

Preface

Because even Sloman has one.

ECONOMICS IS FUN!

...That's what my teacher has been trying to convince me of ever since his first "Economics is What?" lesson. I'll admit, I do kinda like studying Econs (it's waaay more relevant than 2,4-dinitrophenylhydrazine), but definitely not when it comes to exams. The sheer amount of content simply doesn't agree with my doggedly short-term memory.

If you're like me, or if you just don't enjoy lugging a thick stack of Econs notes around, then these notes are for you. It started out more as a personal revision tool, but after watching *My Name Is Earl*, I decided I had better start farming some good karma. And besides, it makes me feel warm and fuzzy inside.

What you'll find in here is an insanely compressed compilation of 2 years' worth of H2 Economics notes – 546 pages to a whopping 35! These notes are extremely exam-oriented, which means the content in here is absolutely the *essence* of what you need for essays under the H2 syllabus; nothing more, nothing less. That also means the only bit of humour you'll find here is in this page. I bet you're now feeling glad that you didn't skip this.

The downside: These notes assume you already understand all your concepts and know how to draw your diagrams. (I hope that's a correct assumption.) They're meant not as a teaching tool, but rather as a revision resource to refresh your memory. Let's also get this out of the way: These notes aren't meant to be a substitute for school notes; they ARE a substitute for them. Yep, once you get your concepts down, you can pretty much junk your notes and just refer to this for any exam, I assure you.

Wherever possible, I've also tried to value-add by including question-tackling tips I've picked up over time that probably won't be found in your notes, and also additional explanations to further your understanding. These are in *italics*, which means "*non-essential but you should read them anyway*". I've also restructured most of the content into handy tables and diagrams to make things even easier to remember, so the overall organisation of ideas might appear to be a little... unconventional.

If you'd like to thank the creator of these notes, please do me - and your friends - a favour by passing these notes on to them. Fan mail, treating me to a free lunch and expressing your eternal gratitude are not necessary (although highly appreciated).

Many thanks to:

- Zhuoyi, Calvin and Benjamin, whose own notes I have shamelessly ripped-off referenced (oh fine, only some parts, okay?)
- The Hwa Chong Economics Department, for giving me the motivation to do this because they've been giving us such... "splendid" notes. (Then again, most of the information in here came from there, so that's still a "thanks" for them.)
- Jerrold, who helped to check through these notes, and then sent me a 3KB txt file of corrections thereafter (that's a lot D=)
- Everyone else who's helped with proofreading and spreading the word. Which includes you, *right?*

I hope this helps you get your A; I hope it helps me get mine, too.

SERIOUS BUSINESS STARTS HERE ↓

Contents

MICROECONOMICS

Central Problem of Economics	1
Demand & Supply	2
Elasticity	3
Price Controls	4
Correcting Market Failure	6
Cost Theory	9
Small vs. Large Firms	10
Market Structures Comparison	11
Oligopoly	12
Price Discrimination	13
Alternative Theories	14

MACROECONOMICS

Macroeconomic Goals - An Overview	15
Introducing $AE=Y$, AD/AS , Circular Flow of Income	16
Shifting AD/AS 101	17
Economic Growth	21
Unemployment	22
Inflation	24
Balance of Payments	25
Taxation	27
Standard of Living & Reliability of GDP	28
International Trade	29
Globalisation	34



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Microeconomics Notes

Central Problem of Economics

Central Problem of Economics - **SCARCITY**

- Definition: Limited resources available are unable to satisfy the unlimited human wants
- Resources - **Land, Labour, Capital, Entrepreneurship**.
- Unlimited wants - Desire for ever higher levels of consumption.
 - When old wants are satisfied, new wants are created.

Resources have to be allocated to promote the two main microeconomic aims: **Efficiency** and **Equity**. In doing so, the three basic questions that arise are:

1. What and how much to produce
2. How to produce
3. For whom to produce

Productive Efficiency: Absence of waste in the production process

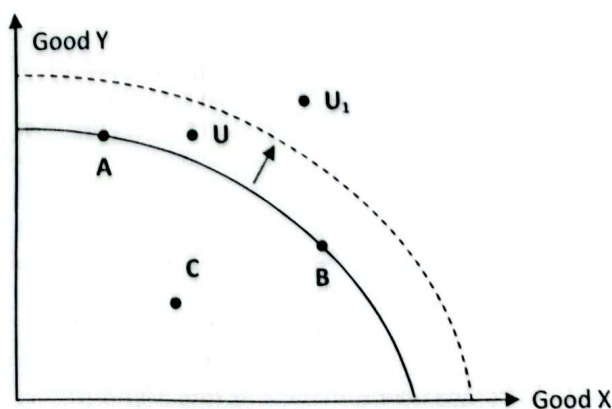
- PPC: All points on the PPC are productive efficient. Points inside the PPC are inefficient, representing either unemployment or underemployment.
- LRAC: All points on the LRAC curve are productive efficient.

Allocative Efficiency: Maximum welfare for society

- PPC: Only one point is allocatively efficient.
- Also achieved when $P = MC$ or $SMB = SMC$.
- Allocative inefficiency results in **deadweight loss**, since society values additional/previous units of a good more/less than it costs to produce them. (standard explanation for deadweight loss; try to refer to areas for benefit, cost and deadweight loss in graph)

The Production Possibility Curve (PPC) shows all the different maximum attainable combinations of goods or services that can be produced in an economy, when all the available resources are used fully and efficiently, at a given state of technology.

- **Scarcity:** Points outside the PPC such as U currently cannot be attained, even if desired by society.
 - Even if growth occurs so such points are now inside PPC, new wants U_1 will be created
- **Choice:** Society must choose a single point within the PPC to produce at, e.g. between A, B, C.
- **Opportunity cost:** Downward slope of the PPC.
- **Law of Increasing Opportunity Cost:** Concave shape of the PPC. As more of one good is produced, more and more of the other good must be sacrificed.
 - Due to resources not being equally suited for the production of all goods
- **Economic/Potential growth:** Outward shift of PPC boundary.
- **Actual growth:** Outward shift of point of production inside PPC.



Demand & Supply

[Demand/Supply refers to the quantity of a good or service that consumers/producers are willing and able to buy/offer for sale at each possible price during a given period of time, *ceteris paribus*.]

When a question asks for how a market has changed, it's asking for how/how much demand and supply have changed and their resulting effect on equilibrium price and quantity. Define all terms in terms of these four basic concepts, e.g. Revenue/Expenditure is Price x Quantity, Profit is Revenue - Cost.

Make sure to cover all four aspects, and include elasticity concepts to boost your explanations!

Determinants of demand

Population: Changes in population size or composition affects size of market

Expectations of future incomes and prices

Tastes and preferences: Affected by advertising (*Price elasticity*)

Related goods' prices: Complements vs. substitutes vs. derived demand (*Cross elasticity*)

Income: Normal vs. Inferior goods (*Income elasticity*)

Determinants of Supply

Related goods' prices: Competitive vs. Joint Supply

Expectations of future prices

Cost of Production: Taxes, Wages, Inputs, Technology.

→ R&D fixed cost

Elasticity

[Price elasticity of demand/supply measures the responsiveness of quantity demanded/supplied of a good to changes in its own price, *ceteris paribus*.]

Income/Cross elasticity of demand measures the responsiveness of demand of a good to changes in income of consumers/price of another good, *ceteris paribus*.]

State their formulae:

$$[PED / PES / YED / CED = \frac{\% \text{ change in qty demanded / qty supplied / demand (of good X)}}{\% \text{ change in price/income/price of good Y}}]$$

	Price Elastic Supply	Price Inelastic Supply
Characteristics	When demand increases: Price ↑ slightly, but output ↑ more than proportionately.	When demand increases: Price ↑ significantly, but output ↑ less than proportionately.
Number of firms	Many firms	Few firms (Monopoly)
Spare capacity	Availability of variable inputs, like labour and raw materials	Scarce resources available
Factor Mobility	Non-capital intensive, with factors easily shifted in from other processes	Capital intensive, with specialised machinery and labour required
Long vs. Short run (Evaluation)	In the long run, fixed costs become variable with enough time to build up machinery and train labour; hence supply becomes more price elastic.	

	Price Elastic Demand	Price Inelastic Demand
Characteristics	Gentle demand curve	Steep demand curve
Substitutes	Large amount of close substitutes	Little substitutes
Proportion of income	Costs high proportion of income	Costs low proportion
Addiction	Non-addictive goods	Addictive goods
Application (Price, Taxes)	• Firms: Lower prices to increase revenue • Govt: Levy taxes to decrease consumption	• Firms: Jack up prices! • Govt: Levy taxes for tax revenue
Effect on Tax / Subsidy Incidence	Producers pay greater share of taxes, but also receive higher share of subsidies.	Consumers pay greater share of taxes, but also receive higher share of subsidies.

(General rule for tax incidence: The party with a more price elastic curve pays less.)

	Positively Income Elastic (PED > 1)	Positively Income Inelastic (0 < PED < 1)	Negative Income Elasticity (PED < 0)
Nature of good	Normal good		Inferior good
	Luxury	Necessity	
Rate of satisfaction	People keep wanting more of that good even when they consume more of it	People are quickly satisfied when they consume more of the good (e.g. food)	Unknown
Application (Output)	Increase production of luxury goods during boom (NOT raise prices!)	- Do nothing -	Increase production of lower-grade goods during recession

	Positively Cross Elastic (CED > 1)	Positively Cross Inelastic (0 < CED < 1)	Negative Cross Elasticity
Characteristics	Goods are substitutes. Magnitude of CED depends on how close they are.		Goods are complements
Application (Response to other firms)	1. Slash prices as well, when competitors lower prices 2. Differentiate product		Joint promotions

Universal Micro Evaluations

- **Ceteris paribus:** Most concepts assume ceteris paribus condition. In reality, this rarely holds true as several factors may be changing simultaneously.
- **Imperfect competition:** Again, most concepts assume perfect competition. In reality, perfect competition rarely exists, possibly due to imperfect information or barriers to entry and exit.
- **Time horizon:** Concepts may only hold true in the short term. In the long run, prices may fall and demand for a good may get more price elastic due to more competitors entering the market, or a trend might die out for example.

