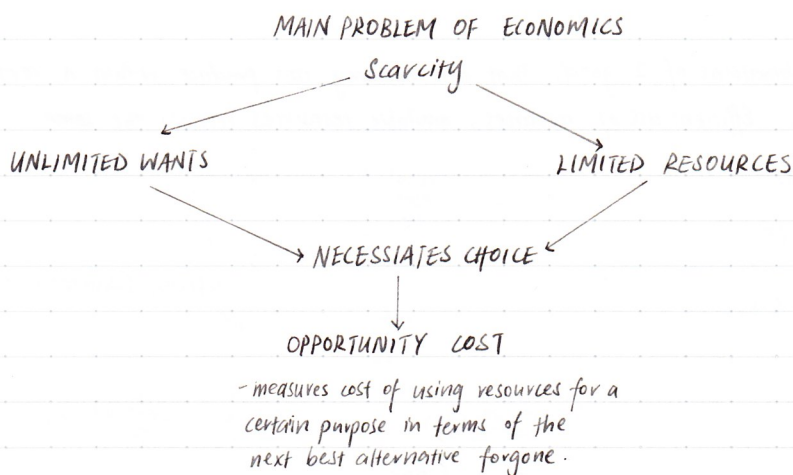


Economics



The 3 Basic Economic Questions

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

The questions can be answered through the way resources are allocated and the type of economic system

Factors of Production

1. Land

- Natural Resources
eg. land, rain, minerals

2. Labour

- Effort, both physical and mental put in by humans

3. Capital

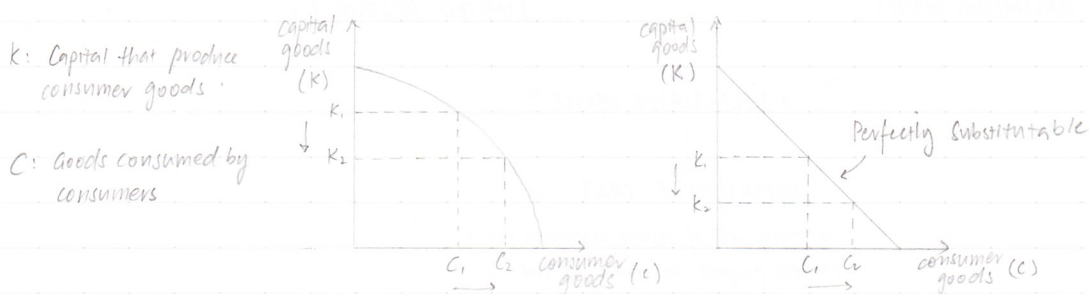
- Fixed: Used over and over in production
eg. machines, tools
- Circulating: Used once, consist of raw materials, unfinished goods & goods waiting to be sold.

4. Enterprise

- A trait of a business, owners, who accept risks.
- Organise, make decisions in production
- Innovate

PRODUCTION POSSIBILITIES CURVE (PPC)

- Shows all maximum combinations of 2 goods that an economy can produce within a certain time period. Assumptions: Efficient use of resources, available resources remain the same



Types of PPCs

Scarcity

- Points outside PPC: Unattainable
- Points on PPC: full and efficient use of resources
- Points inside PPC: Inefficient, wastage of resources

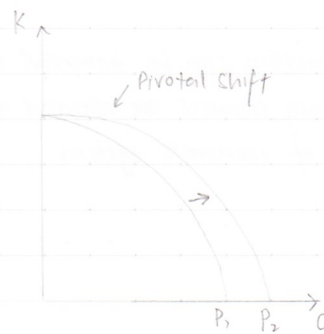
SHIFT IN PPC



Economic Growth



Investment choice



Technological advancement of C only

Due to:

- Technological advancement
- Improvement in productivity of resources
- Increase in quantity of resources

NOTE: ACTUAL \neq POTENTIAL
 - productive capacity

- Producing at A results in more capital, allowing economy to produce at P_3 after a time period.
- Producing at B results in less capital available, allowing economy to grow to P_2 only.

- With same resources, more of C can be produced but not K.

EFFICIENCY

- PRODUCTIVE EFFICIENCY

- All resources must be used
- Economy is producing at maximum output with available technology and resources
- Economy is producing output with lowest possible unit cost.
- All points on PPC is productively efficient

- ALLOCATIVE EFFICIENCY

- Producing the desired output
- Must be producing on PPC (productive efficiency)
- Only one point on PPC represents allocative efficiency

NOTE : Productive efficiency \Rightarrow Allocative efficiency

Allocative efficiency \Rightarrow Productive efficiency

TYPES OF ECONOMIC SYSTEMS

- Economic systems answer the 3 basic questions

FREE / CAPITALIST

- Relies entirely on market forces of supply & demand for allocation of resources
- No government intervention at all.

Example: Hong Kong

CENTRALLY PLANNED / COMMAND

- Relies exclusively on government direction and coordination
- All decisions made by a central authority

Example: North Korea

MIXED

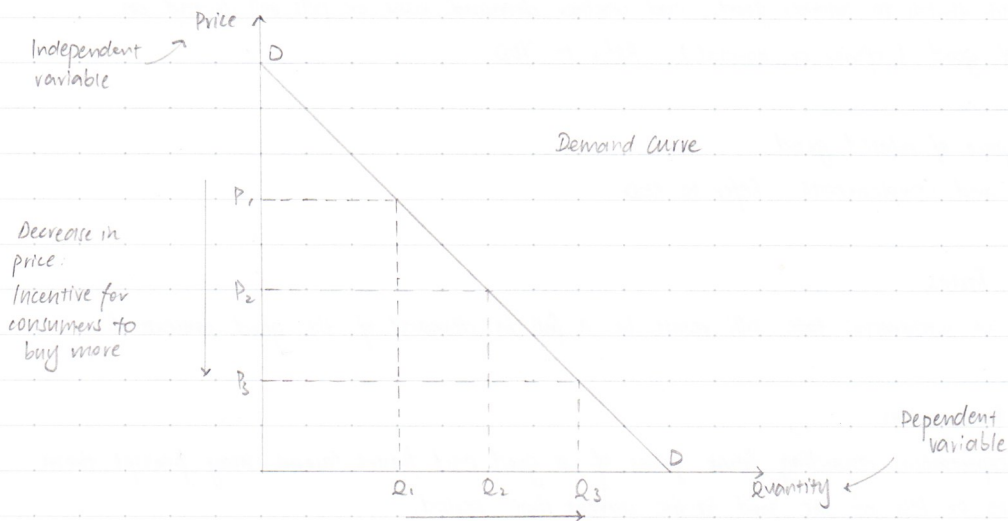
- A mix of both the free and command economy
- Production is still under private enterprises, government regulates when necessary

Example: France, Singapore

DEMAND

Definition: Quantities of a product that consumers are willing and able to buy at a range of prices, in a given time period, *ceteris paribus*.

Law of Demand: The lower the price of a good, the greater the quantity demanded.



Demand Schedule

Price	Quantity Demanded
P_1	Q_1
P_2	Q_2
P_3	Q_3

Demand vs Quantity Demanded

- The whole demand curve
- A specific point on the demand curve

DETERMINANTS OF DEMAND

1. Price of Product

- Change in price causes movement along demand curve
- Substitution effect: consumers switch to cheaper good if price rises

2. Change In Income

- Consumers will switch to another good, and whether demand rises or falls will depend on the type of good (Inferior or normal) Refer to YED

3. Change in price of related good

- Substitutes and complements. Refer to XED

4. Change in Tastes

- A change in consumers' taste will result in a fall in demand of the good concerned.

5. Consumer Expectations

- Consumers' expectations regarding future prices of a good and future income may prompt them to buy more or less of the good in the current time period.

