment for countries that are open to trade, which leads to pressure on governments to impose trade barriers

3) Terms of trade

Terms of trade index = export **price** index / import **price** index *100
Terminology
Terms of trade would have **improved** if a given quantity of exports can be exchanged for a **higher quantity of imports**

The terms of trade would have **deteriorated/worsened** if a given quantity of exports can be exchanged for a **lower quantity of imports**

If say TOT=100 initially, if TOT index rises, it means that **a smaller quantity of exports** needs to be given up for a **given quantity of imports**

A rise in the index implies that TOT has become more ‘favorable’ whereas a fall in TOT means it has become more ‘unfavorable’

Factors affecting terms of trade

1) Changes in demand and supply for its imports and exports. So if there's a rise in demand for Country A's exports, there will be an upward pressure on prices hence its TOT will improve

2) Currency appreciation. If SGD appreciates, Singapore's exports become more expensive in foreign currencies, and foreigners will reduce their demand → Hence surplus at OP and downward pressure on prices

3) Inflation rates

- Short term inflation could also improve TOT, as exports will becoming more expensive hence export price index increases

4) Factors that determine a country's comparative advantage

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1) Factor endowment

- The quantity and quality of factors of production like land and labor are **unevenly distributed** over different countries, resulting in **differences in opportunity cost of production**

- Land-abundant countries like Australia produce land-intensive products such as agriculture at a lower opportunity cost than land scarce countries like Japan and Singapore.
- Aussie has CA in producing such products whereas latter have comparative disadvantage because the use of land for such land-intensive products would carry a **higher opportunity cost** in terms of the production of other goods foregone
- Labour-abundant countries have comparative advantage in producing labour-intensive products such as clothing and footwear since they produce goods at a lower opportunity cost than developed countries where labour is less abundant

2) Capital accumulation, level of technology and skills of labour force

- The accumulation of physical capital (by domestic investment or tapping on to FDI) and human capital can enable a country to gain comparative advantage in producing a certain good
- Although Japan has very little factor endowments, it produces manufactured products like **automobiles**, as it has CA in producing them due to its capital stock, skilled labour force and superior technology
- Countries with a relatively strong technological and capital base will have a comparative advantage in the production of 'high-tech' products such as electronics and transportation equipment

3) International immobility of resources

- FOPs are generally immobile between countries. Land, like natural resources (diamonds, cobalt etc) and fertile land cannot be transferred between countries
- Labour also faces a degree of immobility due to immigration laws → Differences in culture and language can also deter workers from seeking employment in another country
- Even though capital is generally mobile, government restrictions, political instability and a lack of relevant infrastructure hinders the flow of capital across countries
- Henceforth, due to the difference in abundance of resources between countries, some countries have CA in producing different products

5) Dynamic comparative advantage. CA in a dynamic concept, it can and does change over time

The dynamism of CA can be attributed to both internal and external factors
Internal factor: There may be an erosion of CA due to

- Depletion of factor endowment such as a shrinking labour force.
- E.g: China has CA in production of labour-intensive goods like clothes and shoes. However, as its population ages rapidly, its labour force will eventually shrink
- Thus losing its comparative advantage in labour-intensive products to other countries like Vietnam and Indonesia where labour is abundant, and the workforce is younger

Simultaneously, a country can acquire Comparative advantage through its investment in human capital than can cause CA to change

- E.g: As the government invests more in its citizens through education (myskillsfuture etc), Singapore's labour force becomes more educated and skilled
- Singapore has developed CA in high-tech manufacturing, hence making a significant transformation from previously having CA in labour-intensive basic manufacturing of toys

External factor

- CA may be lost due to rapid technological progress by international competitors
- E.g: As China develops its R&D to improve technology at a faster rate than other countries, it can acquire CA in high-tech manufacturing whereas countries like the USA lose CA in such products

Another reason could be due to **increased capital mobility between countries**

- When developing countries like India opened their borders to FDI in manufacturing to MNCs →India is able to accumulate more capital as well as acquire technology to build up their own manufacturing capabilities
- This enables India to acquire comparative advantage over other more developed economies who previously had comparative advantage

6) Intra-industry trade

- Intra-industy trade is international trade in goods that belong to the same/similar industry. Such trade may be classified as horizontal or vertical

Horizontal intra-industry trade (product differentiation aim)

- E.g: USA imports clothes from China whilst simultaneously exporting clothes to China.

Reasons for horizontal intra-industry trade (not explained by CA)

1. Differentiated products and differences in taste

- There are differences in **tastes and preferences** between people living within a single country and across countries and so consumers seek **variety in the products they consume**
- Consumers from China for instance are willing and able to buy clothes from the USA, and they have a demand for American clothes and vice-versa for the Americans

Another example: Americans would like to enjoy wine that is not just produced domestically but also wine from France, Italy and Armenia. French, Italian and American consumers are no different → Hence they all export wines to one another

2. Economies of scale in intra-industry specialisation

- It is not economically feasible for **each country** to cater to consumers' different preferences because the **unit cost would be too high**. As such, countries focus on a **limited range to take advantage of EOS** and yet cater to the different preferences of their citizens by trading with one another

E.g: German car manufacturers tend to design cars that are technologically advanced and reliable. Italian cars on the other hand, are typically designed to be flamboyant and stylish. Both of these countries' car manufacturers enjoy EOS from specializing in these areas.