Price Controls

Price Floor

Aims

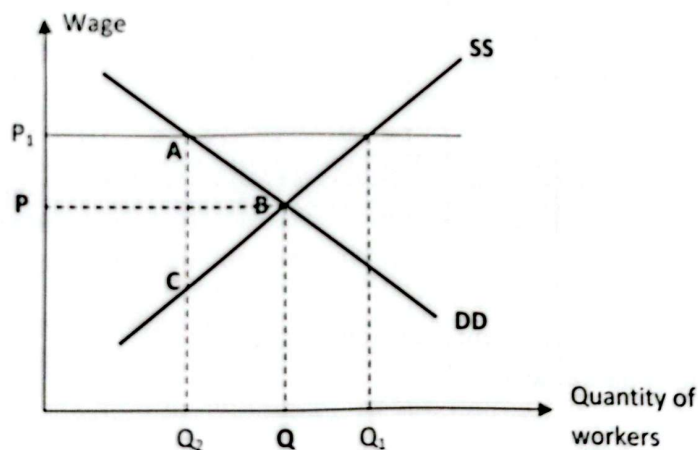
- Achieve equity by protecting the welfare of certain groups (e.g. workers)
- Create a consistent surplus so stocks will be accumulated (e.g. to prepare for future shortages)

Problems

- Allocatively inefficient (deadweight loss of ABC, same as price ceiling on next page)
- Distorts price signals, creating illusion of a lucrative market
 - Producers become complacent
 - May attract new producers, creating excessive surpluses
- Stock storage = Waste of money

Example: Minimum Wage

- The labour market is initially at equilibrium with a wage of P and a quantity of Q jobs available.
- However, after a minimum wage P_1 is imposed,
- The number of job seekers increase to Q_1 but the quantity of workers demanded by firms drops to Q_2 , resulting in a **surplus of $(Q_1 - Q_2)$** .
- **$(Q - Q_2)$ jobs are lost.**
- Only a quantity Q_2 of workers enjoy the higher wages.



Price Ceiling

Aims

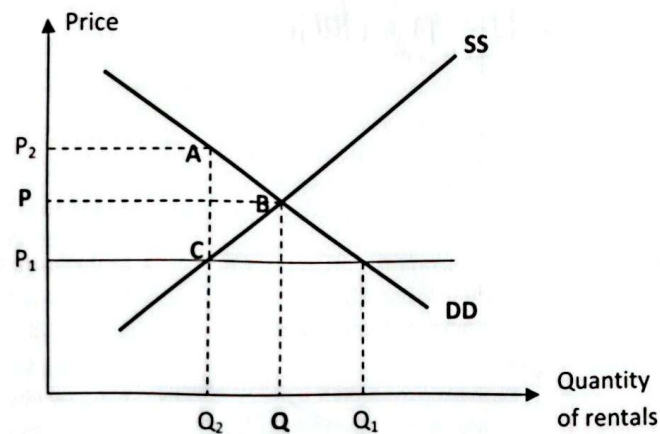
- Achieve equity by keeping prices of a good affordable to the majority
- Stabilise prices (e.g. during war)
- Prevent suppliers from exploiting the market by raising prices

Problems

- Allocatively inefficient (deadweight loss of ABC, same as price floor)
- Distorts price signals, making them no longer a way to allocate scarce resources
- Emergence of the black market

Example: Rent Controls

- The market is initially at equilibrium at price P and quantity Q .
- However, after a maximum price P_1 is imposed,
- A shortage of $(Q_1 - Q_2)$ arises.
- A black market may be created, where goods bought at the controlled price of P_1 are sold at a higher price of P_2 .



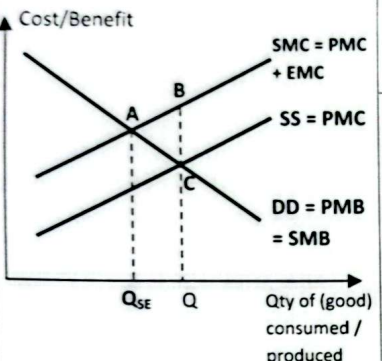
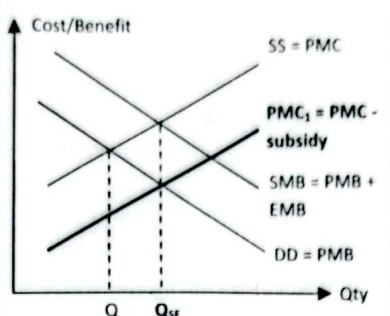
Alternative mechanisms for resource allocation: Balloting, Rationing.

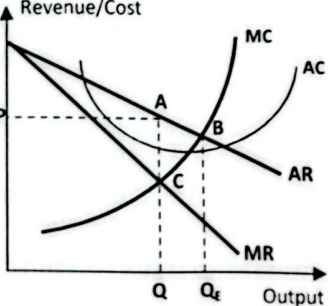
Govt spending: opp. cost of next best alternative forgone
eg. edu, infra, healthcare (link to qn. if possible)

Correcting Market Failure

Market failure occurs when the free market fails to achieve the microeconomic aims of **efficiency (!)** and equity (*probably not tested*).

Issue	Cause	Policy	Evaluation
Public Goods <i>(Complete market failure)</i>	A public good is: • Non-excludable: Impossible or prohibitively expensive to exclude non-payers from consuming a good. ○ No one will pay for what he can get for free (free-rider problem) ○ Absence of price signal, so producers will not supply the good => Good must be provided by government. • Non-rivalrous: Benefits enjoyed from a good are not depleted by additional users. ○ $MC = 0$, so $P = MC = 0$, i.e. good must be provided for free.	Direct provision of public goods, e.g. street lighting, national defence. <i>+ Non-rejectable</i>	• Difficult to determine the exact quantity of a public good to provide • Increases burden on taxpayers
Externalities <i>(Partial market failure)</i>	Externalities are costs or benefits from production or consumption experienced by society, but not by producers or consumers themselves. Explaining negative externalities: <i>[vice versa for positive]</i> 1. An individual/firm, in deciding whether to <u>(do something)</u>, only considers his Private Marginal Cost (PMC), which include <u>(examples)</u>. 2. However, there is also an External Marginal Cost (EMC), which includes <u>(examples)</u>. 3. Since the individual only considers his PMC and not the EMC, he equates $PMC = PMB$ in equilibrium, consuming quantity Q of <u>(good)</u>; however, social	Tax The government can impose a tax equal to the EMC, so the externality is internalised. <i>→ monetarise</i>	Pros • Still allows market to operate • Ensures firms/consumers bear the full cost of their actions • Provides incentive for firms to find ways to reduce EMC • Generates tax revenue Cons • Difficult to measure and quantify EMC in monetary terms to determine size of taxes • Unfeasible to have one-size-fits-all tax, as EMC may vary between various parties • If demand is price inelastic, taxes may not cause quantity demanded to fall significantly

Externalities (Partial market failure)	efficiency requires $SMC = SMB$, with the socially efficient output actually at Q_{SE}. 4. Hence, there is <u>over-consumption/production</u> of $(Q - Q_{SE})$ units of (good) in equilibrium, which incur a social cost of $ABQQ_{SE}$ that exceeds the social benefit they give, $ACQQ_{SE}$. This results in a deadweight loss of area ABC.  NOTE: Demerit and merit good need not necessarily have negative and positive externalities, only that the government deems them to be so and will hence intervene! (Possible link to government failure)	Subsidy The government can impose a subsidy equal to the EMB.  Marketable Permits (Cap and Trade) The government estimates the socially efficient output, then decides on the number of marketable permits to issue. Each permit allows firms to produce a certain amount of negative externalities, and firms can buy and sell the permits with prices determined by market forces. Regulation / Ban • Regulation: Impose legislation to regulate behaviour that have EMC/EMB (e.g. restricting production) • Total ban: Only beneficial if the welfare loss from it (area between SMB and SMC) is less than the deadweight loss under the free market (area ABC).	Pros • Still allows market to operate • Ensures society receives full benefits of consumption • Increases both consumer and producer surplus, so everyone benefits Cons • Difficult to measure and quantify EMB in monetary terms to determine size of subsidies • May breed inefficiency as firms lack incentive to find lowest cost of production • Increases burden on taxpayers Pros • Internalises EMC by establishing a market for it • Provides incentive for firms to find ways to reduce EMC Cons • Difficult to measure EMC in determining the number of permits to be released • May hence also be difficult to enforce the limit as specified by permits • Difficult to withdraw permits once they are owned by firms Pros • Easy to understand and enforce • Can be implemented quickly Cons • Do not allow market to operate • Legal restrictions are blunt weapons – firms may adhere to the letter but not the spirit of the law. They have no incentive to lower EMC beyond the legal requirement. • High investigative and legal costs required for enforcement and prosecution
Imperfect Information (Partial market failure)	• Consumers may not know, or simply ignore the full costs/benefits to themselves • Inaccurate or misleading information (For graph: Instead of SMC vs. PMC, it will now be PMC_{actual} vs. $PMC_{perceived}$; same for PMB.)	• Education, campaigns or advertisements • Require firms to make information available by law	• Difficult and takes time to change mindsets • Increases burden on taxpayers to fund such schemes

Issue	Cause	Policy	Evaluation
Imperfect Competition (Partial market failure)	Inefficiency arises in imperfect markets, esp. monopolies: 1. Allocative Inefficiency since $P > MC$, resulting in a deadweight loss of ABC since society values additional units of the good at ABQ_eQ, more than the cost to produce them, CBQ_eQ.  However, this may be tolerated if the monopoly: • Is a natural monopoly, where the market size allows for only one firm to operate at the MES; or • Is able to reap substantial economies of scale or achieve dynamic efficiency, and hence perform better than a perfectly competitive firm. 2. X-Inefficiency as firm has no incentive to lower costs due to lack of competitive pressures.	1. Prohibiting formation of monopolies (e.g. antitrust laws) 2. Prohibiting monopolistic behaviour such as predatory pricing (Singapore Competitive Commission does this) 3. Lowering barriers to entry to create a contestable market (e.g. through deregulation) 4. Setting price at $P=MC$, so allocative efficiency is achieved and supernormal profits are lowered 5. Setting price at $P=AC$, so only normal profits are earned 6. Imposing a lump-sum tax • Adds to firm's fixed costs, so AC rises • Price and output unchanged • Firm loses profits to government as tax revenue 7. Imposing a specific tax • Adds to firm's variable cost ◦ Both MC and AC rise • Price increases, output decreases • Tax burden borne by both firm and consumers	3. Significant barriers to entry may still exist, such as established firms' reputation. 4. Natural monopolies will make economic losses at $P=MC$, hence it needs to be coupled with a two-part tariff on consumers to make up for their losses: • Fixed minimum charge to cover firm's fixed costs • Further charge that varies with quantity • BUT fixed cost may deter potential users from using the service. 5-7. Allocative efficiency still not achieved • BUT equity achieved, as firm's profits are reduced.

On the whole, the **role of the government** is to achieve all six economic goals, namely:

- Micro: Efficiency and Equity, by correcting market failure (as above)
- Macro: Growth, Full employment, Low inflation and a Healthy BOP (discussed in next chapter)

Hence, when "government" is mentioned in micro questions, you should immediately think of the types of market failures above.