6. Government Legislation

- Taxes, subsidies and laws regarding products may change the cost of production, affecting the price of the good. They may also result in a direct change in demand

7. Change in size of population / demographics

- A larger population would increase demand due to more consumers

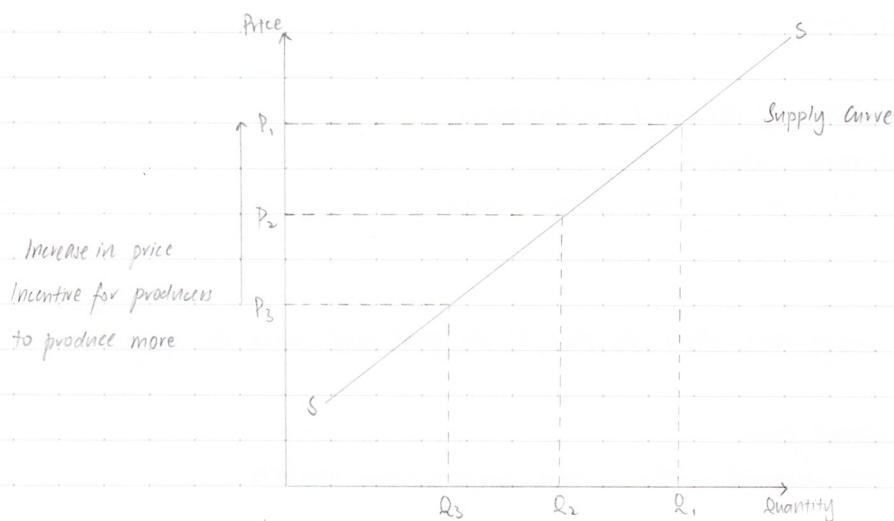
8. Equality in income distribution

- An equality in income would allow more consumers to afford more goods, increasing demand.

SUPPLY

Definition: Quantities of a product that producers are willing and able to sell at a range of prices in a given time, *ceteris paribus*.

Law of Supply: The higher the price, the greater the quantity supplied



Supply Schedule

Price	Quantity Supplied
P_1	Q_1
P_2	Q_2
P_3	Q_3

Supply

vs

Quantity Supplied

- The whole supply curve

- A specific point on the supply curve

DETERMINANTS OF SUPPLY

1. Price of product
 - An increase of the price will allow producers to produce more of the good, thus increasing supply
2. Change in Cost of Production
 - A change in a factor of production will affect producer's ability to produce at the same output at the same price.
3. Changes resulting from Nature / Abnormal Circumstances
 - Adverse effects may decrease supply
 - Favourable conditions, like weather, will increase supply
4. Government Legislation
 - A tax, subsidy or policy may affect the price of the good and hence its supply.
5. Change in price of related good
 - Competitive supply, joint demand. Refer to relationships between markets
6. Change in number of producers
 - An increase in the number of producers will result in an increase in supply
7. Change in technology / techniques
 - Technological improvement will reduce cost of productions, increasing supply.

MARKET EQUILIBRIUM

Equilibrium Price

- The price where quantity demanded is equal to quantity supplied.

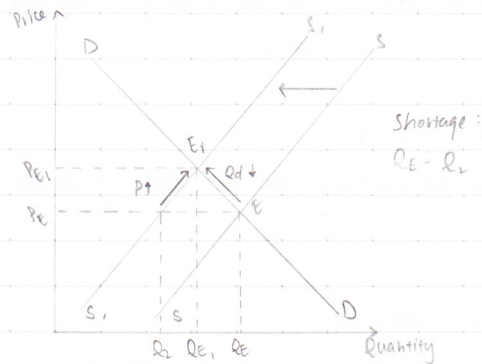
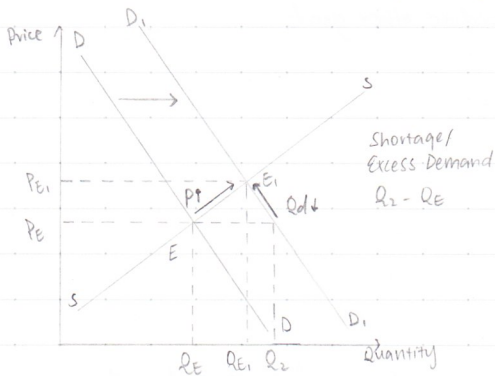
SHORTAGE

Reasons:

- Demand increase, $Q_D > Q_S$
- Supply decrease,
- Due to change in determinants for supply and demand.

Adjustment Process:

$E \rightarrow \text{Shortage/Excess Demand} \rightarrow \uparrow P \rightarrow \downarrow Q_D \rightarrow E_1$



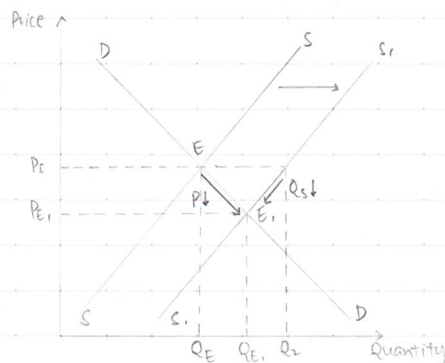
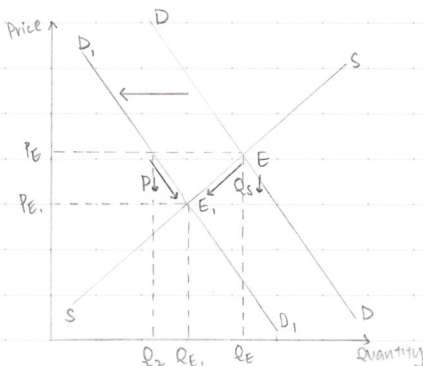
SURPLUS

Reasons:

- Demand decrease, $Q_S > Q_D$
- Supply increase,
- Due to change in determinants for supply and demand

Adjustment Process:

$E \rightarrow \text{Surplus} \rightarrow \downarrow P \rightarrow \uparrow Q_D \rightarrow \uparrow Q_S \rightarrow E_1$



INTER-RELATIONSHIPS IN MARKETS

- COMPLEMENTS (+)

- Goods used jointly to satisfy a want.

- SUBSTITUTES (-)

- Alternative products that satisfy the same wants / needs.

- DERIVED DEMAND (+)

- A demand for a good is derived when it is needed to produce other goods

- JOINT SUPPLY (-)

- Goods that are produced with the same resources

- COMPETITIVE SUPPLY (-)

- Goods that are produced with resources that can only be used once for one good and not the other

ROLE OF PRICE MECHANISM IN COMPETITIVE MARKETS

"Invisible hand of the market" Adam Smith

3 Functions:

1. Signal

- Tells consumers to buy less/more
- Tells producers to produce less/more

Example (Refer to Shortage Diagram below)

- Consumers buy less, Price \uparrow
- Suppliers produce more

2. Incentive

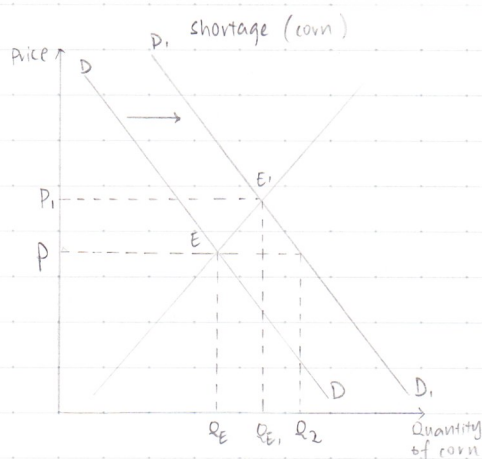
- Motivates consumers to buy less/more
- Gain satisfaction
- Motivates producers to produce less/more
- Increase/decrease in profit

- Consumers buy less as Price \uparrow
- Producers see a shortage of corn, and increases supply as it is more profitable

3. Rationing

- Allocates resources for economy to achieve allocative efficiency

- Those who can buy corn would buy at a higher price, while those who cannot afford it will substitute it for a cheaper good.



