H2 ECONOMICS CONTENT REVISION | NIGEL FONG 2010

Note: This is a content revision. Content used must be relevant and it alone is not sufficient. Careful question analysis and strong argumentation, including synthesis, is of paramount importance.

A SUPPLY, DEMAND, ELASTICITY

1 Explain the shape of the PPC, and how and why the PPC can shift outwards

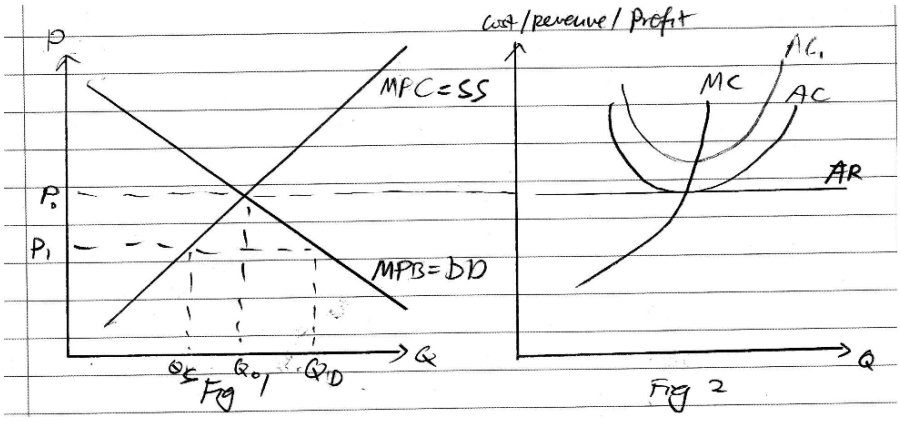
The production possibility curve is a graph showing the maximum attainable combinations of goods & services that can be produced by an economy, at a given state of technology, when all resources are used fully and efficiently. The PPC is bowed outwards, reflecting increasing opportunity cost. As production of one good increases, greater and greater quantities of the alternative good is sacrificed; factors of production not being perfectly suitable to the production of both goods means that as production of one good increased, resources that are less and less suitable start being used, so more and more resources are diverted from the alternative good.

An outward shift in the PPC reflects an increase in an economy's productive capacity. This can come about due to an increase in the quality or quantity of factors of production (land, labour, capital, and entrepreneurship) e.g. an increase in labour due to population growth or immigration, or technological improvement such that more goods can be produced from a given quantity of factors of production.

The shift can be skewed if the new resources are better suited to the production of one good, as when an increase in capital suits the production of capital-intensive goods, or parallel, if the new resources or technology are equally suited to the production of both goods.

2 Explain how the free market can lead to an efficient allocation of resources

Efficiency refers to allocative and productive efficiency. AE is a pareto optimum allocation of resources among different goods, where no one can be made better off without someone else being made worse off. PE is the minimization of resources required to produce a certain quantity of a certain good.



Explain AE: In the pursuit of self-interest, consumers consume water at the quantity where the utility of the marginal unit of water consumed equals its price i.e. the opportunity cost in terms of the alternative good forgone, hence achieving allocative efficiency.

(price adjustment process) The price mechanism automatically corrects for shortages and surpluses. Suppose at a prevailing price P1, there is a shortage of Qd-Qs. (Fig 1) Consumers recognize the shortage and bid up the price to P0 and quantity to Q0, where market clears and marginal private benefit = marginal private cost and marginal social benefit = marginal social cost assuming no externalities.

Explain PE: Assuming PC, market forces also incentivise producers to achieve PE, for ineff firm with AC1 (Fig 2) cannot make a profit (AC>AR). Even in imperfect market structures, firms have the incentive to search for the least-cost method of production and minimize X-inefficiency e.g. prestige buildings to increase profits.

3 Explain what determines the price of rice

Ceteris paribus, price of rice increases if demand of rise rises, when

- tastes and preferences favour rice
- price of substitutes e.g. corn rise or price of complements fall
- Population grows
- People expect future prices to rise
- Income rises, assuming rice is a normal good (YED between 0 and 1)

Ceteris paribus, price of rice falls if supply of rice rises, when

- Cost of production fall e.g. irrigation becomes cheaper
- Price of goods in joint supply rise or price of goods in competitive supply (e.g. cash crops) fall
- Technological improvements e.g. mechanization reduce costs
- Governental policies e.g. mandate an increase in land allocated to rice production
- Suppliers anticipate future price falls and hence sell now (but in the longer run supply may fall too as they plant less rice)

Explain the price adjustment process in Q2

4 Using examples, illustrate: (i) Joint demand, (ii) Competitive demand, (iii) Derived demand, (iv) Joint supply, (v) Competitive Supply

Goods in joint demand are complements; the use of one good requires the use of the other good to generate satisfaction. For example, mattresses and pillows are in joint demand as both must be used together to provide a good night's rest. An increase in the quantity demanded of mattresses would lead to an increase in demand for pillows.

Goods in competitive demand atisfy the same want and are thus close substitutes. For example, chicken and duck both satisfy one's craving for meat. A rise in the price of chicken (leading to a fall in the quantity demanded for chicken) would thus lead to consumers increasing demand for duck since duck is now relatively cheaper than chicken i.e. they can satisfy their cravings for meat at a lower cost.

Goods that are in derived demand are goods that are demanded not for their own sake but for the production of other goods and services. For example, labour is needed for the production of aircraft. An increase in the demand for aircraft would thus result in an increase in the demand for labour.

Goods in joint supply are obtained from the same source, thus the increase in the quantity supplied of one would lead to the increase in supply of the other. For instance, an increase in the quantity supplied of beef would result in an increase in the supply of hide since the killing of a cow would allow one to obtain both beef and hide.

Goods in competitive supply utilize the same factors of production. An increase in the quantity supplied of a good, diverting more FOPs to that good, reduce the amount of FOPs available to the alternative good, leading to a fall in supply in the latter. For instance, an increase in the quantity supplied of maize for biofuel would result in a fall in supply of maize for food, given that both maize for biofuel and maize for food are grown on the same scarce arable land.

5 With examples, explain the determinants of (i) Price-elasticity of demand, (ii) Price-elasticity of supply, (iii) Income-elasticity of demand, (iv) Cross-elasticity of demand

PED is the responsiveness of quantity demanded to a change in price, ceteris paribus. Demand becomes more price-elastic the greater the no. and closeness of substitutes: hence the demand for chicken rice is more price elastic than that for windows OS, since faced with a rise in price of chicken rice from one stall, consumers can patronize another, but this is not the case for windows. The greater the percentage of income spent on the good, the more price-in elastic the demand, as consumers are forced to reduce consumption faced with a rise in the price of the good. Hence cars are more price-elastic than handphones. The greater the time period, the better able consumers are to find alternatives, hence the greater the price-elasticity. Finally, the less of a necessity the good is, the more price-elastic the good. 1

PES is the responsiveness of quantity supplied to a change in price, ceteris paribus. Supply is more price-elastic in the long term than the short term, since producers can source for more factors of production in the long-term. The greater the availability of stocks and spare capacity, and the shorter the production period, the more price-elastic the supply, as new supply can come onstream more quickly. Greater factor mobility also helps since when variable factors can be put to use more easily, MC rises less slowly as quantity increases, allowing greater increase in quantity for a given increase in price.

YED is the responsiveness of quantity demanded to a change in consumer income, ceteris paribus. This is a non-price determinant of demand, so changes in income shift the demand curve. Inferior goods, i.e. low-quality but cheaper substitutes like cheap pirated DVDs, for which demand falls as income increases and people choose to buy better goods, have a negative YED; normal necessities like staples – rice, etc, for which demand rises less than proportionate as income rises, have a YED of 0 to 1. Normal luxuries, e.g. expensive Rolexes, which are not necessary for daily life, exhibit demand that increases more than proportionately to price, i.e. YED > 1. What may be a inferior good here may be a luxury good in another country!

CED is the responsiveness of quantity demanded to a change of price of another good, ceteris paribus. Complements like petrol and cars, with a negative CED, are consumed together, each requiring the other to generate satisfaction; substitutes like blackberries and iphones have a positive CED and are alternatives that satisfy the same want. The more closely related the 2 goods are, the greater the magnitude of CED; a CED of 0 implies unrelated goods.

6 How might firms employ the various elasticity of demand concepts?

A firm wishing to maximize revenue (price x quantity) can employ the price elasticity of demand concept. If the firm's product is price inelastic in demand (or price inelastic in demand in some segments of the market), it should raise prices to increase revenue since the increase in revenue as a result of increased prices would be greater than the fall in revenue as a result of a fall in quantity demanded. However, if the firm's product is price elastic in demand (or price elastic in demand in some segments of the market), it should reduce prices to increase revenue since the increase in revenue as a result of a rise in quantity demanded would be greater than the loss in revenue as a result of a fall in the price of the good.

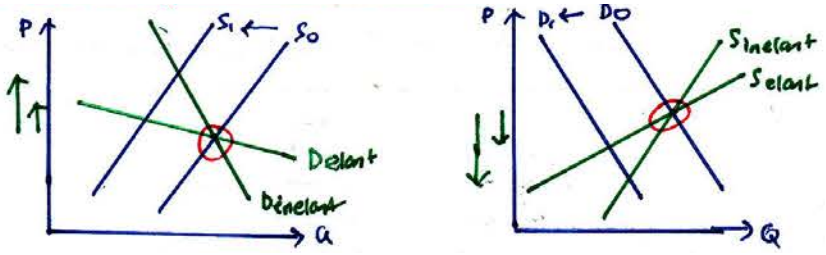
The price elasticity of demand concept can also be applied to a firm's marketing strategy. Large supermarket chains that are involved in bulk selling and thus reap huge internal economies of scale could focus on selling products that are price elastic in demand since the cost savings as a result of these economies of scale can be passed on to consumers in the form of lower prices. This would lead to an increase in quantity demanded by more than proportionate, leading to an overall increase in the chain's revenue. On the other hand, small provision shops that are unable to reap huge internal economies should focus on selling products that are price inelastic in demand such as cigarettes since they can sell these goods at higher prices without experiencing a fall in total revenue.

The income elasticity of demand concept can be applied to a firm's marketing strategy. Should there be an increase in income, a watch company such as Casio can focus on marketing upmarket watches and increasing the production of such watches since there would be a more than proportionate increase in demand for these watches. However, should there be a fall in income, Casio should then change its focus to marketing value for money watches. Demand for watches fall less and while revenue might still fall

The cross elasticity of demand concept can be applied to a firm's pricing strategy as well. Casio for instance, has to keep a close watch on the price of watches from its competitors such as Swatch since both firms sell watches i.e. close substitutes and react fast to any change in price of Swatch watches lest it experiences a fall in demand for its watches. At the same time, Casio should adopt strategies to differentiate its watches from Swatch so as to make them less substitutable to Swatch watches. Casio should align its marketing strategy with the pricing strategy of firms selling complementary goods such as luxury men's wear firms like Armani since fall in the prices of these luxury products would lead to an increase in demand for Casio's products.