However, **government failure** (applicable to all solution above!) may actually worsen allocative efficiency instead, due to:

- Politicians motivated by **self interests** instead of society's interests
- **Electoral pressures** overshadow societal welfare, e.g. unpopular taxes are avoided
- **Imperfect information**: Government may not know the full costs/benefits of policies, the exact monetary value of externalities, or level of demand for a public good
- **Costs of administration and enforcement** might outweigh the social benefits from policies
- **Time lags** due to bureaucracy and inefficiency may cause policies to be ineffective or too late
- **Overdependence** on government intervention, resulting in a vicious cycle of intervention

Cost Theory

Internal Economies of Scale [*Falling unit costs of production when a firm increases output.*]

Financial Economies:

- A large firm has higher sales volume and more assets to offer as collateral, and is hence deemed to be more credit-worthy compared to a small firm, so banks will be more willing to offer loans
- Lower interest rates when borrowing large amounts
- Large firms can also raise interest-free funds by issuing shares to the public

Marketing Economies:

- Bulk purchase of inputs means lower prices and higher quality
- Bulk distribution of products through large modes of transport means lower per unit delivery cost
- High output also means lower per unit advertising costs

Administrative Economies:

- Lower per unit admin costs, as admin costs will not rise much with output
- Decentralised decision making increases efficiency, and avoids distortions and delays otherwise present in information transfer
- Large firms able to offer higher pay to keep the best staff

Risk-bearing Economies:

- Able to predict demand more accurately due to greater market share
- Diversification to reduce risk

Technical Economies:

- Specialisation through division of labour
- Lower per unit fixed costs of machinery
- More resources available for R&D

External Economies of Scale [*Falling unit costs of production when whole industry grows.*]

Economies of **C**oncentration: When firms carrying out similar activities are concentrated in an area

- Training schools may be set up to meet the industry's growing demand for labour, providing a ready pool of skilled workers
- Better infrastructure may also be set up to meet the industry's needs, lowering operating costs

Economies of **I**nformation: Firms can share cost of R&D

Economies of **D**isintegration: Specialisation through division of production processes among firms

Internal Diseconomies of Scale [*Rising unit costs of production when a firm increases output.*]

Management Difficulties

- Difficult to coordinate between various departments due to communication breakdowns, resulting in inefficiency
- Long chains of authority may lead to time lags in decision implementation
- Extensive red tape results in large firms responding more slowly to changes in market conditions

Strained Relationships

- Difficult to ensure welfare of all workers, especially those at the lower end of the hierarchy, resulting in low morale and loyalty and an overall fall in productivity.

External Diseconomies of Scale [Rising unit costs of production when whole industry grows.]

Higher Input Prices

- Increased demand for factors of production results in higher input prices, especially if supply of the inputs is limited and price-inelastic.
- Trade unions of larger firms tend to be more powerful, securing higher wages.

Increased Strain on Infrastructure

- Concentration and expansion of firms may result in congestion, overcrowding and pollution.

Small vs. Large Firms

When considering the pros and cons of mergers and large monopolies on society, consider the effects on:

- **Firms:** Revenue and cost advantages (the 3 marked pts below) & Efficiencies (see table on next page)
- **Consumers:** Price, Output, Quality and Variety
- Mergers may also result in **rationalisation**, through which productive efficiency is increased but at the cost of retrenchment.

	Revenue Factors	Cost Factors
Small Firms	1. Niche Market: • Specialised products that will lose their appeal if mass-produced, e.g. customised jewellery • Services that require individual attention 2. Subcontracting for large firms, providing them with infrastructural support 3. Products where variety is preferred	1. Limited economies of scale due to low fixed costs involved • MES at low output 2. Faster response to economic downturns
Large Firms	1. High pricing power due to large market share ✓ • Demand curve more price inelastic • Able to employ strategies like predatory pricing 2. Able to conduct non-price competition by investing supernormal profits in R&D and advertising (Dynamic Efficiency) ✓ • Builds up brand image and customer loyalty, making demand even more price inelastic	1. Presence of substantial economies of scale, from high start-up costs and capital intensive production ✓ • MES at high output 2. Significant barriers to entry

Small firms can actually coexist with large firms if:

- Presence of niche market allows for small firms to survive amidst competition from large firms
- Vertical disintegration results in large firms subcontracting to small firms
- No substantial cost advantages for being large: LRAC has a gently falling portion over a large output, or is saucer-shaped (flat base)

Market Structures

* Defining characteristic

		Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Characteristics	Number of Firms	- Many buyers and sellers - Perfect information	Many firms with insignificant market share each. - Prevents collusion - Independence of firms: Firms' decisions will not affect others significantly	A few dominant firms *Mutual interdependence: Each firm's decisions will also affect rival firms, hence <i>rival consciousness</i> needed in deciding market strategy.	Only one producer
	Type of Product	Homogenous, perfect substitutes with no variety.	*Product differentiation - May be real: e.g. Personalised service; - Or imaginary: e.g. Branding	No specific type – can be homogenous or differentiated.	Unique, no close substitutes
	Barriers to Entry	None	None	High	*High

Efficiencies	Allocative ($P = MC$)	Yes	No. (But not as bad as monopoly, due to more price-elastic DD curve)	No	No
	Dynamic (Investing supernormal profits in R&D)	No – Only normal profits earned in long run.	Not much, since supernormal profits earned in short run from innovation will not be sustained anyway due to freedom of entry for new firms. Evaluation: Small-scale innovation will still occur to differentiate products, since rivals may not copy all innovations due to imperfect information.	Yes – To gain a competitive edge, even if only temporary.	Yes. Evaluation: - May lack incentive to innovate due to lack of competitive pressures (X-inefficiency) - No guarantee that R&D will produce results
	X-Efficiency (Minimising cost due to competitive pressures)	Yes	Yes	Yes	No, since lack of competitive pressures may result in complacency.
	Productive (Firm produces on LRAC)	Yes to all! (However, X-inefficiency will result in productive inefficiency.)			
	Minimum Efficient Scale (When economies of scale have been fully exploited, i.e. min. pt. of LRAC)	Will always produce at MES.	Excess Capacity Theorem: Each firm serves too small a market to be able to fully exploit economies of scale, so resources can be used more efficiently if output was raised to MES.	Can possibly produce at MES if the minimum point of LRAC happens to coincide with the profit-maximising output, i.e. it intersects the point where $MC=MR$. <i>(This can happen because monopolies can maintain supernormal profits in the long run and so LRAC can lie anywhere, while monop. comp. firms can only earn normal profits.)</i>	
	Remarks (Other merits)		- Wider consumer choice - Creates jobs in advertising sector	Equilibrium price can be lower and output higher than if there were many firms, if substantial economies of scale are reaped such that MC falls significantly.	

Society POV: firms are not productive
efficient → must produce at MES
- only coincidentally

LRAC
MES



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Oligopoly: Models

1. Kinked Demand Curve Theory

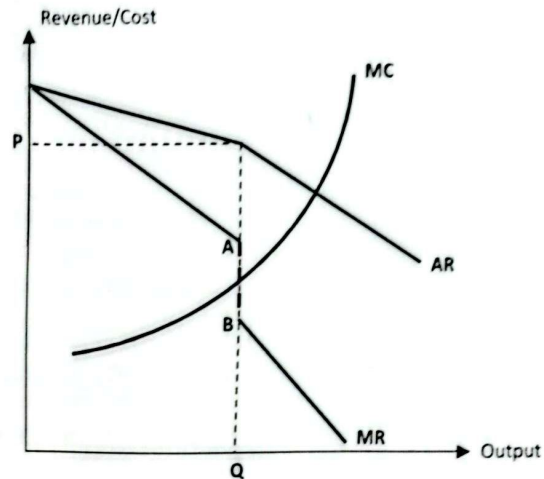
- No collusion
- Homogenous product
- Rival firms will match price decreases but not price increases

Merits: Explains price rigidity

- No change in price and output for minor shifts in MC within the discontinuous region AB
- Change in output but not price for moderate shifts in demand

Criticisms:

- Does not explain how eqm price/output were obtained in the first place
- Firms may match price increases if there is a rise in costs or demand across entire industry



2. Non-price competition

- Product Development and Innovation: Firms may try to maintain profits through developing new products that will give a competitive edge (even if only temporary)
- Marketing, Advertising and Promotions: To give consumers a perception of product differentiation

3. Price Wars

Usually a last resort, as they are costly to wage and hence unsustainable. However, predatory pricing may be used to eliminate new competitors or gain market share.

4. **Cooperation** – E.g. joint ventures, when R&D costs are high but the pace of technical changes is rapid

5. Collusion

- Explicit: Cartel – E.g. OPEC
- Tacit: Price Leadership Theory – Firms follow pricing policy of a recognised leader
- Works best with:
 - Small number of participants sharing strong trust
 - Similar costs of production among participants
 - Clear leader
 - Policing of agreement
 - Stable market conditions, with no danger of new entrants
 - No intervention from government

6. **Contestable Market:** Government regulation to make market more like monopolistic competition

- No barriers to entry/exit – Creates threat of potential entrants making a hit-and-run, by entering the market for a short while for quick supernormal profits
 - All firms subject to same government regulations and control regardless of size
 - Regulation to prevent predatory pricing by incumbent firms to deter entrants
- Hence firms will behave as if under strong competition and be unable to set prices above AC without attracting new entrants, thus earning only normal profits in the long run.

Not
in
syllabus



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Price Discrimination

[Price discrimination occurs when a firm charges different prices for the same product when they are not a result of cost differences. (NOT price differentiation: Price difference due to differences in cost)]

When asked if something is a case of price discrimination, evaluate how much it satisfies the conditions for price discrimination, as below:

Conditions:

1. Some degree of monopoly power
2. Segregation of market into separate and identifiable groups, with no seepage between groups (i.e. consumers cannot buy in the lower-priced market and sell in the higher-priced one)
3. Different price elasticities of demand among groups
4. Product is homogenous, with all units giving equal benefits to consumers and having equal costs to the producer (as implied in the definition)

Types:

1. **First Degree Price Discrimination:** Each unit sold at the maximum price buyers are willing to pay.
 - $DD = AR$ curve also becomes MR curve since additional revenue from each unit sold is equal to the full price consumers are willing to pay, hence firm earns profits of area under DD curve.
2. **Second Degree (Block pricing):** Charging higher prices for initial units and lower prices thereafter, to sell off surplus capacity.
3. **Third Degree:** Charging different prices in different markets.

Benefits:

- Extra profits for firm
- Allocative efficiency is achieved in 1st degree, since profit-maximising output is increased to where $P=MC$
- Possibility of supply even when AC lies above AR , due to extra profit generated to cover costs
 - 3rd degree also makes it possible to supply a more price elastic market, so consumers who are less willing to buy the good can buy it at a lower price
 - Can result in positive externalities if merit goods involved (e.g. medical services)

Disadvantages:

- Loss of consumer welfare, as consumer surplus is lost to firm as profits
 - Complete reduction of consumer surplus in 1st degree
 - Hence, not equitable.