CONSUMER AND PRODUCER SURPLUS

CONSUMER SURPLUS

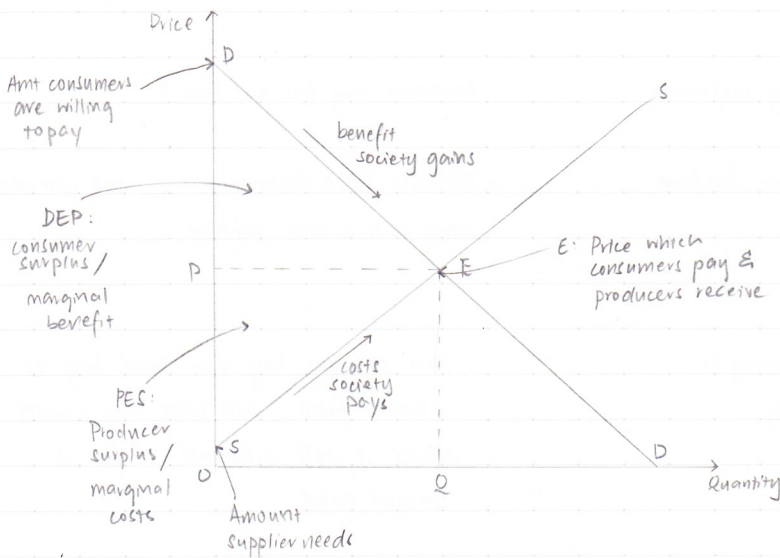
Definition: Difference between what consumers are prepared to pay for a good and what they actually pay

$\frac{ODEQ}{OPEQ}$

PRODUCER SURPLUS

Definition: Difference between what a producer receives from the sale of a good and what the producer is willing to make

$\frac{OPER}{OSEQ}$



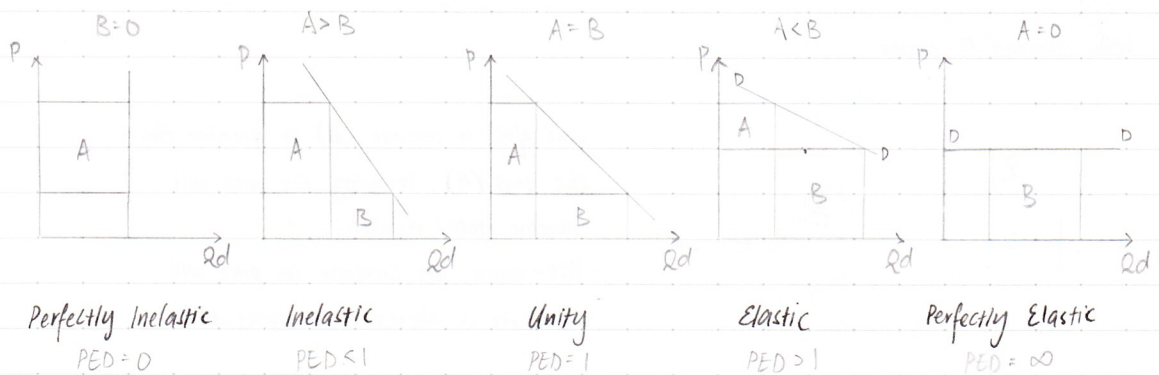
PRICE ELASTICITY OF DEMAND (PED)

Definition: Responsiveness of the quantity demanded of a commodity to changes in its price, *ceteris paribus*

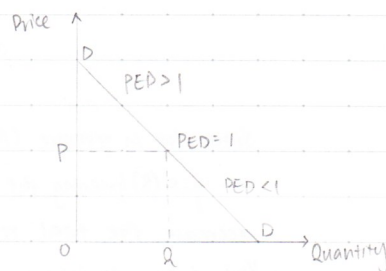
(movement along demand curve)

$$\text{Formula: } \frac{\% \Delta Q_d}{\% \Delta P}$$

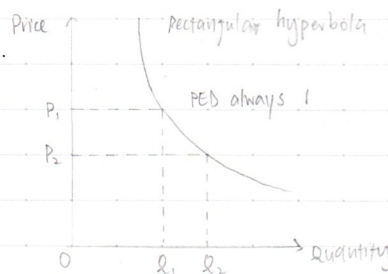
Sign Value: Usually negative, due to Law of Demand



VARYING PED ALONG A STRAIGHT LINE DEMAND CURVE



UNITARY PED DEMAND CURVE

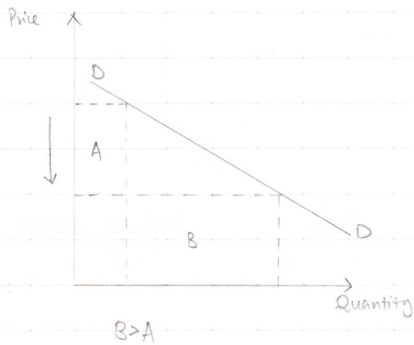


DETERMINANTS OF PED

- Availability of substitutes
- Degree of necessity of commodity
- Proportion of income spent on good
- Time period

APPLICATIONS (Businesses)

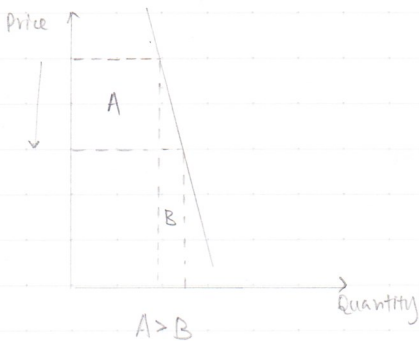
When demand is elastic



Since gain in revenue (B) is greater than the loss (A), lowering the price will increase total revenue.

- Vice-versa, an increase in price will result in a decrease in total revenue.

When demand is inelastic



Since loss in revenue (A) is greater than the gain (B), lowering the price will decrease the total revenue.

- Vice-versa, an increase in price will result in an increase in total revenue.

CROSS PRICE ELASTICITY OF DEMAND (XED)

Definition: Responsiveness of the demand for one good to the change in price of another good

(Shift of demand curve) Formula = $\frac{\% \Delta Q_d (A)}{\% \Delta P (B)}$

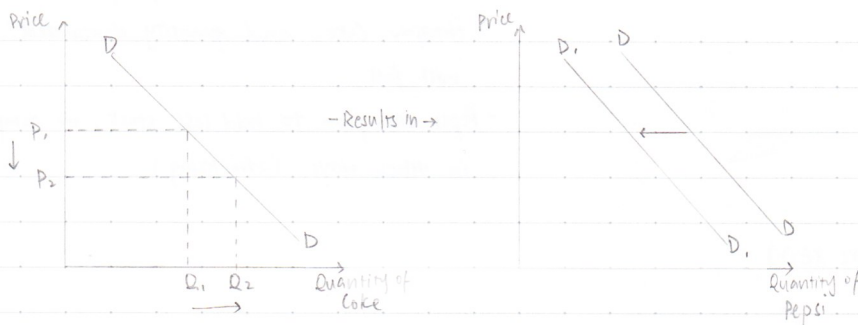
Sign Value: Depends on type of related good

COMPLEMENTS (Negative)



- The stronger the complements, the larger the magnitude

SUBSTITUTES (positive)



- The stronger and closer the substitutes, the larger the magnitude

UNRELATED GOODS (XED = 0)

- Independent goods, where a change in the price of one good results in little or no change in the demand of another good.