- However, there may be German consumers who prefer flamboyant cars like Alfa Romeos, and hence they could buy them from Italy at a price more cheaply compared to if it wAS DOMESTICALLY PRODUCED
- Similarly, Italians who seek reliable advanced cars like Audi and BMW can do the same
- In this way, each country caters to a **minority taste** in the other country

Vertical intra-industry trade (USA exports car components to Mexico, and then imports these cars from Mexico which used US-made components) (SG-China computer example)

Can be explained by CA

1) Countries with low levels of technology will specialise in low-tech production, while countries with high levels of technology will specialise in more advanced manufacturing
2) Labour-intensive component production and assembly will be undertaken in labour-abundant countries **that have comparative advantage in these areas** whilst

skill-intensive and capital-intensive will be perfumed in **human capital and physical capital abundant** countries that have **comparative advantage in these areas**

7) Benefits and costs of free trade

Benefits to **consumers**

1) Increase in welfare from higher levels of consumption

- If you're going to use this..always explain what theory of CA says (mutually beneficial trade between countries…CA above the other..lowest O.C)
- By specialising in producing the product that each has CA in, all countries can enjoy **higher levels of consumption** as each country would get more of the other good by trading than by domestic production
- Henceforth, countries that trade based on CA and mutually beneficial terms of trade enable more wants to be satisfied → Hence increasing society's welfare

2) Increase in welfare from greater variety of consumption

- Intra-industry trade enables countries to enjoy a greater variety of goods from the same industry, enabling wants to be better satisfied
- A tropical country like Thailand has CA in producing mangos. If it wants to consume strawberries, it **could cultivate them but incur very high opportunity cost** due to the less-than-ideal circumstances of growing strawberries.
- On the other hand, trade enables it to import fruit from temperate countries **at lower prices** and also **facilitating greater variety**

3) Increase in welfare from lower domestic prices due to EOS

- Intl trade results in lower costs and hence lower prices because the **larger world market enables a larger scale of production**, hence helping a firm reap IEOS as well as the entire industry reap EEOS.
- This is because exporting firm may reap IEOS as it increases its output and lowers unit costs due to larger world market
- Simultaneously, External EOS can be experienced when expansion of industry's output due to trade brings about → improvement of transportation
- **Especially relevant to SG**: Domestic market is too small for significant EOS to be repealed. If local firms produce only for SG market, unit costs would be very high, whereas due to intl market, EOS reaped is significant and large

4) Increase in welfare from **lower price** and better quality due to increased competition

- International trade increases competition + promotes efficiency as firms are forced to innovate, cut costs and improve **the quality of their products in the face of foreign competition**

- With influx of imports, domestic firms have to be more cost-efficient (productively efficient) and monopoly power may also be reduced and monopolies/oligopolies will be forced to sell at lower prices, produce larger outputs and offer more variety hence improving consumer welfare

Benefits to the economy

Driver of actual growth

1) C.p, if export revenues rises by more than import expenditure, the resulting rise in AD will lead to a multiplied increase in real GDP assuming that there is spare capacity in the economy
- Developing countries in particular may lack sufficient domestic demand for natural resources like **minerals, timber**, resulting in **under-utilisation of resources**
- International trade can be a 'vent for surplus' → and these countries can overcome their domestic demand constraints by exporting these goods → leading to actual growth
- This also raises the level of output, income and employment by leveraging upon previously underutilised resources

2) Driver of potential growth
- Countries that engage in international trade can gain access to modern technology
- Developing countries can **benefit from globalisation by importing more technologically advanced capital equipment →leading to higher productivity and improvements in quality of capital**, hence leading to potential economic growth raising productive capacity in the economy

3) Structural change - shift to production of higher value goods and services
- When country opens itself to trade, complementary services like tourism, shipping, banking & finance could be developed
- This may lead to it undergoing structural change in which they become less dependent on merchandise trade and manufacturing → Hence expanding tertiary sector by diversifying into production of services
- This can lead to **production of higher value-added goods and services**, thereby furthering the goals of economic growth and improving SOL
- Singapore management consultant hub example

Costs to workers and society

1) Structural unemployment due to labour immobility
- With the assumption of perfect factor mobility in domestic markets as per theory of CA, resources will be chanelled from industries that have comparative disadvantage into those with CA
- However, most resources, **especially labour are not so mobile and extensive retraining is required**, which can and will be expensive

- Furthermore, for older workers, they may be reluctant to be retrained and workers may be reluctant to spend on their training → Also consider that retraining will take a long time
- As such, for developed countries like the USA, free trade has led to **structural unN** in ageing industries that **they have lost their CA in** (e.g: Automobiles, steel, textiles) to developing countries like China

2) Increases inequality of income
- With factor immobility within a country, international trade can lead to rising and persisting income inequality with those **employed in exporting sectors enjoying rising income** whilst those in **import-competing** sectors facing falling income or losing their jobs
- If a country like USA liberalises trade, with its CA being in capital and highly skilled labour industries, these skilled workers will see higher earnings since the demand for them will go up thus leading to higher wages, whilst those in lower-skilled labour industries will face a fall in their demand thus reducing their wages
- Income distribution becomes more unequal

3) Dependence on other countries leads to macro instability
- Economies which are dependent on external demand for growth are vulnerable to external shocks.
- If external demand falls due to recession in **other countries**, it will slow down the growth of another country as this other country export growth rate will decrease or could even shrink, leading to negative actual growth and more demand-deficient unemployment through multiplier effect
- Countries like Singapore (open economies) have also become more susceptible to imported inflation
- Extreme weather due to climate change along with rising demand from developing countries due to rapidly growing population has also caused food prices to spike
- Regional conflicts like Russia-Ukraine war has also disrupted supply chain for neon, leading to imported inflation in Singapore due to higher crude oil prices and commodity prices

4) Exposure to unfair competition
- Dumping may occur when a country opens up its markets to foreign competition, which is when foreign producers sell their products at prices **below the marginal cost of production.** In many instances the government provides subsidies to such firms

8) Benefits of free flow of capital (Liberalisation of capital markets can help increase the level of investment in a country thereby generating growth)

Long-term capital flows:

- For developing countries that have liberalised their capital markets and experienced flow of FDI like China and India → FDI has led to increase in 'I' component of AD which has led to actual growth and enabled employment of large number of workers
- MNCs also bring in technology and training which increases the productive capacity of the country receiving investment, thereby generating **potential growth**
- E.g: When Mitsubishi builds a factory in Thailand, they bring with them car production techniques which increase productivity levels.
- This will lead to economic growth in Thailand

Short-term capital flows

- International capital inflows in the form of hot money also increases the supply of loanable funds, thereby lowering interest rates and bringing about **a higher level of investment for the country**.
- This then leads toa actual growth

Eval: This is especially important for developing countries where low income leads to low saving and hence low investment → which in turn limits growth

Costs of free flow of capital

Impact on forex

- Long-term capital flows tend to be stable and thus have a positive impact on a country's long-term growth, short-term capital flows are often volatile
- This is really just about AFC

- When a country that operates on a **managed float** e/r system persistently runs a BOT deficit, the central bank has to draw down its foreign reserves to **prop up the xchange rate to prevent it from depreciating beyond the lower e/r band**
- When investors speculate that the central bank is running out of reserves and will be unable to prop up the value, they may speculate against the currency and redeem the currency (Baht in this case) for other currencies, increasing the supply in the forex market and causing further downward pressure
- This will in turn cause other countries to lose their export competitiveness because Thailand can produce it cheaper
- This in turn caused a loss of other country's currency → thus leading to more speculative attacks.