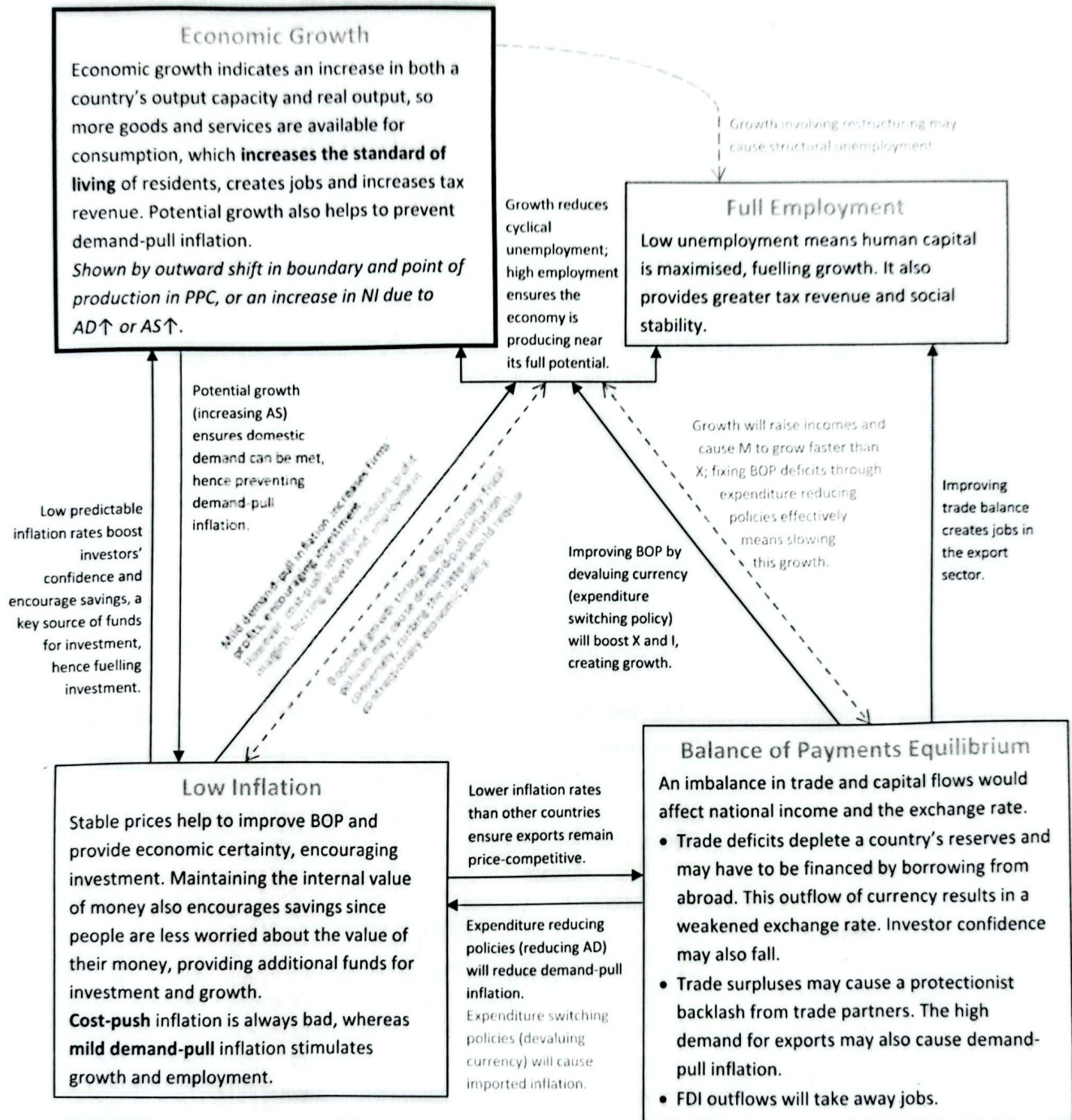
Alternative Theories

The Traditional Theory of firms assumes that firms will always aim to maximise profits, producing where $MC=MR$. In reality, this is not the case, due to:

- Imperfect information, resulting in an inability to maximise profits; or
 - Firms having other aims besides profit maximisation.
1. **Lack of Information towards MC:** Firms usually only consider explicit costs since they are easier to compute, but economic cost consists of both explicit and implicit costs $\Rightarrow$ True MC unknown.
 2. **Lack of Information towards MR:** Difficult to determine demand curves and hence MR
 - Even if firms conduct market research to determine the price elasticity of demand, such data may be inaccurate or become outdated very quickly.
 - Not ceteris paribus: Demand curve does not remain static, and may change due to other factors affecting demand (i.e. *PETRI*)
 3. **Divorce of Ownership and Control:** Owners want to maximise profits but managers may have other aims, such as:
 - Maximising their own self-interests, in terms of one's salary and fringe benefits
 - Increasing the number of subordinates under one's control
 - The power to dictate how company funds are usedSince these often depend on sales revenue or size of the company, managers may aim for revenue maximisation or growth maximisation instead (*see below*)
 4. **Revenue Maximisation:** Firms themselves may choose to maximise sales revenue instead by producing up to the point where $MR = 0$, in order to boost the firm's reputation among consumers and financial institutions.
 5. **Growth Maximisation:** Firms may want to maximise growth to gain market share and hence produce at $AR = AC$, the maximum possible output that will still not incur economic losses.
 - BUT firms still need to satisfy the demands of their shareholders (owners), i.e. be **profit satisficing**, and may hence impose a minimum profit constraint.
 - **Evaluation:** Revenue and growth maximisation may just be short-term goals, and serve as a means to the end of profit maximisation in the long run.
 6. **Organisational Slack (X-inefficiency):** Occurs when the firm uses more input than is necessary for a certain output, hence making AC and MC higher than necessary. May occur due to:
 - Lack of competitive pressures
 - Imperfect knowledge of the lowest costs or wages needed
 - Unwillingness to take the risk of investments
 - Trade unions' demands for higher wages
 7. **Other Goals:** Consumer/Worker cooperatives, Corporate Social Responsibility (i.e. charity work), environmental beliefs etc.
 - **Behavioural Theories:** Firm will aim to satisfy the minimum demands of the various interest groups it deals with, e.g. the government, shareholders, workers, consumers and environmentalists
 - Firm will try to reach a compromise with all groups, but hence be unable to maximise anything
 - **Evaluation:** Large firms listed on stock exchanges and which are vulnerable to takeovers often still focus on profit maximisation as one of their top priorities.

Macroeconomics Notes

Macroeconomic Goals



IN EFFECT: BOP + low inflation VS growth + employment

- **ECONOMIC GROWTH** creates more jobs, but may cause demand-pull inflation and trade deficits.
- Increasing **EMPLOYMENT** will increase output and growth, but create demand-pull inflation.
- **INFLATION** can be fixed through reducing AD, in the process also solving **BOP DEFICITS**, but this would slow down growth and cause unemployment.

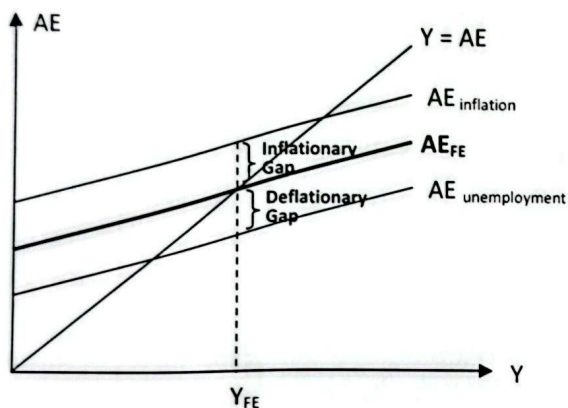
(AE=Y) and (AD/AS) Frameworks

AE=Y

Aggregate Expenditure is the total planned expenditure on goods and services in an economy.

Use the AE=Y framework to explain the effect of changes to C G I X M on national income and employment ONLY, without considering effects on price level.

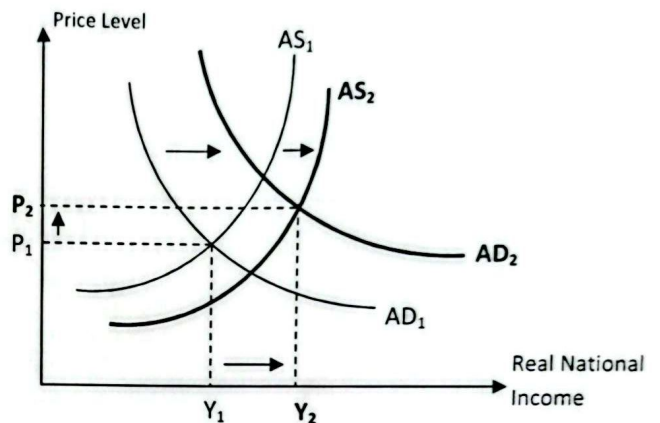
Also used to show multiplier, $k = \frac{\Delta Y}{\Delta AE} (= \frac{1}{MPW})$.



AD / AS

Aggregate Demand/Supply is the total demand/supply of goods and services in an economy at any given time.

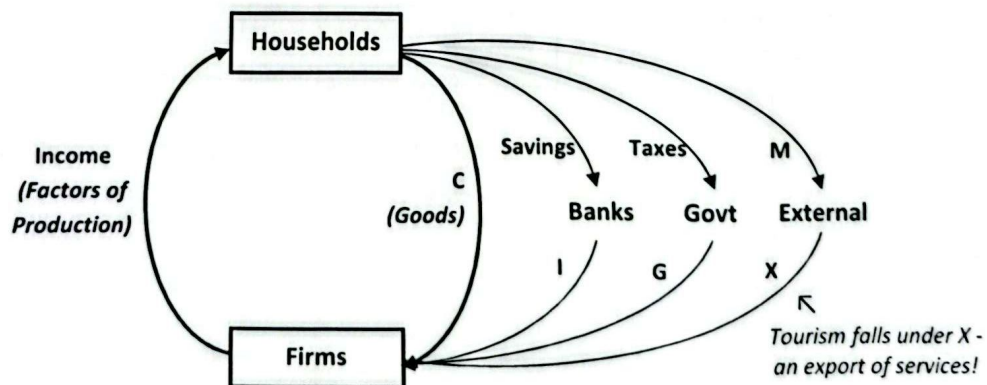
Use the AD-AS framework to explain how both the price level AND national income/employment can be adjusted to achieve the macroeconomic goals.



[An outward shift in AD greater than that of AS increases NI and employment, but causes mild demand-pull inflation.]

Circular Flow of Income

This came out in the 2009 'A's, so it likely won't be tested again anytime soon. Good for your understanding though, plus... it actually makes sense!



Shifting Aggregate Demand/Supply 101

AD/AS can be manipulated to achieve **ALL** macroeconomic goals!

(The other method, exchange rates, can be used for imported inflation and BOP, though it affects AD too.)

Increasing AD/AE: growth, employment, inflation, worsens BOP

Taxes -- C, I

- Since consumption is given by $C = a + bY$: $\downarrow$ direct taxes $\Rightarrow \uparrow$ disposable income $Y \Rightarrow \uparrow$ induced consumption $bY \Rightarrow \uparrow C$
- Tax rebates for firms will increase their profits and the expected rate of return on investments $\Rightarrow \uparrow I$ (as per the MEI)

Evaluation:

1. MPC: If Marginal Propensity to Consume (MPC) is low, reducing taxes may have little effect on consumption, as consumers will just save the extra income.
2. Consumer/Investor Confidence: ("animal spirits", or lack thereof)
 - Consumers do not only base their consumption on current income levels but also on future expected income, so tax cuts may not stimulate consumption much if they view it as only a temporary measure.
 - Private investment also depends on business expectations, so tax cuts may not stimulate investment much if investor confidence is low.