DETERMINANTS OF XED

- Relationship between the two goods
- The degree of substitutability / complementarity
 - Higher the degree, higher the XED
- Time period

APPLICATIONS (BUSINESSES)

Substitutes (Positive XED)

Example: Coke & Pepsi

$\uparrow \Delta P \longrightarrow \uparrow \Delta Q_d$

- An increase in price of Coke will result in consumers switching to Pepsi
- Pepsi can plan to increase its stocks in preparation for increased demand.

$\downarrow \Delta P \longrightarrow \downarrow \Delta Q_d$

- Consumers would substitute Pepsi for the cheaper Coke, and quantity demanded will fall
- Pepsi can plan to hold less stock, or compete in other ways (advertising)

Complements (Negative XED)

Example: Cars & Petrol

$\uparrow \Delta P \longrightarrow \downarrow \Delta Q_d$

- The producer of petrol may plan to reduce production or consider supplying to other markets

$\downarrow \Delta P \longrightarrow \uparrow \Delta Q_d$

- Plan to meet rise in demand of petrol by ensuring adequate stock

INCOME ELASTICITY OF DEMAND (YED)

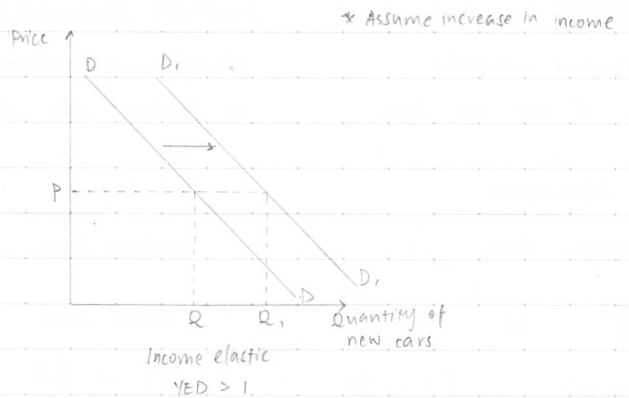
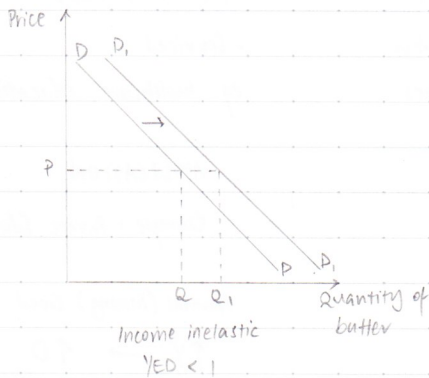
Definition: Responsiveness of demand for a good to a change in income, *ceteris paribus*

(shift of demand curve)

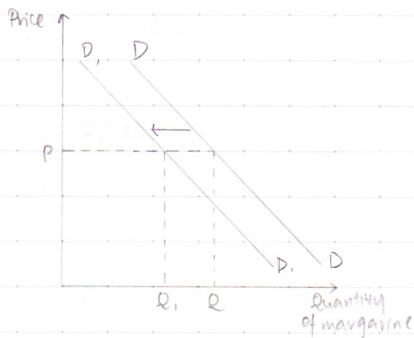
$$\text{Formula} = \frac{\% \Delta Q_d}{\% \Delta Y}$$

Sign Value: Depends on type of good

NORMAL GOODS (positive)



INFERIOR GOODS (negative)



INFERIOR vs NORMAL

- Inferior is perceived as lower quality
eg Pirated DVDs, fake handbags

DETERMINANTS OF YED

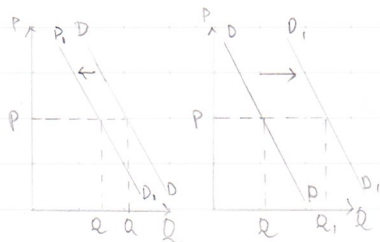
- Nature of goods
 - Is a good considered a necessity or luxury, based on income levels
- Level of Household Income

APPLICATIONS (Producers)

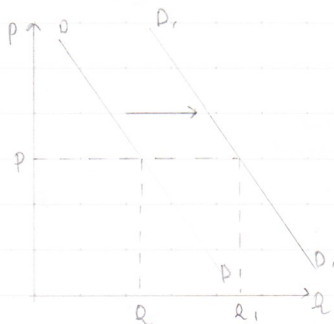
chain of Production

PRIMARY PRODUCERS	SECONDARY PRODUCERS	TERTIARY PRODUCERS
- Extractive industries eg. oil, rice, ore, coal	- Manufacturing, construction eg. buildings, cars, clothes	- Services eg. healthcare, education
APPLICATION	APPLICATION	APPLICATION
Example: Rice	Example: Cars	Example: Private Education
Inferior Good OR Necessity, basic good $\uparrow Y \rightarrow \downarrow D$ (-)	Normal Good $\uparrow Y \rightarrow \uparrow D$ (+)	Normal (luxury) Good $\uparrow Y \rightarrow \uparrow D$ (significant) (+)
Planning to produce less	Planning to build more factories	Planning increase of production

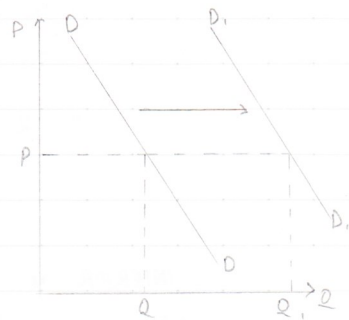
GRAPHS



GRAPHS



GRAPHS

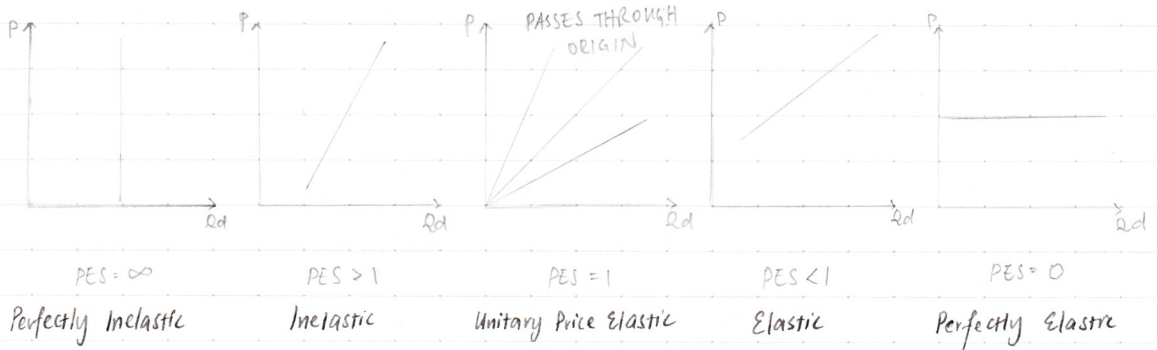


PRICE ELASTICITY OF SUPPLY (PES)

Definition: Responsiveness of quantity supplied of a good to a change in its own price, *ceteris paribus*

Formula: $\frac{\% \Delta Q_s}{\% \Delta P}$

Sign Value: Positive, due to Law of Supply



DETERMINANTS OF PES

- Existence of spare capacity
- Spare capacity

GOVERNMENT INTERVENTION

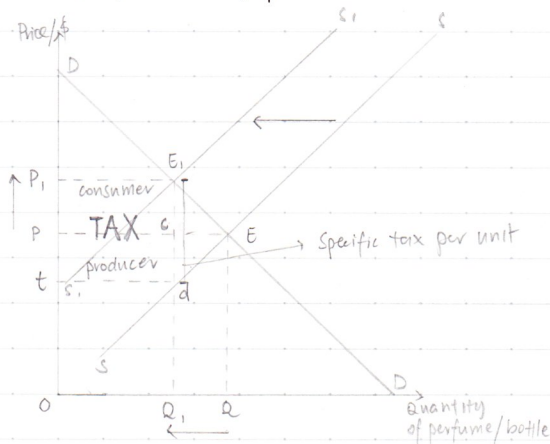
INDIRECT TAX

2 types:

- Specific tax - Fixed amount of tax on each unit sold
- Ad valorem tax - Percentage of price of the good (GST)

Definition: Expenditure tax paid to the government by the producer which is passed on to the consumers.