- THIS IS WHAT HAPPENED IN 1997 AFC which led to the contagion effect → Erosion of confidence in neighbouring countries led to poor economic outlook for Singapore, firms invested less due to lower EROR, banks gave credit on stricter terms thus leading to fall in 'C' and 'I' hence negative actual growth and rise in unemployment

Moreover, free flow of capital also has negative impacts on employment
In developed countries, firms may relocate or off-shore production overseas where wage rates are lower (DBS bank tech services India. Citibank call centres in Philippines)

- This results in loss of jobs amongst lower income group and middle class in developed countries → Structural unN

Developing countries may also be negatively impacted

- Increased competition brought on by globalisation has motivated firms in developing countries to also adopt **improved technology** that can lower their Ucop → Leads to structural unemployment as workers lacking the skills to work with new technology will be retrenched.

9) Benefits of free flow of labour

- Recipients of migrant labour can meet labour shortages in certain industries, like in developed countries migrant labour can help address labour shortage in construction, agriculture industries
- This could also lead to lower unit labour costs and increase horizontal AS.. which can promote growth and keep cost-push inflation at bay

Inflow of foreign labour is very important in addressing shrinking and ageing labour force like in Singapore

- For labour-scarce countries, opening up of labour markets has enabled them to **increase the size of the labour force** due to huge influx of **skilled and semi-skilled foreign labour**
- Inflow of foreign talent also brings about 'brain gain' → Improve quality of labour in the country and thus there will be potential growth
- This enables economy to generate potential growth

Costs of free flow of labour

- For developing countries, emigration of highly skilled labour leads to brain drain → Leads to shortage of skilled labour in developing countries, thus negatively affecting their potential growth

- Fall in qty of labour and quality of that labour negatively impacts productive capacity of developing countries

EVAL: HOWEVER, if these migrants return to their home countries, then returning migrants could bring back transfer of foreign technology and skills leading to expansion of country's productive capacity

Globalisation and its impact on inclusive growth

- Really need to emphasise how capital owners earn more…structural unN…those in exporting sectors earn more yada yada yada hence

Globalisation and its impact on sustainable growth

Environmental destruction

1) Accelerated rate of Greenhouse gas emissions
    - Globalisation has increased demand for road, sea and air transport which are major sources of greenhouse gas emissions
    - Increased global competition brought about by trade has also encouraged firms from developed countries to move production to developing countries where unit costs are lower due to more lenient environmental laws and export from there

- Globalisation has also encouraged deforestation which contributes to global warming
- This is because the export of agricultural products has meant the clearing of forests for farmland → which contributes to global warming because less forests will now absorb carbon dioxide → leads to rising temperatures which can then cause more natural disasters

2) Impoverishing biodiversity

- Globalisation has also caused extinction of some animal and plant species
- Growth fostered by globalisation has led to more urbanisation, farming and mining →Destruction of forests in Borneo which has caused extinction of bird species and plant species
- Globalisation also leads to greater exploitation of natural resources, like in Congo for instance for its cobalt → Inability to attain sustainable economic growth as future generations will be unable to benefit from having some of these natural resources

Tarrifs

Reasons why tariffs are employed NOT PROTECTIONISM OVERALL THATS SEPARATE

1) Aim to restrict imports to protect domestic industries from foreign competition
2) Raise revenue to finance activities of government

Import tariff explanation (note that small country assumption always applies, even for China/USA)

1. Assuming that the country is **small and is a price taker**,
2. The foreign industry is willing to supply as large a quantity as the small country wants to buy at **the world price**
3. After the imposition of the tariff, the **market price rises by the full amount of the tariff to** Pt **since this is a small country that cannot influence world price**
4. At this new price, domestic production will increase to xyz. Imports are reduced to AB.
5. Consequently, consumer surplus will fall to area .dac;'xz and domestic producers' surplus will increase adx
6. Remember the different areas and what they all actually mean (especially net welfare loss etc)

Non-tarrif method: Quotas

1) An import quota refers to a restriction on the quantity of a good that can be imported during a given time period
2) One way of enforcing an import quota is **to require importers to obtain a license or permit for EACH good they bring into the country**

Analysis

1) Assuming that the country is a price taker, foreign industry is willing to supply as large a quantity as the small country wants to buy at the world price,
2) Without restrictions on trade in the form of the quota, consumers would pay the **world price** for this good and xy units are imported
3) Now, the government imposes a quota on the number of units of this good that can be imported
4) With this quota, domestic prive rises above the world price to Pt

Wah shaggy u really u just need to look at the diagram to understand this in full

Exchange control can be in the form of depreciation → Beggar thy neighbour effect

Why then do countries adopt protectionist measures?