Government Expenditure -- G

The government may inject **increased** government expenditure into a weak economy, in order to trigger off a stream of induced spending via the multiplier effect which will jump-start the economy ("Pump-priming")

Evaluation: "Crowding-out Effect" / Public Sector Borrowing Requirement (PSBR)

To fund increased spending, the government will need to:

- Increase taxes: But this reduces disposable income and profits of consumers and firms $\Rightarrow \downarrow C, I$
- Borrow from financial institutions: But $\uparrow$ demand for loans $\Rightarrow \uparrow$ interest rate $\Rightarrow \downarrow I$
- Print money: But this creates inflation.

BUT fiscal policy can still be effective if $\uparrow AD$ due to G outweighs $\downarrow C, I$.

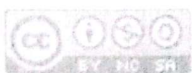
Also NOT applicable to SG, as the govt draws any extra funds required for G from our accumulated reserves, and not through public borrowing.

Monetary Policy involves the manipulation of:

1. Monetary Supply – Amount of currency in circulation and cash reserves of commercial banks
2. Interest Rates – If domestic consumption and investment make up a large portion of AD
3. Exchange Rates – For price stability.

Interest and Exchange Rates are interlinked: Lowering IR would cause the outflow of hot money, causing ER to depreciate; while lowering ER brings in hot money as investors expect it to rise back in future, hence providing more funds for investments and lowering IR.

Exam questions usually won't ask you to explain how the Central Bank manipulates the interest rate, so you probably don't even need to bother with the Liquidity Preference and Loanable Funds theories; just know how interest rates affect the economy.



Shared by Lim Zhicong
On owlcove.sg

Interest Rate -- C, I

With lower interest rates:

- Decreased opportunity cost of consumption $\Rightarrow \uparrow C$
- The cost of borrowing for firms is reduced, hence increasing their expected ^{net} rate of return on investments and giving them incentive to increase their level of investment (as per the MEI curve)
- Domestic currency will depreciate due to the outflow of hot money, as people will withdraw money from that country and save it in banks of other countries that offer higher rates $\Rightarrow \uparrow X-M$

Evaluation:

1. **Interest Elasticity of Money Demand:** If the bulk of the money in the economy consists of speculative funds, a large decrease in money supply will be needed to decrease interest rates.
2. **Interest Elasticity of C & I:** If C and I are interest-inelastic and are more dependent on confidence levels, bleak expectations of future incomes may mean C, I do not rise much despite low interest rates. (*vice versa: "irrational exuberance" despite high interest rates in contractionary MP*)
3. **Liquidity Trap:** If interest rates are already at the *perceived* lowest possible rate, increasing money supply will not decrease it any further, since investors expect it to rise in future and would rather hold on to cash to exchange for bonds when that happens.
4. For SG: Open Market Operations are ineffective due to our inactive secondary bond market.

Exchange Rate -- X-M, I

* Managed Float Exchange Rate is SG's main tool! (*see last page*)

If a country depreciates the domestic exchange rate:

- Exports become cheaper and imports more expensive, and if the Marshall-Lerner condition holds (i.e. $PED_x + PED_m > 1$), export revenue will rise while import expenditure falls $\Rightarrow X-M \uparrow$
 - BUT for SG: Due to the high import content of our exports, they will actually become less competitive due to imported inflation

NOTE: Invoke the M-L condition only in explaining how exchange rate affects trade, as it is the only factor that affects demand for both X and M. Otherwise, just say "import/export demand is price elastic" (or not).

- Attracts FDI due to the lower costs of operation, and also short-term investments ("hot money") since people expect the currency to appreciate $\Rightarrow I \uparrow$
(*Such capital inflows may actually cause the exchange rate to rise back to equilibrium.*)
 - **Evaluation:** Unstable exchange rates may actually discourage long-term investment.
- Also helps to remedy BOP deficits – see *Expenditure Switching Policies*

Trading Partners' Incomes -- X

An increase in trading partners' incomes will lead to an increase in their demand for a country's exports, provided that this demand is income elastic.

Expected Future Incomes -- C

In an economic boom, consumers will expect future incomes to rise and will hence increase current consumption. $MPC \uparrow \Rightarrow b \uparrow \Rightarrow$ induced consumption $bY \uparrow \Rightarrow C \uparrow$ [*vice versa for recession*]

Savings -- C, I

- A high MPS actually reduces C and the multiplier, resulting in a fall in AD and hence national income. (*Savings will hence ironically fall – Paradox of Thrift*)
 - Saving may hence hurt economic recovery from recessions
- BUT if people save during economic booms, it provides funds for investment in capital goods, allowing for future potential growth in the economy.

Multiplier Effect

Full explanation needed only if the focus of the question is specifically on fiscal/monetary policy, or how NI rises from injections. Otherwise, just state the two lines below:

[The actual increase in national income will be greater than the increase in autonomous expenditure (i.e. components OTHER than C), due to the multiplier effect.]

Stage 1: If the government decides to inject \$100m into the construction of new highways...

Stage 2: This amount will be received as income by contractors and construction workers. Given that the MPC is 0.6, they will then spend \$60m on consumption of clothes for example, with the remaining \$40m leaking out as savings, taxes and imports.

Stage 3: This spending will in turn raise the income of shop owners by \$60m, who will again spend \$36m of it on other goods, with the remaining \$24m leaking out as saving, taxes and imports.

As a result, national income will rise with the increase in consumption at every successive stage, resulting in an overall increase of (\$250m) that is far greater than the initial injection of (\$100m in government expenditure), as per the formula $\Delta Y = \Delta G / (1 - MPC)$.

[Reverse multiplier effect happens as well!]

Evaluation:

- Enough excess capacity needs to be present for the full multiplier effect to occur. If the economy is already producing at full employment, increasing AD will only create inflationary pressures.
- Multiplier effect is very low in countries with low MPC such as Singapore (**multiplier = 0.54**):
 - Our import spending is double our GDP due to our lack of natural resources, resulting in a high import leakage (MPM)
 - Significant proportion of Singaporeans' wealth is "locked up" in the CPF, a form of mandatory savings, resulting in a high MPS
 - Hence, fiscal and monetary policy less effective due to low multiplier.

Increasing Short-Run AS (i.e. outward shift): *growth, employment, reduce inflation, improves BOP*

SRAS may fall due to supply shocks (e.g. natural disasters) or cost-push inflation - refer to Inflation section.

To increase ONLY SRAS, cost of production needs to be brought down:

- Wage-push inflation can be corrected by a **prices and incomes policy**, in which a price ceiling or even a wage freeze is imposed onto wages. Governments can also clamp down on trade unions.
 - **Evaluation:** Distorts market forces in the labour market, and may result in a confrontation with trade unions. Powerful trade unions may also make negotiations difficult.
- Imported inflation can be corrected by appreciating domestic currency, hence making imports relatively cheaper.

Increasing both Short-Run and Long-Run AS: *growth, employment, reduce inflation, improves BOP*

(Basically, improving the quantity and quality of resources.)

SUPPLY-SIDE POLICY

Increase capital stock - Investments also increase AS!

- Attract FDI from overseas to establish new industries
- Investments in capital: R&D investments, and purchasing capital like machinery
 - Reduces the cost of production in the short run
 - Increases the productive capacity of the economy

To encourage R&D, the government can:

- Implement strong patent laws *SG strong legal framework*
- Provide subsidies and tax treats for firms engaging in R&D *EIS*
- Build industrial parks, to bring R&D personnel from different firms closer together and hence encourage cooperation.

Increase productivity of workforce

Quality of human capital can be increased through re-training => Increases both *potential* and *real* output of firms.

Increase size of workforce

The labour force can be expanded through:

- Reducing structural and frictional unemployment - *refer to Unemployment section.*
- Arrival of migrant workers with the intention of settling permanently
- Increased female participation in the workforce
- Increasing future population size by raising fertility rates (e.g. through baby bonus)

All this increases SRAS by depressing wages, and also increases LRAS by increasing the country's potential output.

Evaluation:

- Foreign workers may face resentment from locals who believe that they are stealing their jobs
 - May affect social stability
- Cheap foreign labour may give firms less incentive to upgrade from labour-intensive to capital-intensive methods of production, slowing down the restructuring of the economy.
- BUT the influx of foreign workers may serve as an incentive for locals to go for upgrading, to improve their competitiveness in the job market.

Tax rate

- Income effect (Productivity $\uparrow$): With higher taxes, people can afford less, so they work more so that they do not have to cut their consumption as much.
- Substitution effect (Productivity $\downarrow$): People are discouraged from working as much since the opportunity cost of leisure – i.e. the wages they could have earned – is now lower.

Both points can be used as evaluation for each other in deciding whether taxes will increase or decrease AS.

When evaluating the economic effects of events:

1. Explain the effects on AD/AS and the 4 macroeconomic goals
2. Raise other miscellaneous effects (e.g. increase in oil prices encourages R&D on substitutes)
3. Evaluate the overall effect with relation to the 4 goals

Economic Growth

[Economic growth consists of both **actual** and **potential** growth, which are the annual percentage increase in national output and output capacity respectively.]

Policies

- Actual Growth: Expansionary fiscal and monetary policies (*anything that increases AD*)
- Potential Growth: Supply side policies (*anything that increases AS*)

Benefits vs. Costs

- ✓ **Increased SOL:** An increase in real GDP per capita indicates increased consumption levels
 - ✗ BUT higher consumption may not necessarily lead to higher utility, as new wants are created when old ones are met
- ✓ **Unemployment:** Actual growth (increase in AD) and diversification reduces cyclical unemployment, while potential growth (increase in AS) may be due to a reduction of structural unemployment
 - ✗ BUT if growth is from restructuring and the creation of new industries, structural unemployment may result.
- ✗ **Demand-Pull Inflation:** If economy is already producing near full employment, any increases in AD unmatched by similar increases in AS will result in firms competing for the limited resources available as the economy is already experiencing supply bottlenecks, so prices of inputs and ultimately that of products are pushed up.
- ✗ **Balance of Payments:** Increased incomes will result in imports growing faster than exports assuming import demand is income elastic, hence worsening trade balance and BOP.
- ✓ **Equity:** Increased tax revenues collected from the rich through a progressive tax system can be redistributed to the poor
 - ✗ BUT if growth is enjoyed mainly by the rich elite and the government fails to help the poor, wealth may not trickle down to them, hence worsening income inequality
- ✓ **Externalities to environment:** People feel they can afford to care more about the environment, and become less concerned about their private consumption
 - ✗ BUT higher consumption levels may still lead to pollution, waste and a depletion of natural resources.
- ✗ **Opportunity cost** of current consumption: To achieve future potential growth, a country must sacrifice production of consumption goods for that of capital goods (*Use PPC to illustrate trade off*)

Evaluation of Goal: Economic growth is the most important goal in SG, since in the process of achieving growth, we can achieve the other goals as well.