7 Explain the significance of PED and PES in determining the magnitude of price changes for a given shift in demand or supply?

Price-elastic demand means that a given change in supply results in a less than proportionate change in price, while price-inelastic demand means that a given change in supply results in a much greater change in price i.e. price needs to be bidded up/down much more for equilibrium to be restored. Similarly for price-elastic and inelastic supply, given changes in demand. Make sure you can make sense of this graphically – both elastic and inelastic curves start from same point



8 Examine the limitations of the various elasticity concepts

- Ceteris paribus condition may not hold. We predict that demand for diamond rings will fall when price of gold bracelets fall, assuming everything else constant. However, if income is rising rapidly (e.g. in china), in fact demand for both may rise.
- Hard to estimate the values of PED, YED, CED, and estimates may be based on outdated data.
- Using PED to maximize revenue – firms maximize profits, not revenue, and that depends on cost-side factors too; price cannot be brought too low.

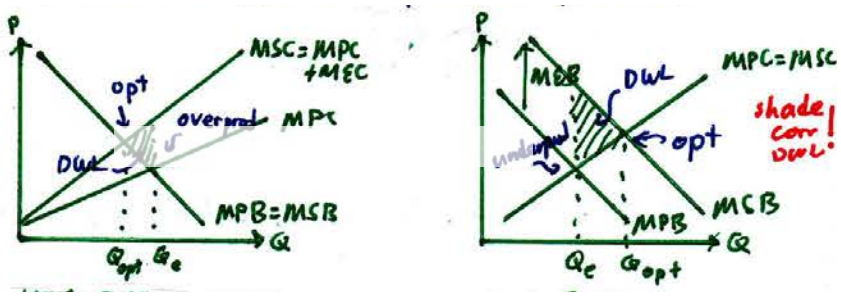
B MARKET FAILURE (note equity problems are also market failures)

1 Explain the negative externality that arises from cigarettes, and the positive externality arising from education

Market failures occur when the unregulated free market fails to achieve an efficient allocation of resources, or meet social goals. Externalities are 3rd party effects arising from the production or consumption of a good/service, for which the 3rd party neither pays not receives compensation.

(illustrate always as externalities in production. Ensure correct diagram - triangle points to optimum)

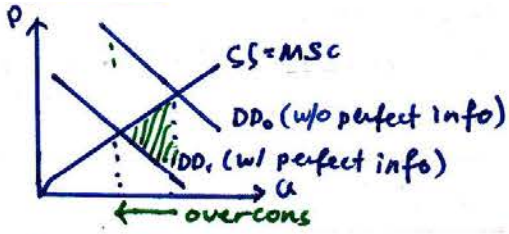
Cigarettes illustrate negative externalities. In the pursuit of self-interest, cigarette producers will only consider private costs, ignoring external costs like second-hand smoke, creating a divergence between MSC and MPC of the distance of the MEC. Assuming MEB=0, i.e. MSB=MPB, the free market results in an overproduction of Qeqm – Qopt, above the socially optimum output Qopt where MSC=MPC, resulting in a deadweight loss (shaded), which indicates an inefficient allocation of resources by the free market.



Education, on the other hand, shows a positive externality. In the pursuit of self-interest, educational institutes only consider private costs, ignoring external costs like the benefit of a more-skilled workforce on the national economy. This creates a divergence between MSB and MPB of the distance of the MEB. Assuming MEC=0, i.e. MPC=MSC, the free market results in an underproduction of Qopt-Qeqm below the socially optimum output Qopt where MSC=MSB. The resultant deadweight loss indicates an inefficient allocation of resources by the free market.

2 Explain why alcohol is a demerit good

Demerit goods are goods that the government considers bad for society. With imperfect information and ignorance on the consumer's part, addiction and habit, coupled with persuasive advertising emphasizing the benefits of alcohol, consumers underestimate their marginal personal conts, and overconsume alcohol of a distance Qeqm-Qopt above the social optimum Qopt. The resulting deadweight loss indicates an inefficient allocation of resources by the free market.



Alcohol is also a demerit good due to negative externalities that arise in its production.

There are 2 arguments for demerit goods: imperfect information and negative externalities (converse for merit goods). Imperfect information is the more important one, and you should focus on this for low-mark case study qns or where externalities are separately mentioned. But you should mention both if demerit goods are specifically asked for in an essay, and externalities are not already mentioned.

3 Use examples to illustrate what is meant by a public good

Public goods are non-rivalrous and non-excludable. Non-rivalry means that consumption of the good by one person does not decrease the amount available to others, for instance, the protection national defence confers to one individual does not detract from the extent to which the same defence may protect another. Non-excludability means that it is not possible to exclude non-payers from, e.g., using a footpath. This leads to a free-rider problem where no-one has the incentive to pay. As a result, public goods will not be provided by an unregulated free market even if there is demand for it, leading to an inefficient allocation of resources. However, entrepreneurs may find innovative ways of overcoming this problem e.g. advertising on radio.

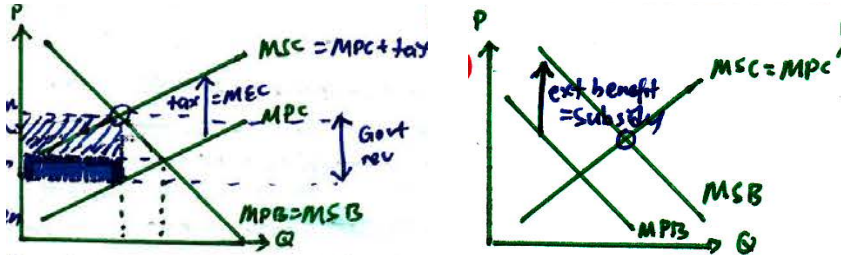
4 Explain how imperfect information and immobility of factors of production lead to market failure

(previous essay question, unlikely to see again)

5 How might governmental intervention correct market failure? How effective, desirable, and feasible are these measures?

For policy comparison: choose tax + ban/quota + longterm measure (education/ direct provision) for e.g. externalities.

TAXES Negative externalities may be corrected by taxes of the magnitude of the MEC; subsidies may be correct by subsidies of the magnitude of the MEB. This internalizes the externality, achieving the socially optimum output with no deadweight loss. The same may be applied to correct merit/demerit goods, with the tax/subsidy equal to the magnitude of the imperfect information.



Evaluation: you do not have to write everything. Pick what is most relevant to a given context.

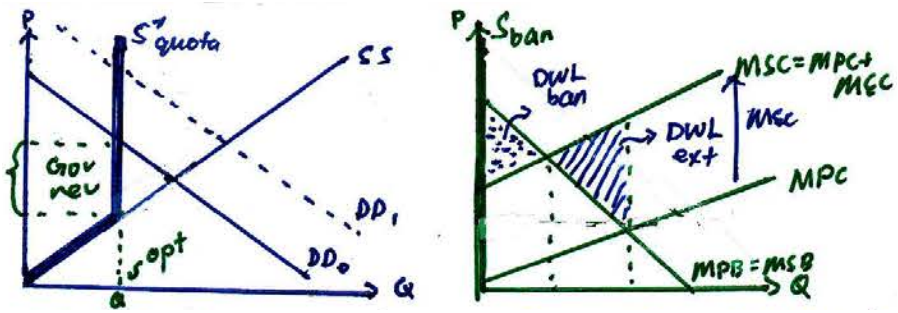
Effectiveness (whether aims can be met)**:** Taxes and subsidies provide an incentive to reduce

consumption of goods with negative externalities/demerit goods, and increase consumption of goods with positive externalities / merit goods. They are adjustable to reflect the magnitude of the external cost/benefit or imperfect information. As market-based solutions, they allow market forces to continue operating, such that price and quantity at equilibrium changes with demand and supply conditions, preventing surpluses or shortages. **However,** they are effective only to the extent that the external benefit/cost or imperfect information can be accurately valued. Overvaluation or undervaluation results in a equilibrium quantity that is not socially optimal, leading to welfare losses and inefficiency.

Desirablity (welfare effects)**:** Taxes raise governmental revenue, which can be spent e.g. on direct provision, while subsidies involve taxpayer layouts. Changes to prices of goods may have effects on inflation and export competitiveness, while removing negative external costs e.g. of pollution improve tourism and productivity.

Feasibility: Taxes are quick and relatively easy to implement, however, taxes may be evaded and encounter political resistance.

QUOTA/BAN



Quotas like COE limit output, such that changes in demand will be reflected by changes in price i.e. the good is auctioned; bans are a quota of zero.

Quotas may be effective in the short-term, but the optimum output may not be estimated correctly especially when MEC/MEB is unknown, and changes in demand/supply cannot be reflected quickly in the price and output, so even a quota that perfectly eliminates deadweight losses gets the output wrong when demand and supply change, resulting in inefficiencies. While banning is the easiest to implement (feasibility), it incurs an additional deadweight loss (desirability).

LEGISLATION can correct externalities and merit/demerit goods by forcing consumer/producer behaviour to result in a more desirable outcome than that achieved by the free market. For instance, polluters may be forced to bear the cost of proper waste disposal, education is made compulsory, alcohol sale to the under-18 is banned etc. The extent of imperfect information can also be reduced e.g. outlawing misleading labeling e.g. 'mild' cigarettes, health warning on cigarettes etc. If not strictly enforced, it is only of questionable effectiveness. Enforcement also incurs costs.

EDUCATION / INFORMATION PROVISION e.g. anti-gambling campaigns can help to correct merit/demerit goods by making the real private benefit/cost known, e.g. of the harms of smoking,shifting demand towards the desirable level and removing imperfect information. Education may put pressure on firms to reduce external marginal costs e.g. by inducing hostile public reactions to pollution. Immobility of factors of production can also be corrected with information provision e.g. job fairs etc. However this is again a long-term incurring significant costs with uncertain return.

DIRECT PROVISION is used for merit goods and public goods. Merit goods e.g. education is provided without charge or well below cost due to significant positive externalities, imperfect information (if people had to pay, they might go without), and issues of equity i.e. access to such goods is seen to be a right and not provided according to ability to pay. In the case of public goods, governmental provision is necessary (does not mean government carries it out – it can subcontract the service but pay for it) for overall economic efficiency since the free market will not produce those goods. However the exact amount of public good to produce is unknown, and such provision incur opportunity costs.

6 How might government failure set in?

- Imperfect information, improper estimates of MEC, so wrong Qopt set
- Time lags – to identify the problem, come up with the policy, and implement the measures, so the extent and nature of the problem may have changed by the time the govt steps in
- Incentive problems – govt panders to political interests rather than economic efficiency
- Equity vs efficiency conflicts, esp sin taxes on alcohol, cigarettes etc affect the poor more.