Example: A specific tax on perfume.



- Equilibrium at E
- Specific tax imposed
- Cost of production increases, supply curve shifts to the left
- Shortage, price increases, quantity demanded falls

STAKEHOLDER EFFECTS

→ Consumer

- Original Price : P
- New Price : P_1
- Pays PP_1E, c of the tax

→ Producer

- Original revenue: $OPEQ$ (tax paid)
- New revenue: $OP_1E, Q_1 - tP_1E, d$
 $= OtdQ_1$
- Pays $tPcd$ of the tax

→ Government

- Gains tax revenue of tP_1E, d

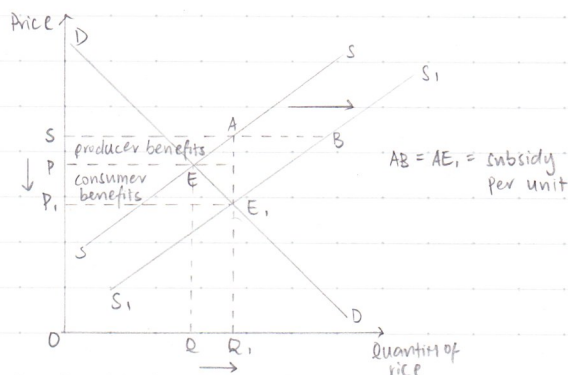
→ Society

- Loses triangle dE_1E
- $\Delta CE, E$ from consumer surplus
- Δdce from producer surplus

GOVERNMENT INTERVENTION

SUBSIDIES

Definition: A government grant given to firms to reduce price and increase quantity



- Subsidy on rice
- Reduce costs of production, a factor of supply
- Supply curve shifts to the right
- Price falls, Quantity demanded rises

CONSEQUENCES ON STAKEHOLDERS

PRODUCERS

(subsidy)

(revenue from sales)

- Producer receives $SP \times OQ_1 + OP_1 \times OQ_1$
- Increase in revenue
- Negative: Complacency due to subsidy, productive inefficiency

CONSUMERS

- Consumer receives $PP_1 \times OQ_1$, from subsidy given to producer
- Increase in consumer surplus
- Lower price, low income groups benefit, which helps to reduce poverty

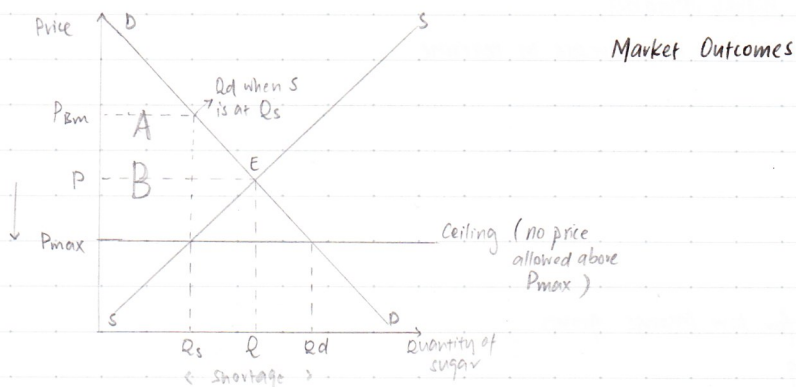
GOVERNMENT

- Incurs opportunity cost, as less money is available to be spent on infrastructure
ie. healthcare, education
- Loses SP, E, A

PRICE CONTROL

Price Ceiling (Maximum Price)

Definition: Legal maximum price that is set below the market equilibrium price



Objective of Price Ceiling

- Allow low income households to afford essential goods & services
- Ensure fairer distribution of these goods and services

Consequences on Stakeholders

→ Consumer

Positive:

- Lower price : $P \rightarrow P_{max}$
- More affordable for lower income groups
- Greater purchasing power
- Increase in consumer surplus
- ↳ from A to B

Negative:

- Shortage, leads to queuing
- Black markets appear
- ↳ for same Q_s , it can be sold at P_{Bm} instead of P_{max} , lower income groups suffer → welfare loss

~ GOVERNMENT FAILURE

→ Producer

Negative: Lower prices at P_{max} ,

- ∴ Lower revenue
- Fall in producer surplus
- Workers may lose jobs

→ Society

- Negative welfare loss from producer & consumer surplus
- Allocative inefficiency

→ Government

Negative

- Black market
- Shortage created

Positive:

- Only if low income groups benefit
- Reason to prevent shortage
- ↳ which incurs high admin costs.

→ Price Control affecting Related Markets

- Price Ceiling

- Due to shortage, consumers look to substitutes
- Substitute markets have higher demand
- Producers in these markets have an increase in revenue.

Examples of Price Ceilings

- Rent Controls

- Affordable housing for low income group
- Shortage of housing
- Long waiting list for interested tenants
- Underground / Parallel markets

- Food Price Controls

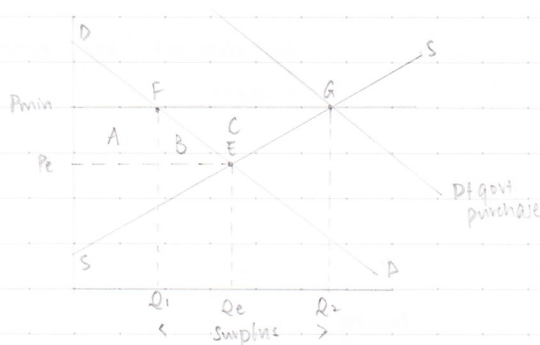
- Greater affordability
- Shortages
- Development of underground markets
- Unemployment in agricultural sector
- Allocative inefficiency

PRICE CONTROL

Price floor (Minimum Price)

Definition: A price set above the market equilibrium by a government or private organisation

1. AGRICULTURAL PRODUCTS



Market Outcome

- Surplus created
- Government usually buys excess

Objective

- Transfer income from consumers to producers → increase producers' income

Consequences

Consumers

- Higher price at P_{min} for lower Q
- Lower consumer surplus (loses A+B)

Government

- Opportunity costs in buying up excess surplus Q_1FGQ_2

Welfare of Society

- Over allocation of resources
↳ Allocative inefficiency
- Loses area C

Producers

- Higher total revenue
- Increased producer surplus (A+B+C)
- May lead to inefficiency due to complacency

Other Countries

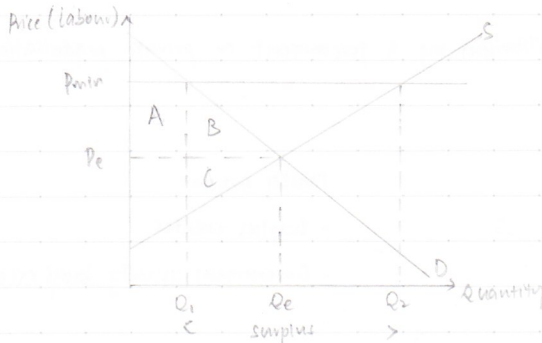
- Govts selling of excess surplus at low prices may affect markets in other countries, as local producers have to compete with lower prices.