- Cyclical and structural unemployment is reduced through actual and potential growth respectively.
- Our exchange rate centred monetary policy and supply-side policies, aimed at achieving growth, also help to achieve low inflation.
- The exchange rate centred monetary policy also helps us achieve a healthy BOP in the process.
- However, if there are other more urgent economic problems (e.g. high inflation) at hand, we may need to temporarily focus on them instead of economic growth.

Unemployment

[Unemployment refers to the number of people of working age who are without work, but willing and able to take up employment.]

Causes

Cyclical unemployment

- Labour is a derived demand: A lack of AD during downswings of the business cycle also reduces demand for labour
- Greatest concern in Singapore, due to our export-oriented growth model
 - Economy closely linked to the global business cycle => highly susceptible to global downturns

Structural unemployment

- Occurs when changes in technology/industries change the set of skills needed by workers, so workers without these skills become unemployed
- Prevalent in SG, as we are shifting towards a knowledge-based economy
 - Manufacturing sector contracting due to other countries like China gaining a comparative advantage in low-skilled labour
 - Education levels among the older generation are low

Frictional unemployment

- Due to imperfect information, as time is needed to match people to the right jobs
- Less of a concern as it is part of the natural rate of unemployment

Seasonal unemployment: Self-explanatory.

Costs

- **Loss of production:** Unemployment implies that the economy is producing inside the PPC, hence representing a loss in potential national income and SOL.
- **Loss of human capital:** Prolonged unemployment may cause people to lose their skills and knowledge, reducing their productivity even if they are re-hired and hence also reducing the country's potential output
- **Welfare of unemployed:**
 - The unemployed lose their financial security and face low material well-being
 - Loss of self-esteem and morale, affecting mental health
- **Financial cost to government:**
 - Loss of tax revenue, since the unemployed do not pay income tax
 - Increased spending on welfare payments and benefits
- **Social stability:** Unemployment is linked to increased crime and violence.

Policies

Cyclical unemployment (Basically, increase AD)

- Fiscal Policy: Used in SG with supply-side policies to ensure long-term growth
- Monetary Policy: Not effective in SG, as domestic demand constitutes very little of our AD
- Exchange Rate: Devalue currency to make exports more price competitive, increasing employment in export sector
 - **Evaluation:** If imports are price inelastic (M-L condition not satisfied), import expenditure will rise and worsen the BOP

↑P_M ↑M

Structural unemployment (Supply-side policies)

- The government can steer the education system towards nurturing a workforce with the relevant skills needed in the economy
- Provide training grants and subsidies for the **retraining** of unemployed workers
 - E.g. SPUR scheme: Provides subsidies for companies to retrain their workers and redeploys retrenched workers to new jobs.

Evaluation:

- Increased government spending required for subsidies
- Older workers may put up great resistance to retraining
- Illiterate people will find it difficult to get new skills.

Frictional unemployment

More job fairs and better job information services to remedy imperfect information in job market.

Evaluation of Goal:

- Reducing cyclical through expansionary fiscal policy will result in demand-pull inflation.
- However, achieving high employment is still more important than keeping prices stable. If consumers have at least a stable income from a job to fall back on, they will be less affected by higher prices.
- That said, we achieve low unemployment through economic growth, hence actual growth (to prevent cyclical via diversification) and potential growth (to prevent structural via supply side policies) remain SG's most important macroeconomic goal.

Inflation

[Inflation is a sustained increase in the general price level.]

Causes

Demand-pull inflation

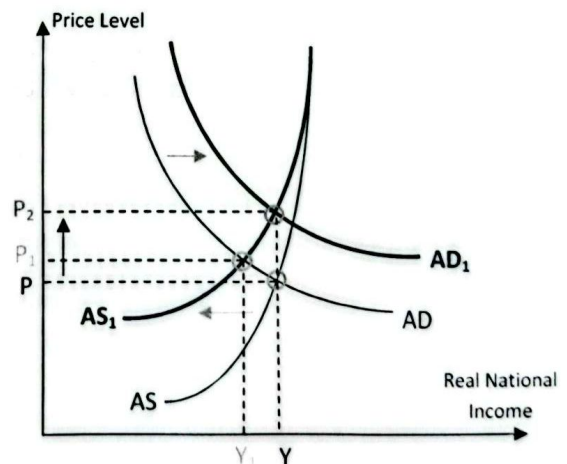
- Increase in AD: When unmatched by an increase in AS, especially if the economy is already producing near full employment.
- Increase in monetary supply: When banks hand out loans too freely or the government prints too much money such that people have more money to increase their consumption, hence increasing AD.

Cost-Push Inflation (Basically factors that shift SRAS with fancy names)

- **Wage-push inflation:** If trade unions push up wages without a corresponding increase in labour productivity.
- **Imported inflation:** Due to inflation in other countries, or a weakening of domestic currency.
 - Prices of imported goods and services rise (*Direct effect*)
 - Prices of locally produced goods that use imported factors of production rise (*Indirect effect*)
 - **Main cause of inflation in Singapore**, due to the high import content of our goods and services as a result of our lack of natural resources.
- **Tax-push inflation:** Indirect taxes increase costs of production for firms, with some tax burden passed to consumers.

Wage-Price Spiral: A rise in prices due to continual shifts in AD and SRAS.

1. Trade unions demand higher wages, decreasing AS from AS to AS₁
2. Firms respond to the rising cost of production by cutting back on the workers they hire. Real national income and employment levels fall from Y to Y₁.
3. To prevent a rise in unemployment, the government boosts AD from AD to AD₁. Output and employment return to their initial levels at Y, however price levels will rise even further from P₁ to P₂.
4. Trade unions will again demand higher wages to offset the rising costs of living... vicious cycle occurs.



Effects

- **Mild demand-pull inflation** increases firms' profits, stimulating investment and growth
- **Low inflation encourages investment:**
 - Encourages savings, a key source of funds for investment, as people are confident the real value of their money will not fall
 - Low cost-push inflation also makes investors more confident of returns
 - BUT even if inflation is high, as long as it is not unexpected, investors' confidence will not be affected much
- **Unemployment:** Demand-pull increases employment if economy is not already at full employment; Cost-push always causes unemployment.

- **BOP:** If we have lower inflation than other countries, our exports become more competitive while imports are relatively more expensive, therefore trade balance and BOP improves. Exchange rate also appreciates.
- Inflation also results in income redistribution:
 - **Winners:** Variable income earners, Debtors, Firms (firms win in demand-pull, but will lose as well if cost-push)
 - **Losers:** Fixed income earners, Creditors, Consumers (consumers always lose, since their purchasing power always falls during inflation)

Policies

- Demand-pull inflation: Contractionary fiscal and monetary policy, Supply-side policy
- Cost-push inflation: Supply-side policy
- Imported inflation: Exchange rate policy

Balance of Payments

[The Balance of Payments records all economic transactions between the residents of a country and the rest of the world during a specified period, usually one year.]

The two most/only important categories of BOP are: the Current Account which shows **trade balances**, and the Financial Account which shows **investment flows**.

BOP will naturally return to equilibrium through exchange rates and national income. E.g. If BOP deficit:

- Domestic exchange rate depreciates => exports become more price-competitive
- $(X-M) \downarrow \Rightarrow$ national income $\downarrow \Rightarrow$ import spending falls

Therefore, trade deficit eliminated! [vice versa for BOP surpluses]

However, persistent BOP deficits may still occur in one country due to:

1. Fixed exchange rate regime
2. Higher inflation rates than other countries – Exports become less competitive
3. Higher growth than other countries – Imports will grow faster than exports with rising income
4. Long-term structural changes – Trade restrictions, Emergence of new substitutes and rivals

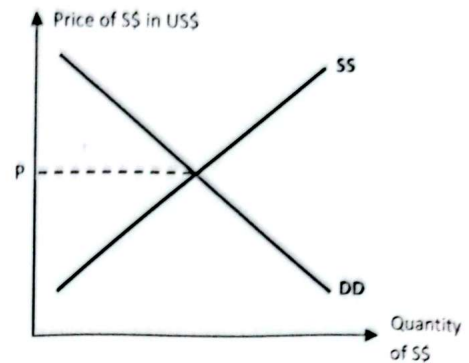
Consequences of BOP Deficits

Technically, BOP surpluses are bad as well since they may result in demand-pull inflation (due to high I and $X-M$) and also indicate a deficit in another country, which may hence adopt protectionist measures.

However, it seems exam questions are only concerned with deficits, since they are much more harmful.

- Current Account (Trade) deficit:
 - $X-M \downarrow \Rightarrow AD \downarrow$
 - External debt incurred through borrowing from other nations
 - **Evaluation:** Not a problem if deficit is short-term, as a result of country buying capital goods to increase export production.
- Financial Account (Investment) deficit: Outflow of FDI towards countries with lower labour costs or better opportunities will cause employment to fall
- Overall: Deficits draws down on government reserves, which may thus affect investor confidence.

- BOP is closely linked to the equilibrium exchange rate
 - Demand for a country's currency is affected by changes in its exports or capital inflows into the country; while supply is affected by changes in its imports or the capital outflows from the country.
 - Hence, BOP surpluses (more money going into the country) always result in an appreciation of the exchange rate, while deficits (money going out) result in depreciation.
 - Fluctuations in the exchange rate will subsequently affect AD and imported inflation.

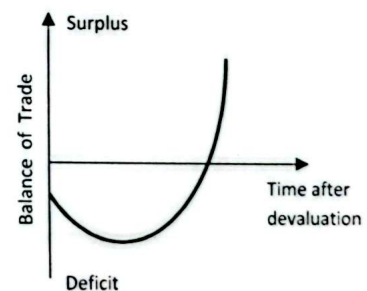


Policies to Correct Deficits

1. Expenditure Reducing Policies – i.e. contractionary fiscal and monetary policies
 - Reduce incomes to reduce demand for imports
 - Producers will turn to overseas markets => Exports increase as well
 - Raise interest rates to draw in hot money
 - **Reduces inflation** as well, but at expense of economic growth
 - Exports become more price competitive => $X \uparrow$ (this may slightly offset the fall in AD)
2. Expenditure Switching Policies – i.e. protectionism or lowering exchange rate
 - Protectionism to restrict imports: *Refer to Protectionism and its evaluations.*
 - Devaluation of domestic currency: Exports get cheaper while imports get more expensive, and assuming the Marshall-Lerner condition holds this will improve trade balance.

Evaluation:

- May be ineffective if export and import demand is price inelastic (i.e. M-L condition does not hold)
- Trading partners may retaliate by devaluing their currencies
- Spare resources must be available to meet the increase in demand for exports
- May result in imported inflation
- J-Curve Effect: Current account may actually *worsen* in short-run after devaluation with a reduction in export revenue and an increase in import expenditure, as it takes time for consumers to adjust to price changes
- SG: Export competitiveness will actually worsen due to the high import content of our exports, hence BOP will worsen.



3. Supply-side Policies – To increase output and quality of exports and hence their competitiveness.
 - ** MOST EFFECTIVE but takes time to work!