C THEORY OF FIRM, MARKET STRUCTURE

Important note:

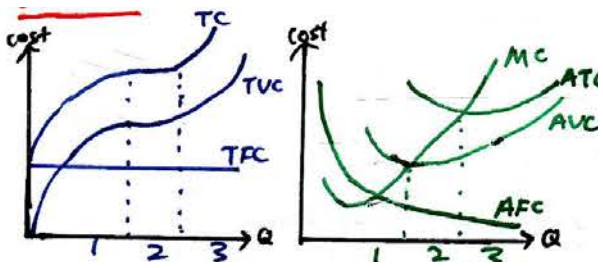
Factors can be subdivided into two categories: Fixed Factors, which cannot be changed very easily, e.g. land and fixed capital such as machinery, and Variable Factors which can be changed quite rapidly, e.g. labour and raw materials (circulating capital).

These different factors define the two time periods within which the firm operates – the short run (SR) and the long run (LR). The SR is the period of time within which at least one (significant) factor remains fixed. The LR is the period of time within which all factors of production can be altered. Note these are not fixed periods of time but will vary from industry to industry.

TC, TVC, AVC, MC, diminishing marginal returns etc analysis is in the SR, i.e. given fixed factors of production, what happens to the cost of production as it alters its variable factors.

In the LR, given it can alter all its factors, what happens to the cost of production as it alters its output and plant size. This is referred to as returns 'to scale' i.e. economies of scale.

1 How do total costs, total variable costs, total fixed costs, average fixed costs, average variable costs, average total costs, and marginal costs vary with output?



Total fixed costs are the sum of all costs of production for use of fixed factors. These are incurred even at zero output, e.g. rental costs of the factory, which is fixed in the short run and does not change with output. Average fixed costs, i.e. TFC/Q, hence fall as with increasing output, TFC is spread out over more and more units.

Total variable costs are the sum of all costs of production for used of variable factors, average variable cost is TVC/Q. Variable costs vary directly with the level of production and are zero at zero output, e.g. wages, power. Initially, TVC increases at a decreasing rate, and AVC falls due to specialization: as fixed factors are used more and more efficiently by variable factors (e.g. through assembly-line specialization), each variable factor adds more and more to output. However, in stage 2, diminishing returns set in; as more variable factors are added to a fixed factor, poorer factor combination (e.g. too many aunties in the tiny char kway teow stall bumping into each other) results in less efficient variable factor use, so each variable factor adds less and less to output.

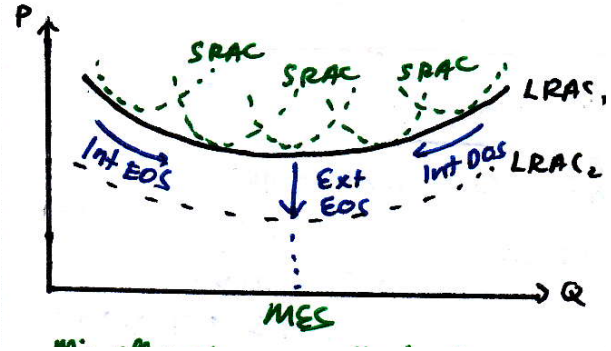
Total cost is the sum of total variable and fixed costs, average total cost is total cost divided by quantity. The shape of the TC curve is simply TVC shifted upwarded by the magnitude of TC, while for the ATC curve, in stage 2, AVC rises but ATC falls as the falling AFC offsets the rise in AVC.

Marginal Cost (MC) is the additional cost of producing one more (or less) unit of output. It can be calculated by MC = $\Delta TC/\Delta Q$ or $\Delta VC/\Delta Q$. MC is J-shaped as MC falls briefly (increasing marginal returns), but then rises (diminishing marginal returns). (MC cut AC at AC minimum)

Note: shutdown condition is when TR<TVC – i.e. even variable costs cannot be covered. FC is fixed already and are incurred whether or not the firm shuts down, so those are not relevant in the decision.

2 **Explain internal and external economies and diseconomies of scale, raising relevant examples and with a suitable diagram**

Link to rising/falling costs



Internal EOS are the fall in LRAC as a result of firm expansion. It is reflected as a movement along LRAS towards the Minimum Efficient Scale, the smallest plant size beyond which significant IEOS are not enjoyed. Technical IEOS is incurred where increasing firm size gives technical cost savings, e.g. making better use of an indivisible machine to produce more output. In the airline industry, bigger planes can carry more passengers without as significant an increase in fuel consumption, or additional landing fees. Managerial IEOS may arise due to greater use of existing staff, so their wages can be spread over greater output. Commercial IEOS comes from lower costs in bulk advertising and bulk purchase from suppliers. R&D IEOS arise as larger firms can afford greater R&D by spreading R&D overheads over greater output. Finally, large firms may enjoy risk-bearing IEOS due to diversity of market e.g. if demand in Singapore for their good falls, Malaysian demand may offset or mitigate this fall. (2 egs are usually enough)

Internal DOS are a rise in LRAC due to firm expansion. This arises due to management complexity, e.g. rigid organization red-tape, coordination difficulties, leading to slow decision making and slow response to changing demand and supply conditions, hence the firm produces less for the costs it incurs. Also, strained relationships with long and impersonal chains of authority may lead to slacking and apathy, reducing productivity and raising costs.

External EOS are the falls in average costs that occur to all firms in an industry due to industrial expansion or concentration at a location. It is represented by a downward shift in LRAC. Economies of concentration e.g. due to skilled labour (Silicon Valley), reputation (Broadway), or well developed infrastructure (Jurong Island) reduce costs. When subsidiary industries develop to cater to the needs of the main industry, economies of disintegration allow firms to procure inputs at a lower cost. Trade journals provide economies of information, lowering R&D costs.

External DOS is the rise in AC occurring to all firms in an industry due to the industry's expansion or concentration at one location. This occurs due to infrastructural strain e.g. congestion, or rising costs of factors of production.

3 **Distinguish between the different market structures**

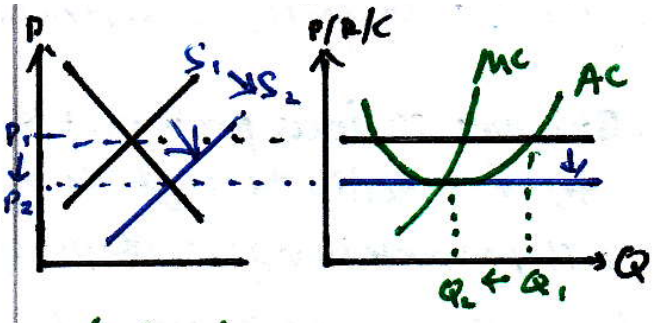
No of sellers in relation to market size: PC and MC consist of many small independent firms, Oligopolistic industires have few large independent firms, and large monopolists tend to be the only significant firm in the market.

Product differentiation: PC products are homogenous (hence the buyer cannot show preference to one firm), products in MC are differentiated but are close substitutes for each other, products in oligopoly may be homogenous (oil) or largely differentiated, and for monopolies, one unique product in each category is offered i.e. no competitors (but a range of products in different categories may be offered by different firms).

Knowledge: Only PC assumes perfect knowledge, where producers know rival prices, production costs, and technology, and consumers know the price and quality of the good. Imperfect knowledge exists in the other market structures, where firms do not know each other's cost curves, and neither do consumers. The less competitive the market structure, the more imperfect the information.

Barriers to entry: None in PC and low in MC, as mobile factors of production are available to all firms at a uniform price, so no firm has a cost advantage. The lack of transaction costs, as well as exit cost make these markets competitive. High barriers to entry are incurred in oligopolistic and monopolistic markets (see Q6).

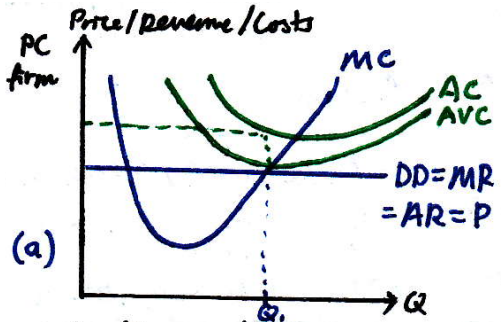
Profits: PC and MC firms make only normal profit in the long run. Suppose, for a PC market, supernormal profits are made at the prevailing price P1. The lure of the supernormal profits, and lack of barriers to entry, allow new firms to enter, increasing supply such that price falls to P2, where firms make only normal profits. Barriers to entry mean, however, that supernormal profits can persist in the long run for oligopolists and monopolists.



Competition: PC firms engage in price competition, non-price competition being irrelevant as the good is assumed to be homogenous. MC firms engage in both price and non-price competition. Oligopolists favour non-price competition, price-competition may break out but price is usually stable. Monopolists don't face much competition

4 Explain how price and output are determined in competitive markets.

Firms aim to maximise profits. Firms produce at MC=MR, and MC is rising, where MC is the addition to TC from the production of an additional unit of good/service, and MR is the addition to TR from the production of an additional unit of good/service. In the figure below, this output is Q1. Below Q1, MR>MC, so every additional unit adds more to revenue than costs, and the firm can increase profit by increasing production towards Q1. Similarly, above Q1, every additional unit adds more to costs than revenue, so profit is increased when production falls towards Q1.



The MC=MR profit maximising output holds for all market structures. Since firms may set price or output but not both, if output is set, the price then depends on the market structure in which the firm is. For PC firms, for instance, price is determined by market supply and demand, firms take this price and set their individual output. A monopolist will charge a much higher price than the PC firm for the same output

While it is assumed that firms attempt to profit-maximize, in reality, firms may not subscribe to this objective. There may be other objectives such as the sales revenue maximization. In such cases, firms do not determine prices and output at which MR = MC. Other factors e.g. demand, supply, and governmental policies also determine price and output.

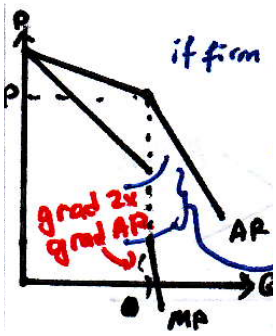
5 Explain how price and output are determined in an oligopoly

(Q4 analysis on price and output determination for a general firm is also relevant)

Oligopolists face conflicting objectives: to maximize industry revenue (and hence collude), but also to maximize individual market share (and hence compete).

Collusion is likely if there are few firms, and hence easier communication and monitoring to avoid cheating. Stable demand and supply conditions favour allocation of quotas, while similar cost conditions reduce the incentive to cheat and undercut other firms. Collusion may be formal, i.e. a cartel like OPEC, in which output quotas or prices are set. Collusion may also be tacit, e.g. price leadership by a dominant firm (the largest firm), or a barometric firm taken as an indication of demand/supply conditions, or a tacit agreement not to poach each other's market.

Oligopolists also compete. Prices tend to be stable/rigid, as explained by the kinked demand curve. The demand curve firms face is kinked at the current price. If the firm increases price, other firms will not follow, so demand is price-elastic and the firm has no incentive to increase price, since it will lose TR and market share. If the firm cuts price, other firms will follow, giving price-inelastic demand and no increase to market share. Hence the prevailing price tends to be rigid, and fluctuations of MC within the region of indeterminacy results in no change in price. However, price wars may occasionally break out, when there is excess capacity, new firms appear, or firms undercut each other to drive out rivals and increase market share – the firm with the greatest resources to sustain short-run price wars survive.