Workers

- Only gains when govt. buys excess surplus, as firms will then earn more

5. Minimum Wage

Objective: Improve living standards of low wage workers



Market Outcome

- Surplus
- Lower labour demanded
- Govt does not "buy" excess workers

Consequences

Negative

Workers (Supply of labour)

- Unemployment due to lower demand
- Leads to illegal workers at lower wages
↳ Foreign immigrants

Society

- Misallocation in product markets
↳ due to unskilled workers

Firms (consumers of labour)

- Higher production costs
- Loss in employer surplus (A+B)

Consumers

- Increase in labour costs results in decrease in supply of goods

Positive

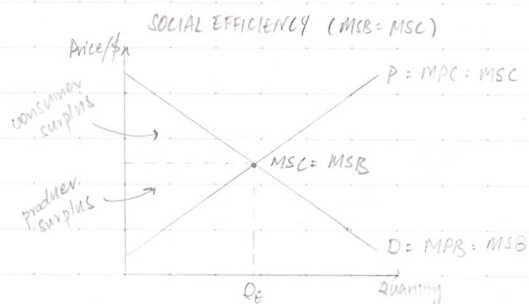
Workers

- Some get a higher pay
- Gain in worker surplus
↳ Lose C, gain A.

MARKET FAILURE

Definition: Failure of a market to achieve efficiency in the allocation of society's resources, resulting in an over-allocation of resources / under-allocation of resources in the absence of government intervention.

Allocative efficiency / Productive efficiency / Social efficiency



Allocative: Specific combination and quantity of goods produced desired by consumers.

Productive: Producing at maximum output for the least cost.

Social: Marginal benefit to society = marginal cost to society ($MSB = MSC$)

MPB Marginal Private Benefit: Individual Benefit of an extra good consumed.

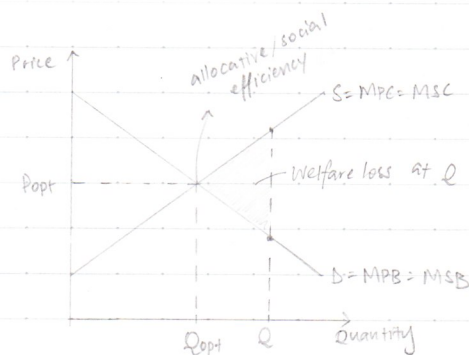
MSB Marginal Social Benefit: Society's Benefit of an extra good consumed.

MPC Marginal Private Cost: Producer's cost to produce an extra good.

MSC Marginal Society Cost: Society's cost to produce an extra good.



Under consumption / production



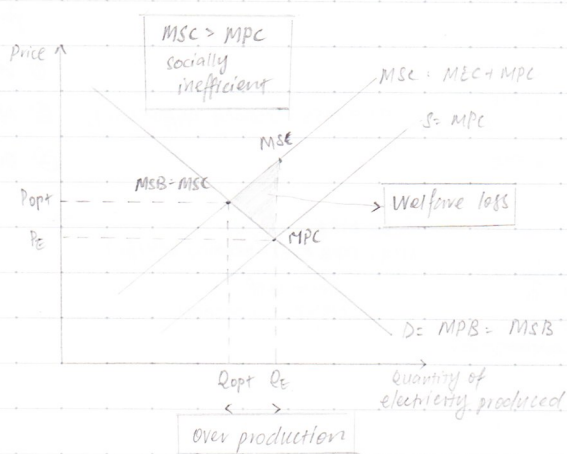
Over consumption / production

MARKET FAILURE

NEGATIVE EXTERNALITIES / EXTERNAL COSTS IN PRODUCTION

- Definition: Third party spillover effects of a consumption/production activity, for which there is no compensation

Examples: Production of electricity by burning coal: third party effect: pollute the environment



evidence of market failure

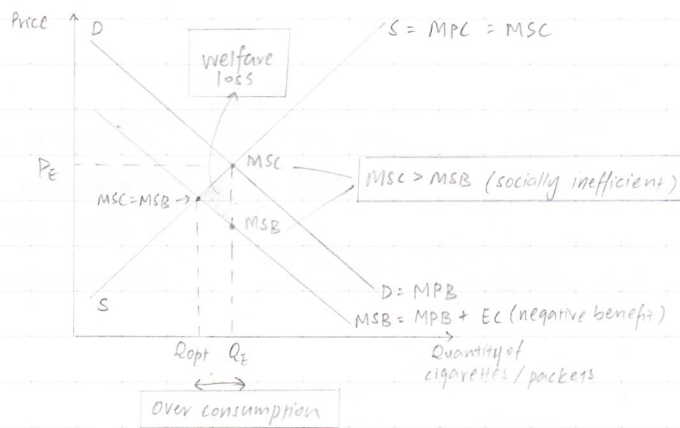
- ① Welfare loss
- ② $MSC > MPC$
- ③ Over production

MARKET FAILURE

- NEGATIVE EXTERNALITIES / EXTERNAL COSTS in CONSUMPTION

Examples:

- Smoking \rightarrow third-party effects: secondary smoking \rightarrow health costs, discomfort
- Alcohol \rightarrow third-party effects: alcohol abuse \rightarrow injuries, health costs



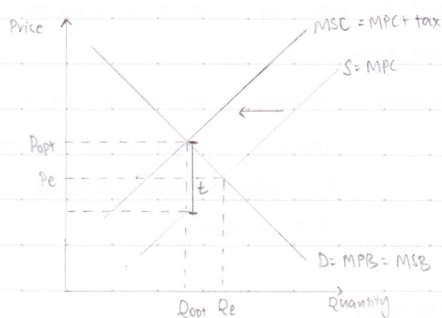
Evidence of market failure

- ① Welfare loss
- ② $MPB > MSB$
- ③ Over consumption

GOVERNMENT INTERVENTION (External Costs)

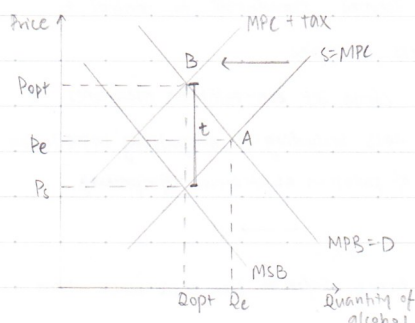
Market based Solutions - Impose tax

production



- Specific tax on MPC (tax = external cost)
- MPC shifts to MSC ($MPC + \text{tax}$)
- New equilibrium at P_{opt} Q_{opt}

consumption



- Specific tax on MPC (tax = external cost)
- MPC shifts to $MPC + \text{tax}$
- Price increases (P_e to P_{opt}), MPB shifts from A to B
- New price: P_{opt}

Advantages

- Forces firms to pay for the social costs of its production
- Incentive for firms to develop cleaner technology to pay less tax
- Tax can be varied according to social costs
- Tax serves to reduce social costs, and can also increase revenue of govt.

Example: Sweden can reduce income taxation

- Easy to implement

Advantages

- Allows the govt. to increase its revenue.
- Easy to implement

Disadvantages

- Difficult to estimate exact external cost and hence the amount of tax imposed.