Taxation

Direct taxes: Taxes on the income and capital owned by individuals or firms, e.g. income tax. Tax burden cannot be shifted.

Indirect taxes: Taxes on goods and services, e.g. GST, customs duties. Tax burden is shared between seller and buyer, with the party that has a more price elastic curve bearing less of the burden.

- Specific tax: Fixed tax per unit of good, regardless of price. Supply curve shifts up evenly.
- Ad valorem tax: Tax is a fixed proportion of the price of good. Supply curve shifts up, but also becomes steeper.

Effects (*Fiscal Policy, Market Failure, Equity*)

1. *Redistributes Income*

Progressive taxes: Help to distribute income more equally, as they take into account one's ability to pay. As one's income increases, the proportion of it paid in taxes *increases*.

- Direct taxes are usually progressive, e.g. income tax
- Indirect taxes may be progressive, if they are levied on luxury goods
- Tax revenue can be used to help the poor through subsidies and welfare benefits, e.g. Workfare

Regressive taxes: Less equitable. As one's income increases, the proportion of it paid in taxes *decreases*.

- Lump-sum taxes are regressive
- Indirect taxes like GST are also regressive, as the poor bear a heavier burden since they tend to spend a larger proportion of their income on necessities.

2. *Corrects Negative Externalities*

If there are negative externalities involved in the consumption or production of a good, taxes can help to change consumption patterns or encourage producers to switch to other methods of production.

Evaluation: Taxes distort the price mechanism and hence affect the allocation of resources.

3. *Influences Productivity*

Depending on the income and substitution effect, a rise in taxes will either cause people to work more to make up for the fall in income or discourage them from working since they earn less for the same amount of work, hence affecting productivity and the AS curve.

4. *Reduces Consumption and Savings*

- Direct taxes reduce disposable income, which will cause consumption to fall to an extent that depends on the MPC
 - **Evaluation:** If people are already enjoying a high SOL and are able to save a lot, they may resist a reduction in their consumption by simply saving less instead (MPS falls)
- Progressive taxes also reduces how much people are able to save
- Indirect taxes reduces consumption to an extent that depends on the PED

5. *Reduces Investment – The reason why SG has been shifting from direct taxes (personal, corporate tax) towards indirect taxes (GST).* Due to taxes:

- **Savings ↓:** Reduces funds available for investment.
- **Expected rate of return ↓:** Reduces firms' incentive to invest, as per the MEI.
- **Supernormal profits ↓:** Reduces firms' ability to invest. (*Dynamic efficiency reduced*)
 - **Evaluation:** Not a problem if government reallocates tax revenue into R&D (SG does this)

Standard of Living & Reliability of GDP

[The standard of living is the quality of life enjoyed by people, and includes material and non-material well-being.]

GDP / GNP: Total market value of all final goods and services produced within the geographical boundaries of a country / produced by productive factors owned by residents of a country during a specified period.

How GDP/employment figures relate to SOL:

- High GDP, low unemployment => high overall per capita income levels => increased **availability** and **accessibility of material goods and services**, so people can enjoy more of them => high standard of living *[vice versa for negative NI figures]*
- BUT such figures do not indicate non-material goods and services available
- GDP statistics might also be unreliable.

Disproving GDP figures: (mostly applicable to both comparisons over time AND between countries)

- **Changes in price level:** Nominal GDP is misleading as it may rise due to a rise in prices (inflation) but not output
 - Real GDP more accurate since it accounts for price differences, so any rise must be from a rise in output.
- **Changes in population:** Even if absolute GDP grows, if population grows faster than it, then GDP per capita will actually fall.
- **Changes in exchange rate:** Since GDP figures are converted to US\$ for international comparison, they will be affected by fluctuations in the exchange rate, especially that due to governmental manipulation or capital flows
 - GDP per capita adjusted for Purchasing Power Parity (PPP) more accurate, as it reflects actual purchasing power of residents
- **GDP Composition**
 - GDP includes both consumption and investment goods but current living standards depend only on consumption goods.
 - Large proportion of GDP may actually be spent on goods which do not directly improve the welfare of the people (e.g. defence), rather than goods like infrastructure.
- **GDP Distribution:** Most of national income may be concentrated within the rich elite
 - Gini coefficient more reliable - measures inequality of income
- **Reliability of Data:** Firms and individuals might under-report their incomes in order to evade income taxes.
- **Non-monetised sector:** Services that do not pass through a market are not counted in the GDP
 - E.g. Charity work or Barter trade, especially in developing countries
- **Intangibles:** Externalities are unpriced by the price mechanism, hence not captured by GDP figures.
 - Factories might add to GDP, but create pollution
 - More jobs need not mean improved SOL, since people might be subjected to long working hours accompanied by stress from the workplace

Evaluation: Composite indicators provide more accurate reflection of standards of living, e.g. *Physical Quality of Life Index* which measures life expectancy, infant mortality rate and literacy rate.



International Trade

[Free trade is a policy of imposing no artificial restrictions on the movements of goods and services between countries.]

The pattern of trade describes who trades what, and is based on the theory of comparative advantage.

Illustration of the Law of Comparative Advantage

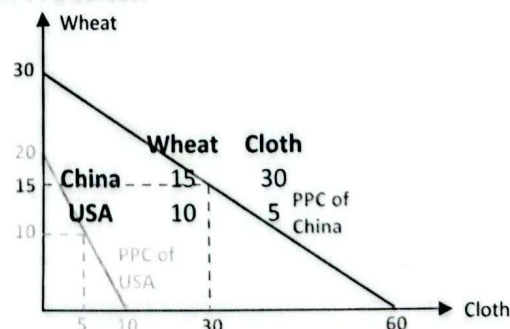
A country is said to have **comparative advantage** in the production of a good if she can produce the good at a lower opportunity cost than another country; the **Law of Comparative Advantage** states that trade can benefit all countries if they specialise in the production of goods where they have the lowest opportunity cost.

Assumptions	Limitations (when applying to real life)
Constant opportunity costs of production => Straight-line PPC This implies perfect factor mobility within each country, i.e. resources can be easily transferred from the production of one good to another	Law of Increasing Opportunity Cost: Countries will lose their comparative advantage as they specialise further, since the resources in the economy are not perfectly homogenous. Hence, complete specialisation not possible. Lack of Factor Mobility: Factors of production may not be quickly or efficiently moved into other uses
Factor immobility between different countries, i.e. each country can only use her own resources	
No transport costs nor trade restrictions, so full benefits of specialisation and trade can be felt	• Transport costs may be very high in international trade, making it cheaper to produce goods domestically than import them • Protectionism: Free trade does not always exist, and countries may want to protect certain industries even if they do not have a comparative advantage in them
	Product differentiation: Countries may produce similar goods but differentiate them enough such that countries producing similar goods will still import those goods. (Intra-industry trade)

We assume that two countries devote exactly half their resources to the production of each of two goods, with output as shown in the table and indicated on their PPC curves:

Production before specialisation:

	Wheat	Cloth
China	15	30
USA	10	5



1. Explaining comparative advantage:

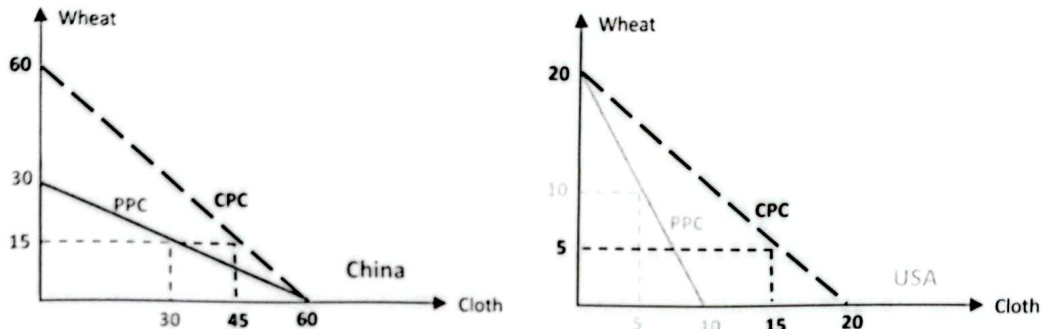
- China has a comparative advantage in cloth, since her opportunity cost of 1 cloth is 0.5 wheat, lower than that of USA, which is 2 wheat.
- Similarly, USA has a comparative advantage in wheat, since her opportunity cost of producing 1 wheat is 0.5 cloth, lower than that of China, which is 2 cloth.

2. Hence, both countries should specialise completely in its area of comparative advantage, so China and USA produce 60 cloth and 20 wheat respectively.

3. *Setting Terms of Trade (TOT):*

- For each unit of cloth, China will not accept less than 0.5 units of wheat, and USA will not pay more than 2 units of wheat. Therefore, the TOT for cloth is: $0.5 \text{ wheat} < 1 \text{ cloth} < 2 \text{ wheat}$.
- Similarly, for each unit of wheat, USA will not accept less than 0.5 units of cloth, and China will not pay more than 2 units of cloth. Therefore, the TOT for wheat is: $0.5 \text{ cloth} < 1 \text{ wheat} < 2 \text{ cloth}$.
- Assume that the TOT is set at 1 wheat for 1 cloth, so the Consumption Possibility Curve for each country is equal to this TOT.

4. Both countries now trade 15 cloth and 15 wheat.



5. *Explaining benefits from trade:*

- China can now consume 15 wheat and 45 cloth, 15 more cloth than before specialisation. Hence, specialisation and trade has allowed her to enjoy a higher level of consumption and standard of living.
- Similarly, USA can now consume at a point outside her PPC that was previously unattainable. She has also gained from specialisation and trade.

Benefits of Trade (and by extension, Free Trade and Globalisation)

In effect, larger markets for both producers and consumers.

1. Firms: Higher revenues through exports

- Promotes entrepreneurship, with the incentive of increased revenue from new markets
- (X-M) increases, AD increases via multiplier effect => Improved BOP, Economic growth

2. Firms: Lower costs

- Economies of scale reaped from increased output for the international market, esp. if fixed costs are high (high MES) but the domestic market is small
- Factor Price Equalisation: Prices of inputs in different countries are brought closer together
 - Firms can import inputs from the cheapest markets worldwide, since their supply is now perfectly price elastic

3. Consumers: Increased competition from foreign firms

- Prevention of monopolies
- Promotes X-efficiency among firms => Lower prices, higher quality products

EV: may be longer quality

4. Consumers: Greater amount and variety of goods and services available

Can consume outside of PPC => Increased SOL, reduced scarcity

5. Overall: Efficient allocation of world resources

By the Law of Comparative Advantage, if all country specialise in area of CA and trade, everyone gains from higher world output and consumption, given favourable Terms of Trade (TOT) for all

OVERALL:

- PPC shifts outwards (due to increased efficiency and lower costs), CPC shifts outside PPC, Consumption point shifts outside PPC => Increased SOL, reduced scarcity
- AD rises (from X), AS rises => Improved BOP, ECONOMIC GROWTH!