Oligopolists tend avoid price-competition and favour non-price competition. This may come in the form of real physical differences in product innovation to give better-quality products, imaginary differences in packaging or advertising, or different conditions of sale with different location and quality of service e.g. pepper lunch in foodcourts and restaurants. All of these increase demand for a firm's product and make demand more price-inelastic. (note non-price competition is also present in MC markets). Unique to oligopolists is the phenomenon of brand proliferation (e.g. different cosmetic lines owned by the same company) which gives the illusion of variety and reduce the potential market share of entrants. Suppose market share is evenly distributed between all available brands. With 3 firms and 3 brands, a new entrant can potentially take 25% of the market. But if brand proliferation results in 9 brands, new entrants can only take 10% of the market.

6 Examine how barriers to entry promote market power

Barriers to entry prevent entrants from entering the market. These may be natural, e.g. significant EOS, especially in the case of a natural monopoly, which has high sunk costs relative to market demand, and hence a high minimum efficient scale. These may also be artificial, e.g. legal protection like patents, product differentiation and brand loyalty, and the ability to carry out R&D. Barriers to entry prevent entrants, allowing firms to earn longrun supernormal profits.

Monopolists and oligopolists seek to maintain barriers to entry e.g. by using cost savings from internal economies of scale to lower AC and discourage entry, or even to dump goods below marginal cost of production to gain market share, or ward off competition (predatory pricing). These firms may attempt to gain control of raw material or consumer demand through patents, R&D, or gain market share by mergers & acquisitions. However, barriers to entry remain temporary.

7 Why do some small firms exist and survive?

(exist = why stay small, survive = why make normal profit)

Small firms may survive (make normal profits) due to both demand and supply-side reasons. On the demand side, the product may be of limited range e.g. bulky perishable goods with high transport costs, resulting in localized market e.g. bricks, concrete, fresh fish. Demand may be for variety and personalized services – as in hawker stalls, hairdresses etc. And some firms in prestige markets may be small by definition because only so few can afford luxury yatches.

On the supply-side, EOS may be quickly exhausted and DOS sets in early, such that MES is small relative to market size, so only small firms may survive. Alternatively, a constant LRAC over a long range of output allows for the accommodation of both small and large firms. The lack of entry barriers (e.g. restaurants) may allow small firms to enter even as large firms dominate. Small firms may band together to gain the benefits of bulk buying while retaining their independence; this happens for e.g. econs minimarts. Small firms may exist as they lack the capital, time, or risk appetite to grow.

8 How do firms grow?

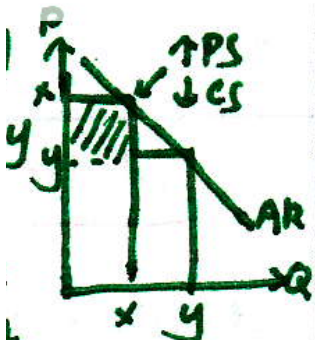
Firms may grow through internal expansion or external growth i.e. mergers and acquisitions. This includes vertical integration between firms in different stages of the production process, i.e. forward when a firm moves into succeeding stages of production e.g. brewery buying a pub to move closer to customers, or backward when a firm moves into preceeding stages of production e.g. an oil refinery buying an oil well to ensure supply of raw materials or restrict supplies to competitors. Another category of merger is horizontal integration between firms in the same stage of production e.g. adidas buying reebok, to reduce competition and increase market share and power, or to gain economies of scale.

9 With examples, explain when price discrimination may occur and what form it might take

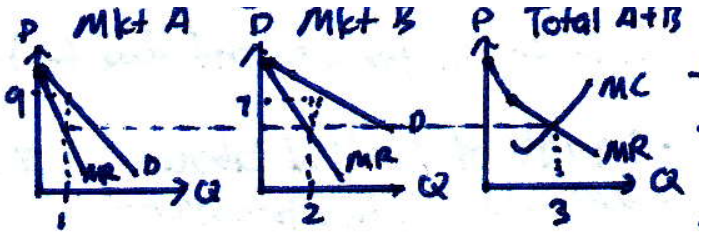
Price discrimination is when a firm sells a certain product to different buyers at different prices, or charges the same consumer different prices for different units of the same good, for reasons other than cost differences. PD is made possible when (1) the firm has control over market supply, and (2) is able to segment the market into separate and identifiable groups, (3) without possibility of resale between the different markets. What makes PD profitable is that each submarket has a different price-elasticity of demand, so price can be increasecd in the price-inelastic market and decreased in the price-elastic market.

First-degree PD is when each consumer is charged the maximum price he is willing and able to pay, as is the case in an auction. This leaves the consumer with zero consumer surplus, and maximizes producer surplus. The DD curve becomes the MR. However, practical examples of first degree PD are few and far between, as it is impractical to charge each consumer different prices, and consumers are usually not willing to reveal the maximum price they are willing and able to pay.

Second-degree PD is when different prices are charged for different blocks of the same good, e.g. a higher charge for the first few kilowatts of electricity, for which there are no substitutes, and lower charge for subsequent units, for which gas-powered stoves, heaters etc. may be a substitute. Hence price is raised for the price-inelastic segment of demand, while lowered for the price-elastic segment e.g. buying a burger alone costs $4, a set meal $6, and upsize an additional 50c.

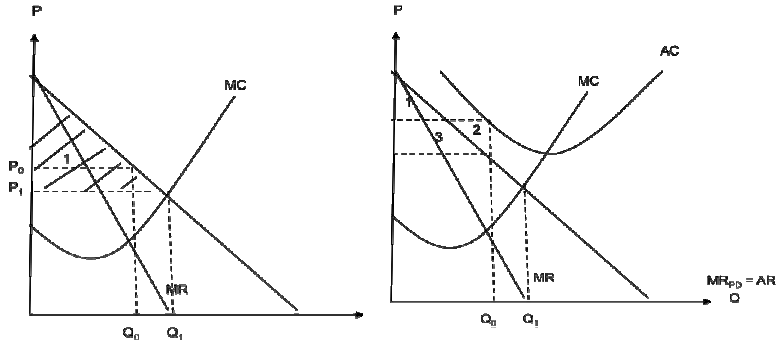


Third-degree price discrimination is when the same product is sold at different prices to different customers in separable sub-markets with different PED. Examples include child discounts for movie tickets. The firm charges the price indicated by the demand curve in each market.



10 Might price discrimination be beneficial to society?

Price discrimination results in society producing a greater number of goods, as the demand curve now becomes the MR curve, so firms produce at Q1, where MC=MR and MC is rising, rather than Q0. A price-discrimination monopolist is as allocatively efficient, i.e. a pareto optimum allocation of resources among different goods, where no one can be made better off without someone else being made worse off, as a perfectly competitive firm as at Q1, P=MC i.e. the value consumers place on the good is equal to its opportunity cost i.e. the benefit of the alternative good. Even an otherwise loss-making company may continue to produce with price discrimination, if area 1> area 2, so goods that otherwise might not be produced can be produced.



Third-degree price-discrimination may also result in lower-income groups being subsidized, or be carried out for equity reasons e.g. profits elsewhere cross-subsidizing rural bus services, which are seen as a right and a necessity. Finally, the extra profit from price discrimination (possibly supernormal profit) allows for greater R&D, product innovation, and reductions in cost of production, possibly benefitting the consumer in the long run (dynamic efficiency).

On the other hand, consumers lose out from price discrimination (loss of consumer surplus) – but this is not deadweight loss as the loss in CS is passed on to producers. Price-discriminating firms may become X-inefficient or complacent due to the additional profit, passing on costs to the consumer and resulting in productive inefficiency (see later). Extra profits from price-discrimination from 1 market may also be used to withstand price wars in other markets, reducing competition and eventually resulting in higher prices in the other market.

11 Explain allocative, productive, and dynamic efficiency

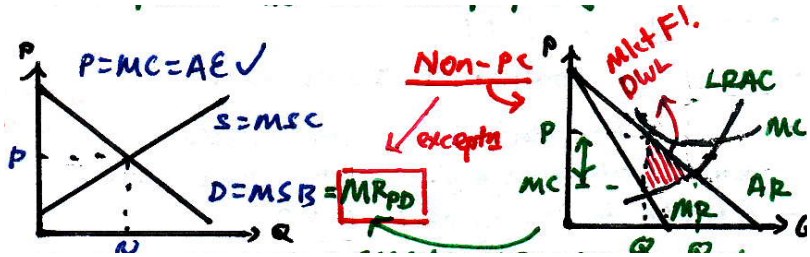
See pg 1

12 To what extent are monopolies beneficial for society?

(modify the explanation if qn is 'to consumers, or comparison between monopoly and oligopoly etc) (explanation for oligopolies is similar)

We evaluate the effect of monopoly on several criteria: allocative efficiency, productive efficiency, price and output, dynamic efficiency (innovation), variety, equity.

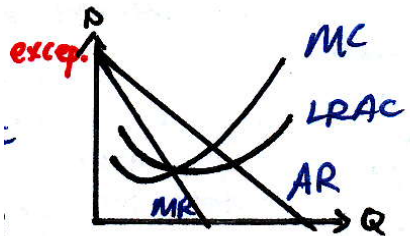
AE is a pareto optimum allocation of resources among different goods, where no one can be made better off without someone else being made worse off. A perfectly competitive firm is allocatively efficient (assuming no externalities) as P=MC, i.e. the value society places on the last unit of the good equals the opportunity cost of resources used to produced it, i.e. the value of the benefit of the alternative good. However, at the output of a profit-maximizing monopolist, where MC=MR, price exceeds MC – this is an allocatively inefficient underproduction as consumers value the last unit of goods more than they value the alternative good.



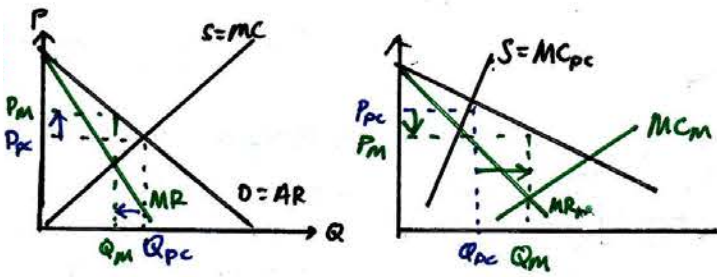
However, there is an exception: a perfectly price discrimination (1st degree) monopolist may be allocatively efficient since the demand curve becomes the monopolist's MR curve, and where MC=MR, P=MC.