1. To stimulate economic growth in times of recession

- An imposition of import tariffs on a **wide range of goods and services** will cause households to switch away from imports to domestic goods, causing the AD to rise
- The resulting rise in national output will **generate economic growth and jobs for the unemployed**

BUT.. these leads to the forementioned 'beggar thy neighbour effect'

- When Russia and Ecuador imposed import tariffs → Its trade partners faced a loss in their export revenues, thus reducing their output and income in turn
- This could then be self-defeating → The fall in output and income will result in **fall in demand for exports of the DOMESTIC COUNTRY that previously IMPOSED the tarrifs**
- This fall in domestic exports will then cause a fall in aggregate demand leading to a decline in the domestic output and income, thereby reversing initial gains in employment

THIS also may invite retaliation from other countries, and BOTH countries will suffer

2) To reduce structural unemployment

- Import-competing industries that have comparative disadvantage will face **falling demand** as citizens turn towards **relatively cheaper imports**
- These industries will lay off workers, resulting in **structural unemployment as they are unable to seek jobs in sunrise industries**

The use of tariffs/protectionist measures can **slow down the decline of the industry**, providing time for **labour to be re-trained and re-channelled to other industries**, reducing incidence of structural unemployment

NONETHELESS, this may lead to a lengthening of the restructuring process depriving growing industries from valuable resources → Hence this should only be a short run measure

3) To reduce income inequality

- One response is to protect import competing sectors and place tariffs on imports in those countries
- But THERE still exist alternative measures..like transfer payments

4) Import-substitute industrailaization

- For industries in a country that are in their infancy and have **potential CA**, they are still small and have yet to gain sufficient EOS
- Without protection, they will not survive against competition from abroad
- Protection will allow them to expand and become more efficient, and these protections can gradually be lifted once able to compete internationally

EXAMPLE: Massive subsidies given to Airbus by the EU to compete with Boeing → Subsidies enabled Airbus to create a full product line and gain 50% share of large aircraft sales and 60% of global order book

EVAL: HOWEVER, they may become complacent and remain uncompetitive and inefficient and hence CA may not materialise
Furthermore, once protection is given it is hard to remove as the firms concerned would lobby against it

5) To correct trade deficit
- By imposing quotas on imports, expenditure of imports will fall hence potentially correcting the trade deficit

EVAL: Nonetheless, this is a quick-fix issue and will not solve underlying problems leading to the trade deficit like loss of CA or poor quality of exports
- Moreover, subject to retaliation from other countries

6) To counter dumping
- Necessary to protect domestic industries and producers from being wiped out by unfair competition

Macro variables and models

Explanation of multiplier effect
1) **Assuming that the economy is initially operating with spare capacity***,
2) An increase in AD due to {State autonomous change} would lead to AD exceeding the current level of output
3) As firms draw on their inventories to meet the extra demand, they will increase their production to meet the **planned levels of inventories**
4) Firms will hire more FOPS such as labour to increase production, and national output increases
5) As households earn more factor income for their factor services, they spend a portion of this additional income on domestic goods and services, causing a **rise in induced consumption and thus AD**.

6) With this increase in spending, this creates **another round of unplanned fall in inventories** in other industries
7) And the process repeats itself whereby households will spend part of their income on consumption of domestic goods and services,
8) And the remaining will go to savings, taxes and imports
9) This process of increase in induced consumption of domestic goods/services and increase in output and income will continue until total withdrawals = total injections again and a new equilibrium national income is achieved
10) Hence, the initial increase in AD would thus have led to a multiplied increase in national income due to the multiplier effect, assuming spare capacity in the economy

Economic growth

1a) Benefits of positive and high economic growth

Household's POV

a) Higher SOL over time

- Assuming actual economic growth exceeds population growth, it will lead to a higher real GDP per capita.
- This can lead to higher levels of consumption of goods and services, translating to **higher material SOL**
- E.g: Expanding national output (and constant population) means higher income per capita hence more able to consume consumer goods leading to higher msol

Economic growth can also mean an **increase in government tax revenue** collected through corporate tax, personal income tax and sales tax

- For example, as the economy grows and income rises, the **same** direct taxes will yield higher tax revenue for the government
- Rising income induces increased consumption thus leading to more revenue from sales tax for the government
- **This increase in revenue enables governments to increase spending on public goods(flood control)**, goods with positive externalities like education and public amenities, which will **increase material standard of living**
- Increase in government revenue will also enable governments to increase **spending on cleaning up the environment** which will increase the **non-material** standard of living of residents in the country

Government's POV

Alleviate other Macro problems

- Actual growth helps to reduce **demand-deficient unemployment**

- If the economic growth is driven by a **rise in AD**, there will be a rise in **real output** assuming the economy is operating with spare capacity. When output increases, DD-deficient unN will fall as firms hire more workers to produce the higher output

- **Potential** growth is important for living standards to rise **over time** without compromising the macroeconomic goal of GPL stability.
- This is because as AD continues to rise, the economy will eventually reach the full employment output.
- **Without a growth in productive capacity**, further rises in AD will only cause **demand-pull inflation** without a corresponding increase **in real output**, and this higher induced GPL will in turn reduce the purchasing power of citizens

c) Redistributive benefits
- When real national income is unchanged, a redistribution of income to improve equality of distribution would **entail making one group better off while making another worse off**
- On the other hand, if real national incomes rise, **EVEN** with a constant tax rate, the government can redistribute more income from **the rich to the poor without the rich losing in absolute terms**
- As people's incomes rise, they are also likely to pay more taxes → and these extra revenues can be used to alleviate poverty
- Henceforth, with economic growth and the corresponding higher tax revenues, the **scope for helping the poor is much greater**

d) Greater ability to address environmental problems
- Increases in government revenue that arises from economic growth provides governments with the funds they need to address pollution and destruction of the natural environment
- Moreover, when people become more affluent, they also tend to be more concerned about living in a clean environment. Henceforth, negative externalities generated due to environmental pollution can be mitigated

1b) Costs of positive and high economic growth rates
Consumer's POV
a) Lowering of non-material SOL
- Economic growth can come with longer working hours and higher stress levels
- In addition, higher economic growth could be accompanied by higher rate of environmental degradation and increased levels of pollution since profit-maximising firms disregard the externalities of their production activities
- Hence, non-material SOL of population may fall

1b) Lowering of current material living standards
- To ACHIEVE sustained economic growth where there is BOTH ACTUAL AND POTENTIAL GROWTH,

- There will be a need for **adequate investment** such that there is an expansion in the country's capital stock where the capital accumulation exceeds the capital depreciation
- These investments are funded by savings → Therefore, the opportunity cost of growth in a closed economy is **less consumption in the current period**

Government's POV
c) Trade-off with other Macro goals
→ Rise in structural unN

- Structural unN happens when there is a mismatch between the skills possessed by job seekers and those demanded by firms. It stems from structural changes and occupational immobility
- Economic growth can entail changes in production, both in terms of the types of goods/services produced and techniques and skills used
- The more rapid the rate of economic growth is, **the more rapid structural change may occur**
- If the skills and knowledge of the labour force does not improve **as quickly** as technological advancements, people may find that their skills have become redundant as their jobs are replaced by machines or made redundant, resulting in structural unN, **increasing the level of unemployment in the economy**

Deterioration of BOT

- When an economy grows, the rise in national income will bring about higher consumption of all goods and services, including imports. Assuming that export revenue remains constant, the higher import expenditure will worsen the country's BOT

Greater income inequality

- **IF the cause** of higher economic growth is due to incentives provided to specific sectors of the economy e.g: cuts in higher rates of personal/income tax,
- People working in these sectors will get wealthier as they will see a faster rise in their disposable income OR profits, WITHOUT a corresponding transfer of income to lower-income workers hence there will be NO benefits trickling down to lower wage workers → Resulting in greater income inequality between workers in different sectors.