Protectionism (and why it fails)

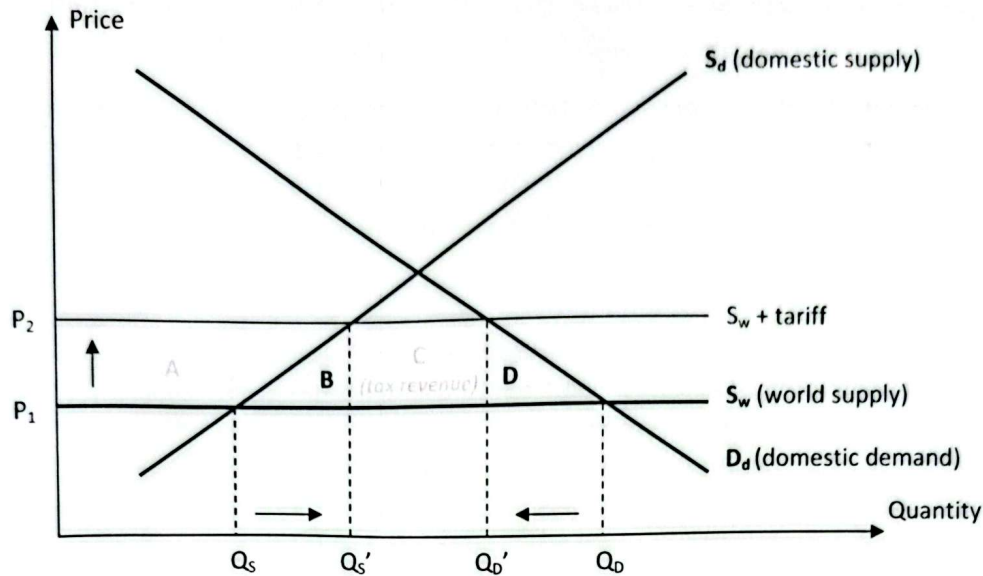
Arguments for Protectionism	Evaluation (see overall evaluations for protectionism below!)
Improve BOP (Expenditure-switching policy) Restriction of imports to curb excessive import expenditure over export revenue	- Protectionism is a "beggar-thy-neighbour" policy: Trade partners' incomes reduced => they import less (if demand is income elastic) => export revenue falls => BOP worsens, AD ↓ - At best a stop-gap measure, as this will cause retaliation from trade partners in the form of protectionism - Should opt for supply side or expenditure-reducing policies instead (see BOP policies) - For unemployment: If it is the result of a recession, domestic recovery may eventually be delayed since it can no longer be triggered by multiplier effects from exports.
Reduce Cyclical Unemployment - Importing foreign goods may mean creating jobs for foreign markets that would otherwise go to domestic labour, in effect "exporting jobs". - Protectionism will divert demand from foreign goods to domestically-produced goods, protecting employment in those industries.	
Reduce Structural Unemployment Allow declining industries to decline slowly, to prevent sudden structural unemployment by providing some buffer time for workers to be retrained and seek other jobs.	May actually hinder the restructuring of the economy, by preventing it from growing through the development of new sectors

Protection of infant industries • Infant industries have potential comparative advantage • Need to be protected from foreign competition in the early stages, to give them time to develop and reap economies of scale	• Difficult to determine which industries have that potential CA • Difficult to determine when to withdraw protection • May breed inefficiency and complacency
Competition from Countries with Cheap Labour Protect domestic industries from cheap goods coming from countries with the “unfair” advantage of lower wages • Also prevents the loss of jobs in affected industries	Hurts wages of workers in poor countries by curbing external demand, and not allowing factor prices to equalise across countries.
Protection against Dumping • Predatory dumping: Foreign firms sell goods in a market at a price below marginal cost, to destroy local competition. • The firm becomes a monopoly in that market, and can charge consumers higher prices.	Domestic producers may falsely accuse foreign firms of “dumping” when they cannot match their lower prices, which may actually be so due to them being more efficient.
Improve TOT Restrict imports, so foreign firms lower prices and the country gains from higher TOT.	Only works if a country can dictate world prices (<i>monopsonistic power</i>), not if it is a price taker.
Protection of strategic industries To remain self-sufficient especially for times for war, even if country has no CA in those industries.	<i>(See below for evaluations that apply to all points.)</i>
Protection against harmful goods	
Political objectives – e.g. embargoes	
Trade Diversion (applies ONLY to FTAs) • Members of an FTA may import goods from other members instead of more efficient producers elsewhere in the world, simply due to the lack of tariffs. • Just a diversion from an external source to a new source within the FTA, so little gains from trade may be made.	

Overall arguments *against* protectionism:

- Goes against the Law of Comparative Advantage – Loss of CA in one sector should drive a country to source for new areas of CA
- Country forgoes gains from trade from purchasing more efficiently produced foreign goods
- Resources tied up in protected industries cannot be used for other more efficient industries
 - Misallocation of resources
- Perpetuates domestic inefficiency
- Consumers ultimately suffer from having to pay higher prices.

Protectionism, in the form of tariffs:



Tariffs or quotas can be set to reduce imports from $(Q_d - Q_s)$ to $(Q_d' - Q_s')$, but at the cost of a deadweight loss to society equal to the loss in consumer surplus not transferred to other sectors, shown by areas B + D.

- A + B + C + D: Total loss in consumer surplus
- A: Increased producer surplus for domestic producers (*Redistribution Effect*)
- B: **Deadweight loss** from the extra cost incurred by domestic producers to produce $(Q_s' - Q_s)$, which could have been imported at P_1 instead. (*Protective Effect*)
- C: Tax revenue collected by government (*Revenue Effect*)
- D: **Deadweight loss** due to under-consumption. (*Consumption Effect*)

Tariffs vs. Quotas

Tariff	Quota
• Still allows market to operate • Provides tax revenue • Effectiveness depends on price elasticity of demand	• More restrictive • No revenue to government • Foreign producers may gain by raising prices

Globalisation

[Globalisation is the growing economic interdependence of countries worldwide through an increase in international trade, capital, labour and knowledge flows.]

In other words, globalisation involves an increase in international (1) trade, (2) capital flows (remittances, FDI), (3) labour movements, (4) outsourcing and offshoring and (5) technology transfers, brought about by:

- Technological advancements in communication and transportation, and
- Reduction in protectionism among countries (e.g. signing of more FTAs)

Benefits

Since the increase in international trade is a subset of globalisation, the benefits of trade also apply here, i.e. Higher export revenue, lower costs, increased foreign competition and higher consumption

- Ultimately: Economic growth and Higher SOL
- Increased signings of FTAs also ensure export competitiveness, further stimulating export growth
- Factor Price Equalisation means wages in poorer countries increase => Equity across markets
 - BUT incomes of low-skilled labour in developed countries will fall
 - Increasing demand for skilled workers but falling demand for unskilled labour => Growing income gap in developed countries (SG is ranked bottom 29th in terms of Gini Coefficient!)

Other benefits from increased capital, labour and knowledge transfers:

- Capital: Increased income from abroad through FDI (↑ I) and remittances
- Labour: Greater opportunities to attract foreign talent, to augment the labour force and create potential growth (see Supply-Side Policy)
 - SG: Especially relevant due to our cosmopolitan environment, social and economic stability and pro-foreign talent policies
- Labour: Opportunities for firms to outsource to countries with CA in labour costs
 - BUT may cause domestic structural unemployment
- Knowledge: Accelerated economy restructuring (e.g. towards Knowledge-Based Economy)
 - Loss in comparative advantage (e.g. in labour-intensive industries) may provide opportunities to develop new areas of CA
 - BUT may also result in structural unemployment, esp. among elderly or low-skilled workers
- Knowledge: Ease of transfer of technology => Developing countries can catch up faster
 - BUT developed countries may hence lose their comparative advantage in R&D
- Influx of MNCs brings improved technology and management skills, and creates competition with domestic firms, hence increasing productivity => AS ↑
 - BUT foreign competition may stifle domestic producers
 - Over-reliance on MNCs also makes economy vulnerable, due to their footloose nature

Costs

- Contagion: Economic crisis in one country will affect all other countries.
 - Trade channel: Affected country will import less and depreciate currency, causing other countries' exports to fall and imports to rise.
 - Financial channel: Investors worldwide lose confidence and withdraw investment
 - Hence, countries may be more susceptible to recessions
- More susceptible to imported inflation through direct and indirect effect (see Inflation), due to increased amount of imported goods in market
- Brain Drain: Loss of skilled workers reduces economy's productive capacity.

Singapore is a prime example of globalisation, due to our **small** and **open** economy.

- **Small:** Small domestic market, limited resources
 - Price taker of world prices set by global demand and supply, as we are too small to influence it
 - We need to import most necessities and raw materials => Susceptible to imported inflation
 - Heavy reliance on exports for growth
- Hence, we are very **open** to trade and capital flows: Trade volume 4 times of GDP; import spending and export expenditure each make up over 150% of our GDP

Effect of Globalisation on Policies (esp. for SG)

1. Fiscal Policy may become less feasible due to:

- Lower tax revenue from reduced tariffs and corporate taxes
 - **HOWEVER**, this may be offset by the increase in tax revenue due to economic growth
- Yet, increased government expenditure required to correct income gap, and build infrastructure to create a more competitive environment
- Government may hence incur budget deficits and public debts
- SG: Also ineffective due to our low multiplier and lack of C (domestic demand)

2. Interest Rate Centred Monetary Policy may also be ineffective:

- Any changes in domestic or foreign interest rates will result in large and quick movements of capital => Difficult to control money supply
 - SG: We are *interest rate takers*, since if we try to increase i/r , there will be capital inflows and a rise in money supply (as above), so i/r falls back to equilibrium
- Such capital flows will also affect the exchange rate, which may again cause imported inflation

3. Exchange Rate Centred Monetary Policy most effective, as it helps to maintain a stable exchange rate to prevent imported inflation

- Main tool in SG, to achieve price stability for long-term economic growth.

Evaluation:

- **Transmission Lags:** Changes in the exchange rate takes time to influence AD and prices, and a short-term worsening of BOP may occur (J-curve effect).
- **Price Elasticity of Export/Import Demand:** Depreciation may not significantly increase trade balance if Marshall-Lerner condition does not hold, or if trade partners' incomes are falling.
- **Foreign Reserves:** Central Bank (MAS) requires large foreign reserves to intervene in the exchange rate, but that incurs the opportunity cost of the potential growth that could be gained from investing it instead.
 - BUT SG's prudent fiscal policy provides consistent surpluses which allow us to build our reserves. GIC also invests it in various markets, ensuring healthy returns.
- **Relinquishing Control over Interest Rates and Money Supply:** Since exchange rates and interest rates affect each other, only one can be controlled.

4. Supply-Side Policy all the more needed, to gain comparative advantage in R&D

- Primary objective of SG is to promote long-term economic growth through supply-side policies (rather than influencing AD)

5. Trade Policy:

- Increased pressure for countries to lower import tariffs
- However, the threat of globalisation towards domestic producers may actually result in protectionistic measures to protect employment and output

Overall for SG: In a recession, macro policies can only cushion its impact on us; our trade partners must recover first for our economy to rebound.