Disadvantages

- Difficult to estimate exact external cost
- Excess tax can encourage black markets
- Inelastic PED will need a higher tax to reduce quantity consumed
- Tax will affect lower income groups, causing income inequality

Other Solutions (non-market based)

PRODUCTION

Legislation

- Setting laws, licences, standards to control & control business activities

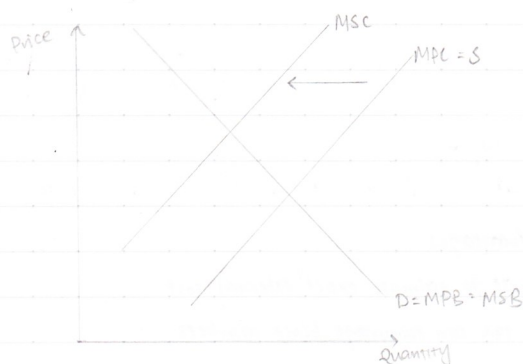
Examples: China set anti-pollution measures in 2015 including compulsory installation of pollution abatement equipment

ADVANTAGES

- Simpler than taxes. Safer to ban toxic waste than impose a tax
- Implemented when govt thinks externalities are serious enough to have far-reaching effects on society

DISADVANTAGES

- Regulations create no market based incentives, \therefore unable to make distinctions between firms with higher or lower costs of reducing pollution
- Laws must be harsh in penalties to be efficient
- High cost to enforce laws
- Lack of sufficient technical information might hinder effectiveness



CONSUMPTION

Legislation

- Enact laws prohibiting or regulating behaviour which cause external costs

Example: Prohibition of the sale of alcohol and cigarettes to people under the age of 18. Helps to reduce demand, shifting MPB to MSB

ADVANTAGES

- Easy to understand policy that citizens can follow
- Easy to implement

DISADVANTAGES

- Govt needs to inspect firms regularly to enforce the restrictions
- Penalties need to be harsh in order for the regulations to work
- Producer gets gain in revenue - due to price increasing from reduced demand (provided PED is inelastic)



Other Solutions (non-market based)

PRODUCTION

- Tradable Pollution Permits

- Firms are set a limit on the amount of pollution they can discharge. Tradable permits are given, creating a market for pollution
 - Firms that want to pollute above the limit have to buy permits
 - Firms can sell permits if it has low emissions
 - Acts as an incentive for firms to reduce pollution, as permits can be sold for profit. \therefore MPC shifts toward MSC
- examples: EU, Australia, China

ADVANTAGES

- Incentive for firms to cut back on pollution
- Setting a limit for permissible pollution allows MSC to be achieved easily
- Does not need to accurately estimate external costs like in taxes (Market based solution)

DISADVANTAGES

- Administratively costly if there are many polluters
- Efficient level of pollution must be known & set
- Firms with greater financial power may see no incentive to cut back on pollution
- Small firms are not able to compete with big firms in buying permits (although small firms may pollute less, thus not need permits)
- Big firms may become monopolies as small firms cannot afford permits or adopt environmentally friendly techniques
- Corruption, where favoured firms are given more permits
- Difficult to exactly determine amount and type of pollutants to set as a limit

CONSUMPTION

- Education/ Provision of Information

- Government provides information and education through campaigns or media
- Time to educate consumers through public awareness on harmful effects of demerit goods (ie alcohol)
- Through a change in taste of consumers, demand shifts from MPB to MSB.

Health Promotion Board, Healthier Choice Campaign

ADVANTAGES

- The policy is long term and aims at changing the tastes of consumers
- More permanent policy

DISADVANTAGES

- Long term policy, which results in high costs
- No definite outcome

Example: The disturbing pictures on cigarette packs meant to educate and discourage smokers are not very effective - still many smokers.

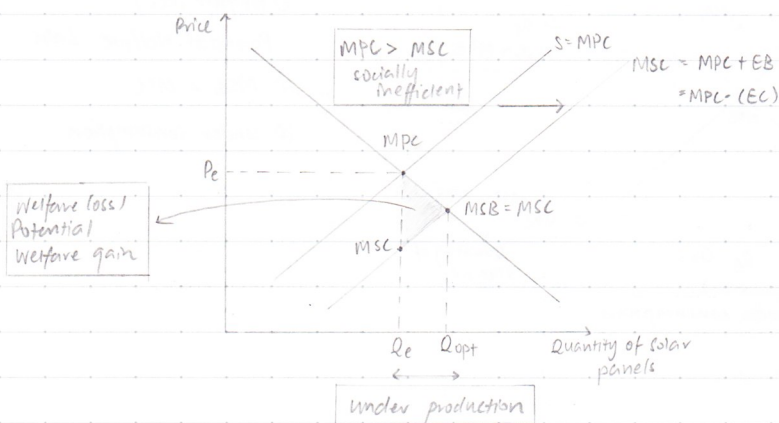
MARKET FAILURE

POSITIVE EXTERNALITIES / EXTERNAL BENEFIT IN PRODUCTION

- Definition: External benefits from production or consumption experienced by third parties.

Examples

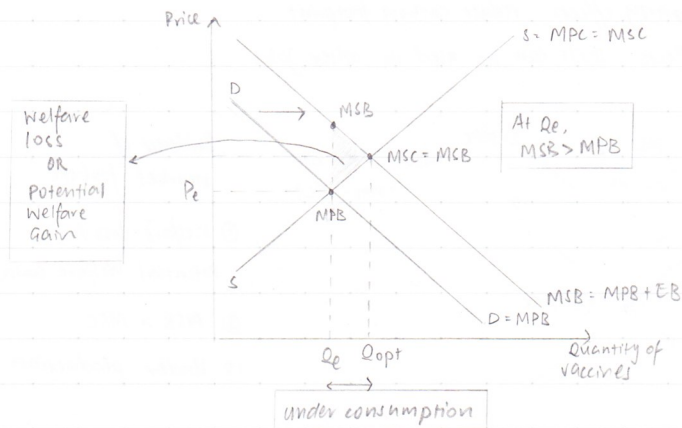
- Production of solar panels \rightarrow third party effects: reduce carbon footprint
- Training/skills \rightarrow third party effects: skills can be used in other jobs



POSITIVE EXTERNALITIES / EXTERNAL BENEFIT IN CONSUMPTION

Examples:

- Vaccination → third party effects: not causing others to fall sick

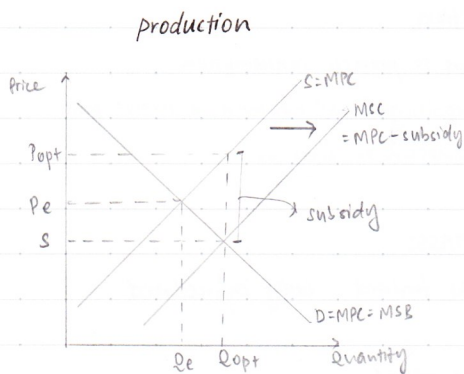


Evidence of market failure

- ① Welfare loss / Potential welfare gain
- ② $MSB > MSC$
- ③ under consumption

GOVERNMENT INTERVENTION (EXTERNAL BENEFIT)

Market based Solutions



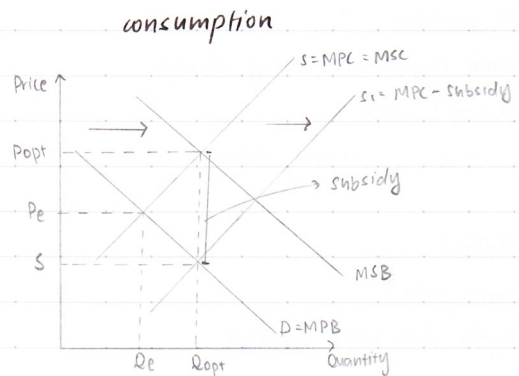
- Govt internalizes the positive benefits by providing subsidies
- Supply curve (MPC) shifts to MSC
- Optimal equilibrium