Sustainable economic growth: Sustainable economic growth refers to a rate of growth that is **sustained without creating other significant socio-economic issues**, especially for future generations

Why do governments pursue sustainable economic growth?

- Economic growth that stems from the export of commodities like crude oil, cobalt, diamonds, and other natural resources that occurs at a rapid pace in which these resources are exploited will diminish the availability of these resources for future generations to consume as they are non-renewable by nature

- As a result of this, the degradation of the environment will in turn lead to future generations having less factor inputs available for production, and they may have to switch over to less efficiency and more costly methods
- For instance, if oil-exporting countries like Saudi Arabia and Venezuela were to exploit as much of their crude oil resources as possible, their future generations may not be able to have any access to crude oil and will be forced to use alternative energy sources, like nucelar energy which may lead to higher energy costs for all firms, thus Ucop and AS…..
- Moreover, the diminishing availability of these resources would also lead to a shift in vertical AS due to negative potential growth as the economy will have less resources to use

Moreover, non-material SOL effects….externalities third parties….pollution….medical costs…

Why do governments pursue inclusive economic growth?

1) Just because there is economic growth, it may not translate to higher living standards for all citizens
- Therfore, as governments seek to improve living standards for all citizens, inclusive economic growth such as adopting progressive tax policies helps governments reduce income inequality…etc

2) Excessive income inequality, if not addressed, can reduce both actual and potential growth over the long time

Although it is true that **SOME** income inequality could lead to more growth → Because rising income inN typically derives from profits rising faster than wages BUT NOTE that THESE higher profits incentivise innovation **which leads to economic growth**. The wealthy **also save more due to higher propensity to save hence increased supply of loanable funds in the economy**

NONETHEELSS, excessive income inequality is bad for economic growth

- In countries like the USA where consumption is the **main driver** of growth such as in the US, higher income inequality would **slow down actual growth** because the marginal propensity to consume **is lower** for higher income earners as they are more likely to save due to having their needs fulfilled
- As a result, the size of the multiplier **k will be smaller**, leading to a smaller multiplied rise in real GDP and hence a slowdown in actual growth when AD rises
- If the income inequality is the result of lower-income workers feeling like they are unable to transit to the **middle class**, the **growth in consumption slows** and there will be a **slower shift of AD to the right**, resulting in slower actual growth

Moreover, excessive income inequality also leads to **political and social instability** → Lowers firms' EROR → Thereby leading to falls in investment expenditure

- This causes a fall in vertical AS assuming that (capital depreciation exceeds capital accumulation as a result) and hence there wcould be negative actual growth

Unemployment

Consequences of unemployment

POV of households

1) **<u>Loss of income</u>**

- Loss of income to the unemployed (which is equal to the difference between their previous wage and any unemployment benefits provided by the government) →lowers purchasing power and hence these now-unemployed workers consume less goods and services → Leading to lower material standard of living

- Rising unemployment also increases anxiety for residents in the country as rising unemployment can lead to higher crime rates, addiction rates, etc → worsenes sense of peace of mind thus leading to lower non-material SOL

2) **<u>Firms</u>**

- Lower consumption due to loss of income or worsening of consumer confidence will lead to lower production and sales of goods and services → leading to lower revenue for frims

3) Government

- Lose tax revenue since unemployed **<u>do not pay income taxes</u>** and taxes from other forms like GST or VAT will also decrease since the unemployed spend less
- Incur admin costs due to running of welfare offices → Government spending increases as more unemployment benefits are given out → **<u>Opportunity costs + worsening government budget</u>**

4) Economy

- The economy suffers from **<u>productive inefficiency</u>**, it wil l be producing within the PPC curve → This will prevent society's welfare from being maximized as it will be unable to attain allocative efficiency of which the prerequisite is productive efficiency
- Moreover, the economy will not be producing a combination of goods and services that can better fulfill its citizen's wants and needs →Thus consumers can lose from having less consumer goods consumed and the overall economy will lose from having less capital goods that could be used to produce more consumer goods in the next time period
- Also, rising unN may lead to **<u>poor business expectations</u>**, causing a **<u>fall in investments by firms</u>**

- Downward multiplier effect → slows down vertical AS growth…

Hysteresis unemployment affect

- Assuming that this unemployment in prolonged, many workers may feel demoralised because of their inability to obtain a job and they may hence leave the workforce altogether → Thus reducing the quantity of labour available in the market thus leading to negative potential growth

- Moreover, if this unemployment is prolonged, these workers may be out of touch with their skills. E.g: A computer programmer who has not worked on programming projects for an extended period of time may forget how to utilise the programming languages he had previously learnt again → This will lead to greater inefficiencies in that these workers now require more input per unit output → Thus leading to higher Ucop and horizontal AS would fall

Inflation

Demand-pull inflation analysis

1) The rise in AD from AD1 to AD2 due to ….will cause AD to exceed the planned expenditure in the economy, causing firms to **experience an unexpected fall in inventories and they will respond to this fall by expanding production**
2) **Assuming that the economy is initially operating near full capacity**, when these firms increase output, they will operate even closer to full capacity and production will become **less efficient**
3) Firms will be forced to use resources that are **less and less suitable for production**
4) Thus, increasingly larger amounts of labour and other inputs are required **per additional unit of output produced**
5) This increases firms' unit cost of production, and as a result the minimum price they would be willing and able to sell a good for will increase
6) Hence, **they will pass on these higher costs to consumers in the form of higher prices** → Thus leading to **demand-pull inflation**