Monopolists tend to be productively inefficient. Productive efficiency is the mimization of the amount of resources required to produce a certain quantity of good. From the firm's point of view, any output produced at minimum short-run AC is productively efficient, i.e. all points on LRAC are productively efficient. From society's point of view, only the minimum point on the LRAC, where all internal economies of scale have been exploited, is productively efficient. Perfectly competitive firms have to be productively efficient, failing which, they make subnormal profits and are forced to leave the industry. Monopolist firms tend to have excess capacity and not produce at the bottom of their AC curves. They may also suffer from X-inefficiency, where the lack of competitive pressure on profits leads to lax cost control e.g. overstaffing, spending on prestige buildings, such that they produce above LRAC, using more resources than necessary to produce a given output.

Exception case: a monopoly with supernormal profits can be productively efficient by coincidence.



As a result of both allocative and productive inefficiency, monopolists tend to reduce output and raise prices to QmPm above the competitive equilibrium PpcQpc in the first diagram, to the detriment of consumers but to the delight of the monopolist.



However, there is no guarantee that perfectly competitive firms are productively efficient from

society's point of view. Monopolists that enjoy substantial internal economies of scale (example) may pass on cost savings, such that output may in fact increase from Qpc to Qm and price fall from Ppc to Pm (2nd diagram), and be more productively efficient from society's point of view.

In terms of dynamic efficiency, i.e. efficiency over time due to innovation and R&D to reduce production costs and raise product quality, monopolies and oligopolies may have the supernormal profits to invest in R&D. PC firms lack this profit, and MC firms have only very limited ability to R&D. Whether monopolists have the incentive to innovate is another matter – if barriers to entry are complete, they will not have any competitive pressure to innovate. However, given the threat of competition, or in oligopolistic markets with the incentive to gain market share, companies in imperfect competition may innovate. MC firms may also innovate, but their focus is more of product differentiation rather than groundbreaking innovations. PC firms do not engage in innovation since their products are homogenous, and with perfect information, any innovation is quickly copied by rival firms.

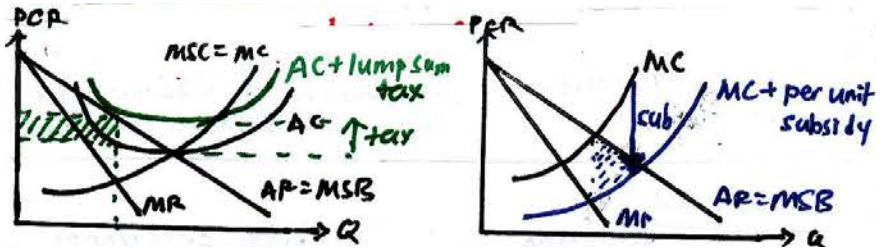
2 more minor arguments which can be mentioned: variety (for MC and oligopolists, not for monopolists) comes at the cost of inefficiency and excess capacity, supernormal profits from monopolists and oligopolists raise equity issues.

Evaluation:

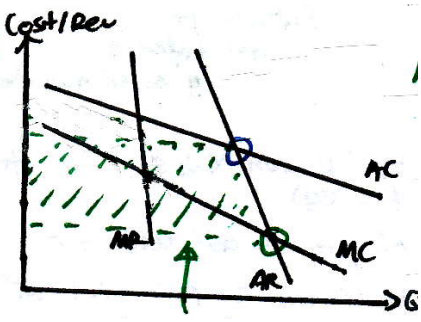
- Governmental intervention may decrease drawbacks while retaining merits of monopolies
- In contestable markets, with unimpeded entry and exit costs, the threat of competition may ensure that monopolies limit their prices to avoid attracting entrants
- Schumpeter's creative destruction: monopoly profits are not a serious problem in the longrun; they are the stimulus of the creativity required to destroy monopoly barriers to entry.
- With globalization, even if firms do not face competition at home, they may face competition from imports.

13 How might monopolies be regulated and how effective, desirable, and feasible is this?

Lump-sum windfall taxes (left) work like a fixed cost, shifting AC upwards, eroding monopoly supernormal profits but not changing output. A per-unit subsidy (right) shifts AC and MC downwards, inducing the monopolist to increase output towards the social optimum.



AC and MC-pricing is used to regulate natural monopolies – in the right diagram, MES is much larger than market demand, so revenue curves intersect cost curves where cost curves are still falling and MC below AC. MC-pricing involves forcing the monopolist to produce at MC. However, the monopolist makes a loss, so governmental subsidies are necessary to support the firm. Alternatively, two tier pricing can help – the first higher-priced tier covering fixed costs, the 2nd tier charged at P=MC. AC pricing forces the monopolist to produce at AC. With AC-pricing, the monopolist breaks even, and output increases, but not to the socially optimum quantity.



Other forms of regulation include – antitrust/merger policy, preventing the formation of new monopolies and breaking up existing ones, outlawing anticompetitive behaviour e.g. outlawing predatory pricing and collusion. Price-cap regulation (e.g. for public transport in Singapore) means that prices are allowed to increase only by the rate of inflation minus expected increaees in efficiency, and governments may try to break up barriers to entry and make markets contestable e.g. allowing phone number switching in the case of Singapore telecoms.

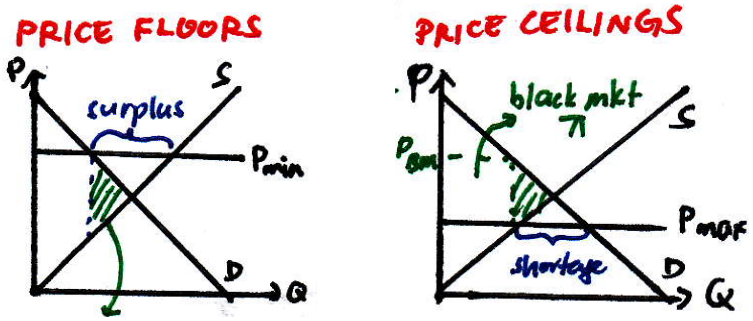
Price-setting measures may not be effective because it is hard for the government to estimate the firm's MC or AC curves, or set the correct expected rate of efficiency improvements. The regulated firm may withhold information, and may have the incentive not to control costs under AC/MC pricing since any cost savings have to be passed on to consumers and do not increase profits. Regulatory capture may set in, where the regulator gets to know firm management on a personal level and become less strict.

In terms of desirability, the reduction in monopoly power tends to benefit society. Tax revenue benefits governmental coffers, while subsidy costs take away from it. However, the reduction in monopoly supernormal profits may decrease innovation and long-run efficiency gains. Natural monopolies should generally not be broken up, so that society can reap their huge internal economies of scale.

The most drastic intervention measure is nationalization. This corrects equity issues, and may lower prices for consumers, ensuring that the socially optimum output is produced. Duplication and wasteful competition is also avoided, while long-term strategic planning in line with national objectives can be carried out. If the nationalized firm makes profits, it can add to governmental revenue. However, the loss of the profit motive means less incentive to be efficient, and a lack of accountability to shareholders. The government implicitly guarantees to prop up the nationalized firm if it fails, resulting in moral hazard. This may result in X-inefficiency, and less incentive to innovate.

14 Explain why price floors and ceilings might be implemented and evaluate their effectiveness

Price floors and ceilings tend to correct the market failure of inequity.



Price floors are a minimum price, enforced by law, that can be paid to workers, farmers etc. They are implemented to protect producer income (e.g. as in the EU common agricultural policy), prevent exploitation (as in domestic maids) or intentionally create a surplus to store (e.g. buffer stocks in case of a bad harvest). However, they result in surpluses which the government must buy to maintain the price (e.g. europe's agricultural price floors has resulted in butter mountains and wine lakes). They are allocatively inefficient (shaded deadweightloss), and cushion inefficiency.

Price ceilings are a maximum price, enforced by law, which producers can charge. These protect consumers and serve further equity purposes e.g. rent control. They, however, result in shortages and inefficiencies (deadweight loss shaded). The lower price exacerbates the shortage by diverting factors of production from an already scarce good, lowering the supply. Black markets may form, charging up to Pbm, earning an extra black market profit (the difference between Pmax and Pbm), which tends to end up in the hands of criminals etc.

The surplus/shortage problems that result from price ceilings and floors can somewhat be mitigated by supply-side measures e.g. governmental-funded investment into scarce goods which need a price ceiling e.g. cheaply-rented public housing, or to reduce supply of overly abundant goods for which price floors are needed. Demand-side measures can help to boost demand to combat surpluses, or reduce demand to combat shortages – e.g. rationing food during wartime etc.

D MACROECONOMIC AIMS, INDICATORS, POLICIES Macro is much more interlinked than micro, topics cannot be studied in isolation. Try to develop an intuitive understanding

1 Explain why economies seek internal and external stability

(note: answer the qn directly. If qn asks why growth is good, do not say why no growth is bad; if qn asks why unemployment is bad, do not say why low unemployment is good)

Internal stability refers to sustained economic growth, low and stable inflation, and low unemployment. External stability refers to a healthy balance of payments and stable foreign exchange.

GROWTH

Economic growth refers to both actual growth, i.e. increases in the economy's actual output, and potential growth, increases in the economy's full-employment output. In the long-run, actual growth is limited by potential growth. To have sustained growth, in the short run, actual growth should keep pace with, but not exceed, potential growth. If actual growth exceeds potential growth, inflation is likely; if potential growth exceeds actual growth an output gap develops.

Economic growth increases national income and hence the amount of goods and services that can be consumed by the average household, improving material standards of living – arguably the end-purpose of economic activity. Growth ensures that an economy produces at a point on its PPC, minmising unemployment and lost output. Short-run growth facilitates savings and boosts investor confidence, paving the way for long-run growth (see later). Finally, growth makes income redistribution and correction of inequity easier. Hence economies seek growth.

INFLATION (note: CPI is ΔP of fixed basket of gd/svc commonly purchased by households in a given period of t)

(note: disinflation = falling inflation, deflation = falling GPL i.e. negative inflation)

Inflation is a sustained rise in the general price level that may be anticipated or unanticipated. Economies seek a low, stable, and anticipated rate of inflation. Unanticipated inflation sends out incorrect price signals – when price increases, producers may think that demand has increased and hence increase output, when in fact inflation and not rising demand caused the price increase; this is a misallocation of resources. Inflation arbitrarily redistributes wealth from savers to spenders, fixed income earners to variable income earners, and creditors to debtors. Inflation discourages investment as investors cannot confidently predict if the rate of return on investments will exceed the interest rate, making investments risky. Finally, cost-push inflation results in rising export prices and falling export competitiveness: exports fall, assuming exports are price-elastic, so net exports fall ceteris paribus. Aggregate demand falls and so does national income by a multiplied amount, and the balance of payments worsen. (take care to flip the argument if qn asks why low inflation good)

Anticipated inflation is less harmful, but it also results in menu costs (due to changing menu prices), and shoe-leather costs (frequent trips to the bank to minimize cash holdings, which lose their value quickly). Inflation breeds inflation; expectations of inflation become self-fulfilling as workers will demand wage increases in line with the expected rate of inflation, hence causing cost-push inflation.