If question is specifically on inflation (TO SHOW THAT IT IS SUSTAINED)

7) When AD rises further, with the increased scarcity of resources, the **GPL is further pulled upwards** with limited increase in national output
8) Once Yf is reached, continued increases in AD will **lead to increases in GPL only**

Cost-push inflation analysis

1) Just make the link (if crude oil prices increase → then the cost of energy will increase and as energy in the form of electricity is used by virtually all firms in the economy → Firms' ucop will increase thus AS effects etc)

Cost-push inflation analysis

Consumers

- Inflation causes the **cost of living for households to increase**
- Cost of living is defined as the cost of basket of goods and services that yield a certain material standard of living
- It rises with the GPL → When there is inflation, households will have to spend more money to maintain the same level of material living standards

Whilst it may increase Cost of living, **it MAY NOT necessarily worsen their material standard of living → THAT depends on** rate of change in real income % = rate of change of nominal income % - inflation rate %
If there is a fall in households' real income → Their purchasing power will decrease and hence they will be less willing and able to consume goods and services → Worsening their material SOL

If there is still a rise in household's real incomes, they will consume more hence increase in material SOL BUT it may not be significant since it is **partially offset by a higher cost of living**

Eval: Households who earn variable income and own assets **that rise in value with inflation** will be **LESS** negatively affected than those with fixed or no income (like pensioners)

Producer's perspective

- Inflation affects firms' profit margins → BUT the effect of this inflation **depends on whether the cause is demand-pull or supply-side**

If inflation is demand-pull, profit margins tend to increase **because prices of goods and services tend to rise faster than Ucop.** This is because in the short run, factor input prices tend to be unchanged because **they are fixed by long term contracts**

If inflation is cost-push, firms' profit margins would **likely decrease**

- When the rise in UCOP is **NOT** due to increases in AD, firms will seek to pass on the rise in unit cost to consumers by raising prices
- HOWEVER, firms will be unable to pass the increase in unit cost fully to consumers
- Since firms absorb part of the increase in unit cost, this will result in declining profit margins

Government's perspective (macro and micro goals)

Effects on **Economic growth and unemployment**

1) Impact on Consumption and saving

- Inflation **causes the real value of money to fall** → which affects money as a store of value
- If **inflation is low and stable**, money is stil a **good store of value** and saving is not discouraged
- If **inflation is high and rising**, money becomes a poor store of value
- Consumption is encouraged and saving discouraged **since the real value fo savings is falling rapidly**
- THIS IS BECAUSE with prices rising rapidly, people **would want to spend their money as quickly as possible before the value plummets even further**
- This increase in spending induces further inflation
- This fall in saving and rise in spending also **reduces funds available for investment as the supply of loanable funds will decrease**, and interest rates will rise as a response

2) Investment

- When **inflation is low and stable**, investment is encouraged assuming nominal interest rate remains unchanged
- This is because inflation reduces the **real interest rate** and hence reduces the **real cost of borrowing by firms for investment**

Real interest rate = nominal interest rate - inflation rate

- **SIMULTANEOUSLY**, a low and stable inflation rate **provides more certainty for firms when making investment decisions**, because firms can take cues from the price mechanism **in determining whether there is growing demand for their products** as opposed to prices merely increasing due to inflation
- With **more certainty,** firms' **EROR** on investment projects increases hence they will be **more willing to invest**

→ Thus leading to higher 'I' and thus AD will rise in the economy, leading to increase in real national output and reduction in unN

- Also, the increase in investment leads to **accumulation of capital goods,** assuming the rate of capital accumulation exceeds capital depreciation rate .. capital stock will increase…productive capacity thus AS uk alr

HENCEFORTH, PRICE STABILITY provides the basis for sustained economic growth

However, when **inflation is high and rising**, investment will be discouraged.

- High inflation **worsens firms' EROR** as inflation distorts price signals and thus discourages investment

The impact on investment ALSO depends on the **cause of inflation**

- IF this inflation is **demand-pull** in nature, the prices of goods and services will rise faster than unit costs → Thus leading to higher profit margins
- This will increase **the expected rate of return on investment** and lead to higher investments by firms → which contributes to sustained economic growth

If inflation is cost-push,

- Firms hold back investment (both domestic and foreign) due to lower profit margins
- Reduction in AD leads to decreases in AD and slower increases in AS over time
- IF this **remains persistent** and the causes are **local in origin like shrinking labour force → Higher wages assuming productivity remains constant**,
- Both domestic and foreign firms may relocate production (**divestment)**

Impact on BOT and forex rate

- Impact on BOT depends on how its inflation rate compares with that in other countries

1) Assuming that there is no inflation in other countries, inflation in Singapore would cause Singapore's **exports to become less price competitive**
2) This would cause a fall in quantity demanded for Singaporean exports by foreigners
3) Assuming that the demand for Singapore's exports is price elastic, the increase in GPL will lead to a **more than proportionate fall in quantity demanded for the exports**, such that the fall in export revenue due to lower quantity demanded will exceed the rise in export revenue due to higher price, hence cousin a fall in export revenue
4) Simultaneously, inflation in Singapore would cause **domestically produced goods** to become **RELATIVELY** more expensive than imports
5) As a result, Singaporeans will switch over from domestically produced goods to imports, causing the demand for imports to increase and hence causing import expenditure to rise

External value of currency

- When effect 4 and 5 happens, local consumers **will demand more foreign currencies to buy imports** which will increase the **supply of the home currency** in the forex market →
- Moreover, as exports become **less price competitive** which causes the **more than proportionate fall in Qd** assuming PED>1, the fall in export

revenue will also cause a **fall in foreigners' demand for the home currency**

- Thus leading to downward pressure on **forex rate** and the domestic currency will depreciate

MICRO goals
Equity

- **Unanticipated** inflation results in an arbitrary redistribution of income. Some will lose some will gain, and this depends on 1) Whether the person is fixed income or variable income earner or 2) lender or borrower

a) Fixed vs variable income earners

- Fixed income earners **lose** during inflation because their incomes are fixed in nominal terms and hence **their real incomes will fall** when there is inflation