However, some low rate of inflation is desirable. Some demand-pull inflation may just reflect healthy rises in aggregate demand. It also allows for the adjustment of relative prices between sectors of the economy: nominal prices/wages are often sticky downwards, but some inflation allows real wages to fall in sectors with falling demand.

Deflation is harmful because it results in rises in real interest rates (i.e. positive real interest rates even if nominal rates are 0), choking off investment (see later). When expectations of falling prices set in, consumption and investment are postponed in the hope of future price falls, and this has a contractionary effect. Expansionary monetary policy becomes useless because of the liquidity trap, i.e. nominal interest rates cannot go below zero, or nobody will invest.

The extent to which inflation is harmful depends on the cause of the inflation – one-off inflation (e.g. due to rise in GST) is less harmful than sustained inflation, demand-pull may be less harmful than cost-push, unanticipated worse than anticipated.

UNEMPLOYMENT

Unemployment occurs when individuals are available to work and seeking work but unable to find jobs. It includes cyclical/demand-deficient unemployment, due to periodic recessions and lacking aggregate demand, structural unemployment, due to the changing economic structure where jobs created do not match skills available, and frictional unemployment i.e. temporary unemployment due to the job search process. Unemployment represents an inefficient use of factors of production, i.e. an economy has not realized its potential output. Unemployment is hardest on affected families, who face reduced disposable incomes and lower material standards of living, coupled with stress. Persisted unemployment may result in a loss of motivation and deskilling, i.e. the unemployed get even less unemployable. Governments collect less tax and pay more social benefits. The economy faces lower consumption, hence lower national income, and more social problems. However companies benefit from less upward pressure on wages.

HEALTHY BALANCE OF PAYMENTS

See Q5.

2 Assess if real GDP per capita is a useful indicator for standard of living, and may be used to compare standard of living between countries.

Standard of living refers to both material and nonmaterial quality of life.

Material standard of living can be measured by real GDP per capita i.e. the total value of final goods and services produced in a country in a given time period. The greater the real GDP per capita, the greater the quantity of goods and services available to the average person, and hence the greater the material standard of living. 'Real' eliminates increases in nominal GDP due to inflation, which erodes purchasing power – if nominal GDP growth is 5% and inflation is 10%, purchasing power has actually fallen 5%! Similarly, 'per capita' eliminates increases in total GDP due to population growth.

Problems with GDP as an indicator of standard of living:

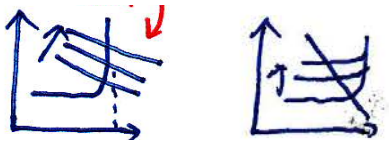
(1) GDP may reflect expenditure that does not improve the material standard living of individuals e.g. weapons
(2) the 'average' household income may not fairly reflect the material SoL of most households if the national income is not equitably distributed. If incomes of only the richest increases, GDP increases, making it seem as if the general material standard of living has increased, when it in fact has not.
(3) Nonmarket activities (e.g. the contributions of housewives) and the underground economy (e.g. moonlighting) are not included in the computation of GDP, so GDP may not reflect all economic activity
(4) Consumption-driven growth may come about at a tradeoff against future growth, if consumption diverts resources away from investment
(5) Inaccurate data collection and governmental manipulation e.g. allegedly china
(6) Non-material standard of living not accounted for – e.g. stress, environmental damage. Hard to account because this is subjective.

Purchasing power parity is used to compare the material standard of living of different countries. It is problematic to simply convert all GDPs to a single currency using market exchange rates, since different countries have different costs of living, and market exchange rates may be governmentally manipulated. The purchasing power parity approach involves approximating the cost of living in different countries by calculating the price of a basket of goods and services typical households would purchase, and comparing the price of this basket in different countries to create a PPP-exchange rate. This removes the effect of different price levels and different cost of living in different countries, but may not be accurate as the "basket of goods and services a typical household will buy" would be different across countries – heating costs will be included in a cold country but not Singapore.

Alternatives to GDP include hybrid indicators like human development index (GDP, life expectancy, adult literacy equally weighted), index of sustainable economic welfare (accounts for environmental damage) etc. These try to account for both material and nonmaterial SoL, but encounter problems: how much weight to assign to each factor? How do you measure environmental damage and nonmaterial SoL – adult literacy rates is a poor proxy for quality of education.

3 With diagram(s), explain how inflation might come about

Inflation is a sustained rise in the general price level. This may be demand pull (left) or cost push (right) –show multiple shifts in the AD curve to reflect 'sustained



Demand-pull inflation occurs due to rising aggregate demand, when the economy is near full employment / lacks space capacity. At the prevailing general price level, the macroeconomy faces a shortage of goods and services, so consumers bid the price up to a new higher general price level. The rise in AD, in turn, may come due to e.g. rising exports, rising investment, rising consumption, currency depreciation (see marashall-lerner condition) etc.

Cost-push inflation comes about when AS falls (AS curve moves up), as different economic actors exercise economic power. This can be import-price push inflation due to rising import prices, wage-push inflation where wages rise proportionate productivity improvements e.g. due to union action, profit-push inflation where monopolists/oligopolists push prices up, tax-push due to tax rises (usually one-off and not sustained inflation), or due to rising raw material costs e.g. as they are depleted.

(the 2 main types are demand-pull and cost-push. Structural not as impt). **Structural inflation** occurs where factors of production are immobile and move slowly from a declining sector to an expanding sector; wages and prices are sticky downwards in the declining sector, but the shortage of factors of production in the expanding sector results in prices being pushed up.

The cause of inflation is not always easy to pin down, especially once expectations set in. An initial inflationary shock can result in demand-pull and cost-push inflation interacting to create a wage-price spiral, when workers, expecting inflation, demand salary hikes proportionate to inflation, hence raising the prices of goods and services. Expectations of inflation are self-fufilling.

In Singapore's context, import price-push inflation is a major source of inflation, due to dependence on foreign imports for consumption and as raw materials for industrial production. Export growth also causes demand-pull inflation.

4 Explain how rising unemployment might come about in Singapore

Note: full employment is the absence of cyclical unemployment; frictional and structural unemployment are still present at full employment.

The unemployment rate refers to the percentage of workers who are actively seeking work but are unable to find work. Unemployment can be cyclical, frictional, or structural.

A rise in cyclical unemployment arises from a fall in AD. For instance, in a global recession, demand for Singapore's exports fall, since Singapore exports mainly income-elastic goods e.g. financial services, petrochemicals etc that are not necessities and take up a high percentage of income. Since exports are a component of aggregate demand, the fall in exports triggers a fall in AD and a more than proportionate fall in national income by the multiplier effect (explain multiplier). Firms, facing a shortfall of orders, may lay off unnecessary staff, resulting in cyclical unemployment.

Structural employment could result from Singapore's rapidly changing economic structure, with more knowledge-intensive jobs but fewer unskilled jobs. Those whose skills do not match available jobs may end up structurally unemployed – e.g. laid off as low value-added manufacturing moves out of Singapore.

Frictional unemployment can result from the time for employers to search for available workers, and for employees to find jobs. This is a result of imperfect information and immobility of factors of production (labour).

A sudden rise in unemployment is likely to be cyclical, as cyclical unemployment rises and falls rapidly with the economic cycle. Frictional and structural unemployment do not build up overnight, but are likely to contribute also.

5 Identify sources of growth

(general reading – not impt) See Q1 – actual growth must be accompanied by potential growth

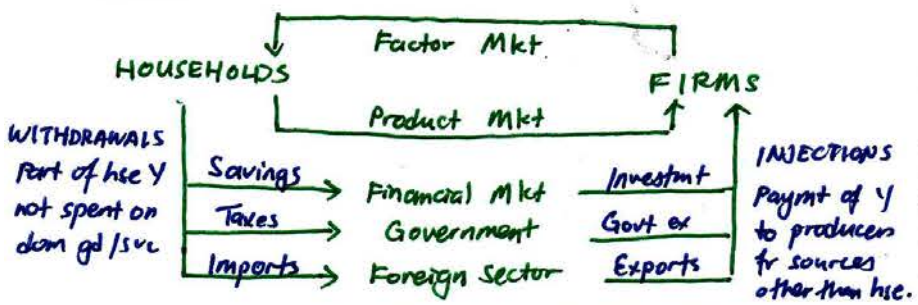
Potential growth (AD side)

- Factors of production – abundant natural resources, high quality human resources etc
- High rate of capital formation and technology, so more up-to-date production methods i.e. can produce more for a given amt of input
- FDI inflow – transfer of technological knowledge and capital accumulation (see later)

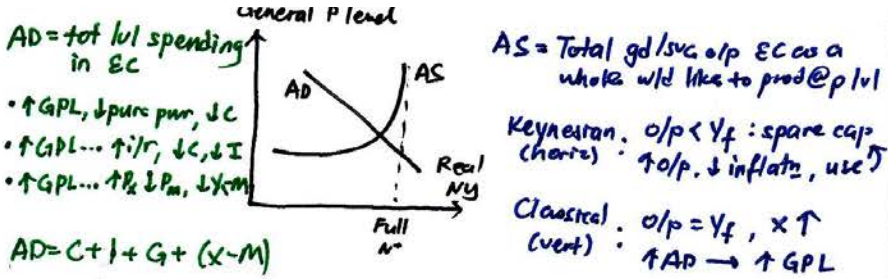
Internal actual growth

- Rise in I due to optimism and govt policy, rise in C due to affluence, or rise in G i.e. policy
- Strong regional and global demand

6 Explain the circular flow of income



7 Explain the AD/AS model and what might affect AD and AS



8 Explain the effects of changes in the following on C, I, and net X

(i) Aggregate demand

***Multiplier:** An increase in AD results in a multiplied increase in NY. The initial increase in C/X/I raises the disposable incomes of some households, who then spend some of the extra income, which then raises the incomes of other households, inducing a further rise in consumption and so on until equilibrium in the circular flow is restored i.e. injections (exports, investment, government spending) equals withdrawals (imports, savings, taxes), such that NY increases more than proportionately.

Rising AD results in investor confidence, boosts investments (accelerator not syllabus)

Rising NY increases imports, assuming imports are income-elastic.

(ii) Exchange rates

If the marshall-lerner condition holds, i.e. PED of exports + PED of imports exceeds 1, then a devaluation improves balance of trade i.e. net exports increases. The balance of payments improves, and the rise in net exports causes a rise in AD and a multiplied rise in NY.

Expectations of appreciation tend to boost foreign direct investment, since it means that investments will increase in value, in terms of foreign currency.

(iii) Interest rates

***Marginal efficiency of investment**: *There are many possible investment projects with different expected rates of return. Interest rates represent the opportunity cost of investment (i.e. how much your money would earn anyway if just stored in the bank) – this line does not need to be written.* A fall in interest rates will make more investment projects have rates of return exceeding the interest rate, hence more investment projects are undertaken and investment increases.

Falling interest rates make savings less attractive and loans more attractive, hence consumers have less incentive to save and more incentive to consume. They may even borrow to purchase big-ticket items e.g. cars

Fall in interest rates results in hot money outflow (money that moves in search of the highest interest rates), and hence depreciation. This improves the balance of trade (see marshall-lerner condition above), boosting net exports and hence AD.