- Variable income earners **may gain during inflation**, provided their **nominal income** increases faster than the inflation rate, which **increases their real wages**

Remember this formula,
% Change in wage rate = $Change in nominal wage rate - inflation rate

b) Savers vs lenders

- Borrowers gain and lenders lose when there is inflation **because inflation causes the real interest and the real value of the amount borrowed to fall**

- This is because inflation **reduces the real value of money**
- As a result, over time, if inflation occurs during the loan period, the **real value of the debt and interest paid** by the borrower will be lower than expected

Remember this formula: Real interest rate = Nominal interest rate - inflation rate

IF the inflation rate exceeds the nominal interest rate, the **real interest** rate will have a negative value → THIS MEANS that the **real value of the amount received by /lender WOULD BE LOWER** than the real value of debt

c) Governments vs taxpayers

- Inflation causes government to gain and taxpayers to lose
- When there is inflation, wage-price spiral could set in → Assuming progressive tax structure, **rising wages of taxpayers push them into higher marginal tax brackets 'bracket creep concept'**
- As a result, **they pay a larger fraction of their nominal income in taxes EVEN THOUGH THEIR REAL INCOMES MAY NOT HAVE INCREASED**
- Government benefits due to higher tax revenue but taxpayers face **falling real disposable incomes**

d) Impact on efficiency

Distortion of price mechanism

- **Price provides important signals to producers and consumers** in their production or consumption decisions
- When there is inflation, **it becomes difficult for a producer to distinguish whether there is a change in relative prices DUE TO AN ACTUAL INCREASE IN DEMAND** or due to inflation where prices of most goods are rising
- **IF this producer** mistakes the unanticipated rise in prices due to an **increase in demand for his product**, he may allocate more resources towards its production, leading to **misallocation of resources**
- Hence inflation distorts price signals

Wastages - MENU COSTS

- Cost of changing prices quite standard la

Deflation

- Deflation **decreases the cost of living for households**

How does it affect households' msol?

- Assuming no change in households' nominal income, deflation results in a rise in **households' real income**
- This results in an improvement in their **material standard of living** as consumers are able to purchase more goods and services for consumption due to the fall in prices

In **demand-side deflation**,

- Nominal income remains unchanged **only in the short-run** (when wage contracts are still in place) or if the household is a **fixed income earner**
- In the long run, the household's nominal income should eventually fall (when these wage costs expire).
- The impact of deflation thus depends on the **rate of decrease of nominal income vs the rate of decrease of GPL**

This is because in the long run, **deflation is likely to decrease AD** because households hold back **consumption in anticipation of further decreases in prices**, the resulting fall in national output would translate to **decreases in households' real income** and hence decrease in material living standards for the population

In **Supply-side deflation** however,

- Deflation would likely lead to a **rise in household's real income** assuming nominal income remains unchanged (same effect as DD-side in SR)
- In the long run however, nominal income like wages **will be rising because** firms will bid up wage rates **to hire more workers to increase output due to the downward movement along AD which causes an increase in national income due to the real wealth, interest rate and international substitution effect**
- While this WILL slow down the **fall in Ucop that actually caused the deflation**, as long as GPL is falling and household's nominal income is **either** constant or rising, households' real income will be rising, leading to rise in material living standards

Produer's perspectives

- Deflation affects firms' profit margins

IF **deflation is due to falling AD**, profit margins tend to fall because **prices of goods and services** are likely to be falling faster than the firms' costs of production

IF deflation is due to **rising AS**, profit margins are likely to **rise** because the decline in price of goods and services is likely to be less than the decline in costs of production since these firms are unlikely to **fully pass on the lower costs of production**

Government's perspectives and effects on Macro goals

On Economic growth and unemployment

FOR **DD-SIDE DEFLATION**

a) Fall in consumption/rise in saving

- When there is demand-side deflation, **households tend to hold back consumption in anticipation of further decreases in prices → Causes consumption to fall**

Moreover, the **fall in asset prices in deflation** could create a **negative wealth effect**, in which decreases in value of assets worsened consumer confidence leading to decreases in 'C' component of AD

MOST analytical point: The **fall in GPL** leads to an increase **in the real interest rate** → Thus inducing lower investment and higher saving by effects you should already now- → 'Fall in C and I'

b) Fall in 'I'

- Firms will be discouraged from investing since **cost of borrowing** rises (i/r effect) → MOREOVER, if deflation encourages consumers to hold back 'C' → Firms' EROR would fall which would discourage investment

This fall in consumption and investment spending thus AD leads to **further decreases in GPL and output** → Can lead to negative actual growth and negative potential growth

FOR SS-SIDE DEFLATION

- If the fall in GPL is SS-led and sustained → AD will rise through the real wealth, interest rate and international substitution effects

BUT..SS-side deflation would also **lead to decreases in real interest rate → Which discourages consumption and investment**

- BUT it still would nonetheless increase interest rates..and hence AD could fall BUT **in case of supply-side deflation**, consumer and business sentiments are **likely to be buoyant** and hence, AD may not actually fall

BOT impact
Pretty much just the opposite of the one on inflation

Same effects on equity except opposite

a) Fixed income earners gain during inflation
b) Lenders gain during deflation because deflation increases the interest rate

Balance of trade

BOT explanations

To increase AD

1) When MAS depreciates SGD (within its band or by adjusting the band), Singaporean exports **become cheaper in foreign currency**
2) As foreigners find Singaporean exports cheaper in their currencies, they will **increase their demand for Singapore exports, causing the 'X' component of AD to rise**
3) Singaporeans however will decrease their quantity demanded from foreign imports, because they **will find foreign imports more expensive in SGD**
4) Assuming that the demand for foreign imports in Singapore is price elastic (|PEDm|>1), there will be a more than proportionate fall in quantity demanded for exports, such that the **fall in import expenditure due to lower quantity demanded will exceed the gain in import expenditure due to the higher price**, hence causing import expenditure to fall
5) If |PEDm|<1 however, import expenditure will rise. However, **so long as the Marshal-Lerner condition holds**, ***where |PEDx +PEDm|>1,** the depreciation of SGD will improve the balance of trade **and cause AD to rise**