(iv) Inflation

If consumers expect rises in the general price level, they will be inclined to rush to buy goods now rather than wait for prices to rise.

Inflation makes investors uncertain about the rates of return of their investments, and they will add on an additional risk premium (i.e. the extra return needed to persuade them not to keep their money safely in a bank) such that now, fewer investment projects exceed the interest rate + risk premium, so investment falls. Alt explanation: inflation results in poor investor confidence, so investments fall.

Domestic inflation higher than that of trading partners causes in a rise in the price of domestic exports in foreign currency, so exports fall ceteris paribus. The price of foreign imports in domestic currency falls, so imports rise. Net exports fall. (note : it's relative, you can have inflation but if others have higher inflation than you, your exports are actl getting cheaper)

(vi) Expectations, etc

If investor confidence is poor, or investment interest-inelastic (Keynesian view), then even a fall in interest rates is not likely to boost investment. Tax rates also influence investment.

9 How might interest rates and exchange rates be determined?

Interest rates may be determined by free-market forces (below), set by the government (independent monetary policy e.g. USA), or dependant on the interest rates of other countries – if a country chooses to manage exchange rates and have open capital flows, as in the case of Singapore, it has to give up independent control of interest rates **(the open economy trilemma).**

Free market determination of interest rates is explained by the loanable funds theory: Savings supply loanable funds for investment (demand), interest rates = 'price' of money. The greater the interest rate, the greater the opportunity cost of present consumption, hence the greater the amount of savings (supply of loanable funds). The greater the interest rate, the less the no. of investment projects with expected rates of return exceeding the interest rate, hence the lower the amount of investment (demand of loanable funds).

(quote this explanation para) A rise in savings for some reason results in increased supply of loanable funds, such that at the prevailing interest rate, such that at the prevailing interest rate, there is an surplus of loanable funds. The interest rate adjusts downwards to restore equilibrium. At the lower interest rate, there is now a greater no. of investment projects with expected rates of return exceeding the interest rate, so investments rise.

10 Explain how the balance of payments is calculated. Hence explain the potential sources of a BOP deficit and a surplus, and the problems that might result from each

(note: BOP questions can be confusing – avoid if you can)

The balance of payments is a record of a country's financial transactions with the rest of the world. It includes the current account (trade balance i.e. flow in goods/services, profit repatriation, and remittances), financial account (foreign direct investment and hot money flows), and official reserves.

Current account deficits can be due to appreciation of the domestic currency with respect to that of trading partners. Assuming the marshall-lerner condition holds i.e. the sum of the price-elasticity of imports and exports exceeds one, this leads to a fall in net exports and a worsening current account deficit. With a flexible exchange rate, nothing needs to be done, since the excess of imports over exports results in greater supply of local currency than demand for it, leading to depreciation and the correction of the current account deficit. However, if a fixed exchange rate above the free market equilibrium is sought, then the government must use up reserves or borrow to fund the deficit. The negative net exports has an contractionary effect on AD, and foreign direct investment may if it is believed that the country will in the long run have to depreciate its currency to correct the deficit (i.e. eroding the value of investments).

Current account deficits can be due to fall in exports due to a country's loss of comparative advantage. Depreciation can help, but it is not a long-term solution, and can cause import-induced inflation due to rising prices of imports. Loss of comparative advantage is best dealt with by supply-side policies to improve export competitiveness – e.g. breaking up unions and encouraging the adoption of new technology to reduce costs of production and hence result in a fall in the price of exports, increasing exports assuming exports are price elastic, hence correcting the balance of trade deficit.

Conversely, rising exports can bring current account surpluses. This is usually not a case for concern, since exports contribute to AD and boost national income. Foreign reserves are also accumulated. However excessively large surpluses might invite protectionism from trading partners, since it is a beggar thy neighbour policy – one country's surplus is another country's deficit. Also, as exports represent an injection into the circular flow of income, increasing AD, it may result in demand-pull inflation.

Current account deficits can be due to increasing imports of foreign goods for consumption. This can be due to a rise in national income, and hence a rise in demand for imports (assuming imports are income-elastic e.g. foreign luxury goods). If the rise in national income reflects an overheating economy (actual growth above potential growth), **expenditure-reducing policies** e.g. contractionary FP or MP can seek to lower AD (explain – see later) and hence reduce imports, ceteris paribus. If the rise in national income is sustained, **expenditure-switching policies** that seek to boost import-substitution industries can be undertaken. This includes supply-side policies as explained, or protectionism – albeit that works only in the short run

Current account deficits can be due to increasing imports of capital-intensive goods. This is usually considered to be not a problem, since it reflects investment and capital accumulation, which can boost the country's productivity and lower costs of production with new technologies, hence boosting AS and paving the way for long-run growth.

Capital account deficits can be due to locals investing abroad. Again this is not considered to be a problem since these investments are likely to result in eventual returns and profit repatriation. Capital account surpluses due to inbound foreign direct investment is also welcomed…

Capital account deficits can arise due to hot money flows abroad e.g. in response to higher interest rates overseas. The best response here is just to let the currency readjust. However, hot money inflows, e.g. in response to higher interest rates, can lead to surpluses and a 'dutch disease effect' where the resulting appreciation increases export prices and results in falling export competitiveness.

11 Explain why Singapore focuses on exchange-rate policy and what this intends to achieve

The open economy trilemma means that if Singapore chooses to have open capital flows, it can either set independent monetary policy or control exchange rates, but not both. Singapore chooses to control exchange rates instead of set interest rates due to it being a small and open economy. Trade exceeds 500% of GDP, so changes in word prices or exchange rates have a powerful influence on local AD and inflation. S$NEER i.e. tnominal effective exchange rate (the value of the Singapore dolar against a trade-weighted basket of foreign currencies without the effects of inflation inflated) is maintained within a trading band to provide exporters and importers certain and stable exchange rates, so that they may enter into long-term contracts.

Singapore adopts a gradual appreciation of the S$NEER to ward off inflation. Much inflation in Singapore is import-induced, as most raw materials for manufacturing or necessities for consumption e.g. food) are imported. Appreciation of the SGD results in a fall in price of raw materials and consumption goods, so costs of production fall, and cost-push mitigation is mitigated. The rise in the price of Singaporean exports in foreign currency rises, so exports fall (assuming price-elastic), and the fall in net exports results in a fall in AD, warding off demand-pull inflation.

However there is a trade-off between policy objectives. Appreciation hurts exports and results in a multiplied fall in NY, unemployment, etc. While the mitigation of cost-push inflation and allowing for fall in prices of raw materials help export competitiveness, productivity growth must also be pursued to keep exports competitive.

12 Explain the macroeconomic effects of expansionary fiscal policy. How effective is expansionary fiscal policy likely to be in responding to a recession?

Expansionary fiscal policy involves lowering taxes and increasing governmental spending. Recession means 2 consecutive quarters of falling GDP, and unemployment is also likely to be significant.

Where FP is 1 of 3 policies compared, and FP is not specifically mentioned in the qn, only need to talk about increasing G , can leave out T.

Increasing governmental spending: As G is a component of AD, the rise in G boosts AD and hence NY by a multiplied amount. The initial increase in G raises the disposable incomes of some households, who then spend some of the extra income, which then raises the incomes of other households, inducing a further rise in consumption and so on until equilibrium in the circular flow is restored i.e. injections (exports, investment, government spending) equals withdrawals (imports, savings, taxes), such that NY increases more than proportionately. Firms, facing greater orders, hire more workers to meet these orders, so cyclical unemployment falls.

Decreasing taxes: Fall in personal taxes increases disposable incomes, so a rise in consumption is induced. Fall in corporate taxes increases corporate profits, so companies have more capital to invest. Also, expected after-tax rates of return on investment rise, so at a prevailing interest rate, more investment projects have expected rates of return exceeding interest rate, so investment rises. The rises in I and C causes AD to rise, and NY to rise by a multiplied amount, also contributing to a fall in cyclical unemployment.

Note: Many fiscal policies also have supply-side effects e.g. infrastructural spending (see supply side policies). Classify a policy as FP or SS-side according to its primary intended effect: if to boost AD, then FP, if to improve the supply side, then SS-side. Mention the duality of some policies only in conclusion

However, there are problems with fiscal policy. The value of the multiplier is small for an open economy like Singapore due to the high marginal propensity to import, hence for a given desired rise in NY, a greater increase in G is necessary for Singapore than for other countries. If governmental expenditure is financed by borrowing, this increases the demand for loanable funds and may push up interest rates, hence financially crowding out investment (see loanable funds theory). Governmental demand for factors of production may increase the price of these factors, physically crowding out private demand, and possibly resulting in demand-pull inflation if governmental spending is mistimed. Only cyclical unemployment can be mitigated, structural & frictional unemployment remain.

13 Explain the macroeconomic effects of a contractionary monetary policy. Can it help to fight demand-pull inflation?

Do not raise MP for Singapore qns. MP is more effective in a contractionary fashion, FP in an expansionary manner.

A contractionary monetary policy involves raising interest rates to choke off AD. (talk abt effect on C, G, and X – i.e. components of AD) As interest rates rise, consumption falls as the opportunity cost of current consumption rises, such that consumers save more, and also because consumers become less able to borrow to finance big-ticket purchases. Investments fall, because at a higher interest rate, less investment projects have rates of return exceeding the interest rate. The rise in interest rates results in a hot money inflow (assuming open capital flows) and an appreciation of the local currency. (for depreciation use marshall-lerner condition, for appreciation this suffices) The price of exports in foreign currency rises, so exports fall assuming price-elastic demand. Ceteris paribus, net exports fal. The fall in C, I, and (X-M) result in a fall in AD and, warding off demand-pull inflation. Currency appreciation makes the price of imports in local currency cheaper, mitigating import price-push inflation.

However, this may not be the case, if investment is interest-inelastic e.g. if there is huge investor confidence and investors expect very high longrun rates of returns, then the increase in interest rates may not decrease investments. Not every country can set independent interest rates, the open economy trilemma means that countries like Singapore that wish to have open capital flows and controlled exchange rates cannot set independent interest rates.

The fall in inflation comes at a cost. The fall in AD also results in a multiplied fall in NY (explain multiplier), hurting actual growth. Contractionary MP tends to have negative effects on employment, since with the fall in AD, firms, facing fewer orders, may lay off staff, causing cyclical unemployment.

Furthermore, cost-push inflation due to local factors is not mitigated as rising interest rates cannot ease supply bottlenecks. The fall in investment may slow potential growth as well. With the slowdown in investment and capital-accumulation, or technological improvements to lower costs of production, the rate of growth of the productive capacity of the economy also falls. The fall in AS compromises long-run economic growth, and worsen future cost-push inflation.

The effect on the balance of payments depends on whether the worsening in the current account due to the fall in net exports outweighs the improvement to the capital account due to hot money inflows, if the former outweighs the latter, then the BOP worsens.

14 Explain and evaluate supply-side policies

Comparison of policy qns need to talk abt SS-side policies to contrast vs DD-side policies.

Supply-side policies aim to reduce costs of production and boost the productive capacity of the economy. They may be market-oriented e.g. breaking up monopolies, promoting entrepreneurship, aiding the job search process, or interventionist e.g. infrastructural building etc.

Note: Come up with relevant examples to address the problem identified! EG wage-push inflation shd be targeted with breaking up unions, falling labour productivity with retraining etc. Give 2-3 egs and link to lower cost of prod

Examples:

- Training & retraining (e.g. SPUR) enhances employability of workers and occupational mobility, so they can move on to find new jobs in new industries if old jobs in declining industries are lost. This mitigates structural unemployment, boosts export competitiveness, and allows the economy to improve the quality of factors of production, resulting in potential growth i.e. improvement in the economy's productive capacity.
- Jobs credit scheme and flexi wage structure lowers wage costs during a recession, enabling firms to keep and hire domestic workers, to preserve jobs in times of cyclical unemployment
- Government-run job fairs, job matching etc helps to ease the job-search process, mitigating frictional unemployment.
- Breaking up unions can mitigate wage-push inflation by decreasing the ability of workers to

bargain for wage increases.

- Infrastructure projects can lower costs of production for firms, hence mitigating cost-push inflation and boosting AS, so AD can rise without a corresponding rise in inflation
- Breaking up monopolies / privatization can reduce costs etc etc

However, supply-side policies take a long time to work. Good industrial relations are required for the cases that deal with labour, or they may be difficult to implement. Cost is incurred also.

E INTERNATIONAL ECONOMICS

1 Explain the economic case for free trade

Free trade is the absence of barriers to exchange of goods and services between countries. The economic case for free trade lies in comparative advantage – i.e. the ability of a country to produce at lower opportunity cost compared to another country. Different countries have different comparative advantages due to differences in factor endowment e.g. a country with fertile arable land has a CA in agricultural produce, a country with abundant labour supply has a CA in labour-intensive industries, etc. Differences in CA can also arise due to differences in technology; CA is not static and changes.

Suppose we have 2 countries, USA and China. USA starts with 200 units of FOPs, china starts with 20 units. USA, having a high level of technology and abundant capital, has the comparative advantage in capital-intensive computer production, while china's abundant labour force gives it a comparative advantage in labour-intensive cloth production. US and can produce 1 unit of computers or 0.6 units of cloth with 1 unit of FOP, while china can produce 0.5 units of computers of 1 unit of cloth with 1 unit of FOP.

Before specialization		
	Computers	Cloth
USA	100	60
China	5	10
World	105	70

With differences in CA, a country with a lower opportunity cost in the production of a good will specialize in it, such that good in which the country has CA is exported and goods in which the country lacks CA are imported. Assume China specializes completely in cloth production and USA specializes in wheat production:

After specialization		
	Computers	Cloth
USA	110	54
China	0	20
World	110	74

As a result of specialization, world output of each good rises (illustrated by the table). This is a more efficient allocation of world resources, increasing world efficiency. Now assume the terms of trade for computers:cloth is 1:1, and USA trades 8 computers for 8 cloth. Each country's consumption of each good has increased compared before specialization. Although production remains constrained by a country's PPC, trade allows consumption beyond the PPC to increase welfare.

After trade		
	Computers	Cloth
USA	102	62
China	8	12
World	110	74

Trade also allows small countries like Singapore to gain access to larger international markets and earn export revenue, while gaining economies of scale as companies may produce for a larger international market and not just a small domestic market. Countries may also gain access to resources not available at home e.g. oil, rare earths, and enjoy a greater variety of consumer products and lower prices due to global competition.

2 In Singapore's case, why might terms of trade improve? What is the impact of balance of trade and on local industry?

Terms of trade = (export price index / import price index) * 100

If demand for imports increases e.g. due to rising national income, import prices rise, worsening TOT. Rising imports means BOT also worsens.

If demand for exports rises due to e.g. improving local technology of export quality, export prices rise, improving TOT. Ceteris paribus, BOT improves.

If supply of exports increase e.g. due to fall in local cost of production, export prices fall and TOT worsen. Assuming exports are price-elastic (which is the case in singapore's context since Singapore exports mainly high value-added goods e.g. petrochemicals, financial services that take up a large % of income and have to compete with foreign substitutes), then the fall in export prices improve BOT.

If supply of imports increase e.g. due to fall in foreign cost of production, import prices fall and TOT improves. Imports into Singapore are price-inelastic (quite unusually, not the case for other countries) since Singapore imports mainly necessities e.g. rice, water etc. Hence a fall in import prices results in a fall in imports, and BOT improves. For other countries where imports are price-elastic, BOT will worsen.

The fall in import prices results in a reallocation of resources, as consumers switch from domestic import-substitution industries to cheaper imports. Import-substitution industries decline, freeing up factors of production for export-oriented industries, lowering costs of production for export-oriented industries, increasing export competitiveness.

3 Explain the benefits and costs of globalization

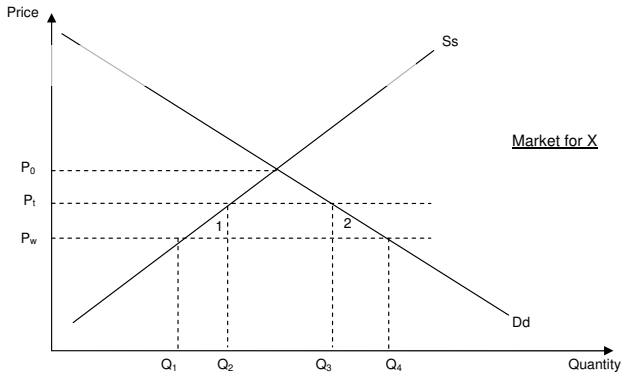
Globalization involves rise in trade flows, labour flows, and capital flows (talk about all 3!)

see renyan's essay. (note: no need to talk abt CA in detail with the table if it's glob qn)

4 How might protectionism be carried out? Is it justifiable?

Protectionism is the sheltering of domestic industries from foreign competition through trade barriers on imports. This can be done by tariffs, quotas, export subsidies, or regulation (e.g. rules that governmental departments can only procure supplies from local companies).

Tariffs are levied on on imports to raise import prices over that of local import-substitution industries. Initially, world prices for good X is at Pw, lower than the domestic equilibrium P0. With the imposition of tariffs, prices rise to Pt (Pw + tariff), causing a deadweight loss of area 1+. Implying that tariffs lead to allocative inefficiency.



Protectionism is in general thought to be unjustifiable as it goes against the principle of comparative advantage. Each country should produce the good in which it has a comparative advantage due to

greater factor endowments in the factors in which that good is intensive (give example), and then trade to obtain the desired range of goods, such that each good is produced at the lowest possible opportunity cost, increasing the world's economic output.

Protectionism shields local producers from foreign competition, promoting productive inefficiency and complacency. With protectionism, consumers have to pay higher prices and this may contribute to cost-push inflation. It may also invite retaliation and trade wars.

Ultimately, protectionism is not a long-run solution. It does not solve the root cause of a loss in export competitiveness. Industries that no longer have a comparative advantage should be allowed to decline, so that resources may be reallocated to new industries with comparative advantage. Protectionism is then a hindrance to structural change, as it reduces the incentives and market forces at work in this reallocation, making declining industries complacent even as they continue to lose their CA. Supply-side policies, which include government spending on infrastructure to boost export competitiveness are far more effective in addressing the key issue of inefficiency in export industries.

However, there may be special cases for which protectionism may be justifiable. It can be a short-run measure to cushion the decline of a sunset industry, allowing the industry to decline slowly such that factors of production can be reallocated (e.g. giving workers time to gain new skills and move into other industries) and reducing the impact of a sudden spike in unemployment.

It has also been argued that new industries especially in developing countries may need protection until they can 'stand on their own two feet'. This policy of *import-substitution* was very popular some years ago, but has fallen from favour as these industries seldom grow up, and how do you choose which industries to support? A similar argument applies to *senile industries*, which may need protection to die gracefully (and with minimum disruption to the economy), and even *ailing industries*, which will survive in the long run, but may need short-term protection.

Finally, rising imports due to unfair trade practices may be combated by protectionism. These unfair trade practices include artificially low exchange rates and dumping (selling below marginal cost of production) to force domestic producers out of business before later raising the price once monopoly power is secured. But the problem of this is that it is hard to determine whether dumping is taking place – it is too easy to cry dumping when imports are cheaper than domestic produce.

H2 ECONOMICS QUESTION TECHNIQUE

1	Question	Answer the question – e.g. 'compare' means must have points of comparison. Answer directly – if qn asks why low inflation good, do not say why high inf bad Use examples and apply to the context (see preamble) – especially note if SG Evidence for case study – must calculate & use data. 25m qns can usually be split into a 10m vomit content + 15m discuss section. Define terms in the essay. Evaluation is always a must. It depends on … [fill in the blank]
2	Effects on economy	Micro: Producer / Consumer / Government / Society Macro: Growth / Unemployment / BOP / Inflation Split Short run & Long run
3	Effectiveness = Desirability = Feasibility =	Whether it fulfills the aims Whether it improves the parties' / society's welfare Whether it can be implemented
4	Policy Qns	Start by identify root cause of the problem (solution differs depending on cause) Give alternatives and compare. (qns suggest like 'which is best solution')
5	Trend questions	General direction + exception or refinement BOP: state whether surplus/deficit, and if this is improving/worsening ("balance is worsening" should not appear)
6	SS/DD	Must talk abt both supply side and demand side Bring in elasticity whenever you can.
7	TOTF	How firm survives / grows / profit – include both revenue and cost side factors Firm strategy: lower cost + raise revenue, price and non-price strategy Sales = TR = PxQ Costs = fixed and variable Minimizing costs = SR (SRAC, diminishing marginal returns) + LR (EOS) Existence of small firm = why cannot grow big, survival = why normal profit
8	Market structure	Justification of which market structure – calculate the concentration ratio. Evaluation always talk abt allocative and productive efficiency (most impt)
9	Market failure	25m 'open' qns refer to one or more of these: free market works, market fails, governments can intervene, government fails. Choose which to talk abt. Price control means ceilings and floors, regulation means AC and MC pricing
10	Macro goals	Internal stability vs external stability – external means healthy BOP, stable forex, internal are the other 3 macro goals. Growth: talk about both actual and potential Inflation: talk about both demand-pull and cost-push Unemployment: all 3 types. (full employment still includes struc and frictional!) Standard of living – material and nonmaterial
11	Macro policy	Expenditure switching means switch from imports to local import substitution ind e.g. devaluation, expenditure reducing/dampening means reduce NY and hence reduce M. Refer multiplier for effect of change in AD on NY (for inflation no need). Marshell-lerner is only for devaluation (appreciation some teachers say OK). Do not use for other things!
12	International econs	Globalization qns must talk about trade, labour, and capital flows.