To curb inflation

1)

Consequences of BOT deficit or Surplus

1. Consumers (BOT imbalances may have an impact on consumers' material SOL)

Impact of BOT deficit on living standards depends on the

1) Cause of the deficit: Whether it is **consumer goods or capital goods**
2) Time period: SR vs LR

IF BOT deficit is due to greater levels of consumption of **imported *consume goods and services**, in the SR, consumers will benefit as there is **greater variety** and a higher level of consumption of goods and services, which brings a **higher material standard of living in the short run**

In the **long term**, the higher SOL enjoyed cannot be sustained, and this **CURRENT** BOT deficit will lead to lower SOL **for future generations**

- This is because if import expenditure > export revenues, the **excess spending** will need to be paid for by **borrowing from foreign lenders**
- Countries that run BOT deficits are **net borrowers**
- The future generation would then have to sacrifice their consumption to repay this past debt, by **cutting back on THEIR consumption of imports so that** they will have sufficient export revenues to pay back the country's foreign debts. Thus, living standards fall in the future

If a country incurs a BOT deficit from **increasing its import of capital goods**, it sacrifices a **rise** in living standards in the **current period** BECAUSE THESE LOANS could have been directed towards importing **more consumer goods**

- However, the rise in **import of capital stock** will increase the economy's productive capacity and assuming the imported capital goods increases **factor productivity**, improve the **price competitiveness** of its goods/services in the world market.
- This will boost the quantity demanded for exports and generate economic growth in the future
- (This one can consider AS rise vertical and horizontal…and then net export rise **due to fall in GPL** as movement along AD (intl substitution effect)
- This rise in national output **means that consumers' material SOL rises in the LR**

- MOREOVER, the **expansion in productive capacity** means that the country **can gain price competitiveness** in the world markets,

- Enabling it to export more and earn more export revenue and it will thus have the foreign currency it needs **to repay the foreign loans → NO NEED to cut back imports in the future**

BOT surplus impact

- As a BOT surplus means that the country's export revenue exceeds its import spending → This surplus could have been used **to finance more imports to the country, enabling its people to consume more**
- Thus, households experience a **lower living standard than they should in the SHORT RUN**
- HOWEVER, a BOT surplus means that a country is a net lender → As such, over time, on top of getting paid back the principal sum that it lent, it will be **receiving interest payments from abroad which adds to the country's gross national income** → Raises citizens' purchasing power and hence material living standard improve in the long run

Impact on firms (BOT IMBALANCE AFFECTS COUNTRY's FOREX rate → which may then impact revenue and cost for firms)

Impact of worsening BOT

- A worsening of the BOT will lead to **to supply of currency rising relative to demand**, → causing a depreciation of currency **in a floating e/r system**

- This will improve the **price competitiveness ,of domestic firms' products** against foreign products as exports become cheaper in foreign currency, and foreign products become more expensive in domestic currency
- HOWEVER, it also makes **imported inputs more expensive in domestic currency terms, which would raise cost of production and raise profits for domestic firms that import inputs**

Improving BOT

- An improving BOT means supply of currency is falling **relative** to demand, causing the country's currency to appreciate in a floating exchange rate system

- This **worsens the price competitiveness of domestic firms' products vs foreign products**, as domestic products become more expensive in **foreign**

currency terms, and foreign products become cheaper in domestic currency terms.
- HOWEVER, it also makes **imported inputs cheaper** in domestic currency terms, which would lower costs of production and potentially increase profits

For managed float countries,
- A BOT imbalance may cause **uncertainty in stability of currency**, thus affecting **firms' expectations and planning**

A country **under managed float** constantly running a BOT deficit would have to have its central bank **intervene** by using foreign reserves to buy back its own currency
- Since these foreign reserves are **finite**, this situation might invite **speculation against the currency as seen in the 1997 AFC**

- MNCs necessitate a stable currency to make **investment decisions**
- Fluctuations in currency caused by **BOT imbalance could cause** greater uncertainty → and currency changes makes it difficult for a **firm to make production and investment decisions**

Governments
BOT's imbalance affects other macro goals of
1) Economic growth and full employment

Worsening BOT
- A worsening BOT (if not driven by change in GPL), will cause a fall in AD → and if the economy is operating with spare capacity, a **multiplied fall in real national income and increase DD-deficient unN**
- However, the extent of this fall depends on the foreign exchange system of the country

In a **floating forex system**,
- A worsening BOT, c.p, would cause a depreciation in forex rate → which may lead to **an improving BOT instead** which reduces contractionary impact **in the next period**

On the other hand, if a country is on **managed float system**, a worsening BOT could **cause forex to fall below the intervention band**
Central bank will have to intervene to prevent depreciation by buying up local currency
- This would cause **domestic money supply to fall**, causing supply of loanable funds to fall thus higher domestic interest rates thus fall in C and I

Improving BOT

- If a country is on a managed float system, **an improving BOT puts pressure** on the forex to **appreciate beyond the desired range**, and the central bank will need to sell the domestic currency
- This will increase the **supply of THE given appreciated currency in forex market** →which will increase country's foreign reserves
- Once the foreigners spend this this domestic currency, domestic money supply will increase and thus AD will rise due to lower interest rates assuming spare capacity

PERSISTENT BOT SURPLUS

- If a country is experiencing a persistent BOT surplus, it may face retaliation from its trading partners
- This results in a fall in net exports → Thus reducing output and employment levels through multiplier effect yada yad ayada

GPL effects

Worsening BOT

- A worsening BOT could help to ease off DD-pull (net export fall) BUT it will lead to depreciation of e/r → Cost push inflation

Improving BOT

- Countries with improving BOT (net exports) → DD-pull inflation if the economy operates closer to fully employment
- BUT nonetheless it could also lead to appreciation of forex hence reduce cost-push inflation

How to answer decision-making questions?

1) Use the decision making framework.
2) Identify the economic agent and explain their aims
3) Explain the benefits of making the decision
4) Explain the costs (explicit and implicit / opp costs) of the decision
5) Weigh the costs against the benefits
6) Explore other factors such as constraints/info/unanticipated changes