Advantages

- Subsidizing good production practices creates an incentive for firms to adopt these practices
- Incentive for firms to send workers for training
 - Singapore budget 2012, 95% course subsidy for firms who send workers for training

Disadvantages

- Difficult to estimate level of subsidy
- Opportunity cost



- Govt provides subsidy to firms
- Shifts MPC to MPC - subsidy
- MPB moves to MSB
- Optimal equilibrium

Advantages

- Still permits market to operate
- Ensures firms pass benefits to consumers
- Can be adjusted to the magnitude of problem
- Benefits low income groups

Disadvantages

- Difficult to estimate external benefit and hence the success of the subsidy
- Opportunity cost

Other solutions (non-market based)

production

Public provision

- Provide vocational training through training centres
- Singapore's Continuing Education & Training

ADVANTAGES

- Creates jobs
- benefits low-wage workers

DISADVANTAGES

- Costs incurred in setting the training centres
- Quality of expertise sourced may be questionable
- Difficult to read and diagnose the current needs of the labour market and hence the appropriate training courses

consumption

Legalisation

- Set laws to promote consumption
- Compulsory for all newborn to receive polio vaccination in Singapore

ADVANTAGES

- Straight forward, easily implemented

DISADVANTAGES

- Requires large amounts of resources to enforce

Direct Provision

- Govt provides shortfall through contacting firms to supply the shortfall or take over the entire provision of these goods

ADVANTAGES

- Quality & amount of provision is decided by government, most probably at the socially optimum amount
- Direct method, more direct than campaigns

DISADVANTAGES

- Difficult to gather enough information to estimate right amount to provide.
- Opportunity costs in financing direct provision, taxes may be raised
- Full provision by government denies consumers choice of services from the private sector, may unnecessarily diminish consumer satisfaction

Types of Goods

MERIT GOODS

- Deemed socially desirable by the government
- Arise from a divergence between the values of society and individuals
- Has positive externalities (in consumption/ production)
- Government encourages these goods
Examples: Vaccines, education
- Has rivalry and excludability
ie: is a private good

DEMERIT GOODS

- Deemed socially undesirable by the government
- Undesirable for society and individuals
- Has negative externalities (in consumption/ production)
- Government discourages and controls these goods
Examples: Cigarettes, alcohol
- Has rivalry and excludability
ie: is a private good

PRIVATE GOODS

Characteristics:

- Rivalry
 - Diminishable, two people cannot use the same good at the same time
- Excludability
 - Possible to prevent people from consuming - price

PUBLIC GOODS

Characteristics:

- Non rivalry
 - Everyone can experience the same benefit at the same time
- Non-excludability
 - No market price

Examples: National defense, street lighting, music

Problem: Free Rider Problem

MARKET FAILURE

- Missing market for Public Goods

FAILURE: No provision in a free market

↳ non excludable → cannot charge a realistic price → no profit

- no resources will be allocated to produce the public good

Government Intervention

- Provide the public good using taxpayer's money

- Missing market for merit goods

FAILURE: Under provision

- excludable - fixed cost of production is high - underconsumption
- Consumers do not recognise the full benefits of merit goods
- Incomes may be too low to afford high prices

MARKET FAILURE

Common access resources

- Free goods - no price, available to everyone
- Non excludable
- There is rivalry - diminishable

Examples: Minerals, forests, lakes

Market Failure:

- Abuse, misuse, overuse of these resources.
- Lack of price leads to over consumption - due to rivalry
- Also poses a threat to sustainability - depletion of resources

DEFINITION: Satisfying the needs of the present generation
SUSTAINABILITY without compromising the needs of future generations.

Roy Lai | More free notes at tick.ninja

1. Differences between Micro & Macro

Micro

- Study of markets - one product
- Individual consumers / producers

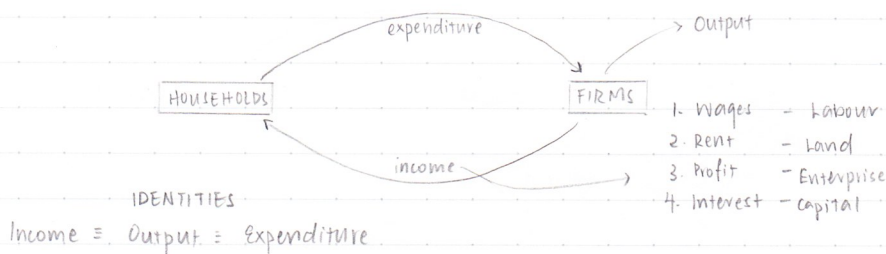
Macro

- Whole economy
- Aggregates eg. GDP, unemployment, inflation

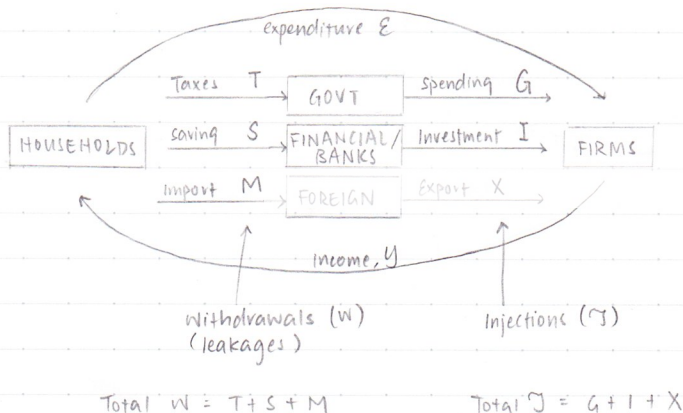
Circular flow of income

Definition: The flow of income between households and firms

2 SECTOR MODEL (simple)



4 SECTOR MODEL (complex)



Changes in Circular flow

Withdrawals > Injections

- More leakages, hence less income is spent
- Examples: Greater saving → Paradox of thrift
- Expenditure falls
- Fall in income → Dampening of circular flow

$$\uparrow W \rightarrow \downarrow Y \rightarrow \downarrow W$$

- Withdrawals fall till $W = J$
(Overall lower level of income)

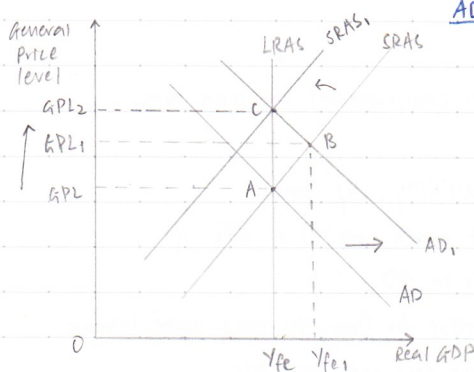
Withdrawals < Injections

- Less leakages
- More spending
- Higher expenditure
- Higher income

$$\downarrow W \rightarrow \uparrow Y \rightarrow \uparrow W \quad (\text{more saving?})$$

- Withdrawals increase until $W = J$
(Overall higher level of income)

Classical Model of NI and Employment



AD increases

- Start with full employment equilibrium, at OY_{fe} ($LRAS = SRAS = AD$ at full employment level of income)
- Increase in AD (AD_1). Equilibrium shifts from A to B
- Y_{fe} moves to Y_{fe1}
 - ↳ Higher price level (GPL_1) motivates producers to increase output and employ more labour
 - ↳ At Y_{fe} , there is NATURAL unemployment
 - ↳ The unemployed thus get jobs, and $Y_{fe} \rightarrow Y_{fe1}$ (increased wages)
- ↳ At Y_{fe1} , there is NATURAL unemployment (wage materials)
- Due to increase in GPL, prices of factors increase.
 - ↳ SRAS falls to $SRAS_1$.
 - ↳ Output \downarrow , Real GDP falls BACK to Y_{fe} .

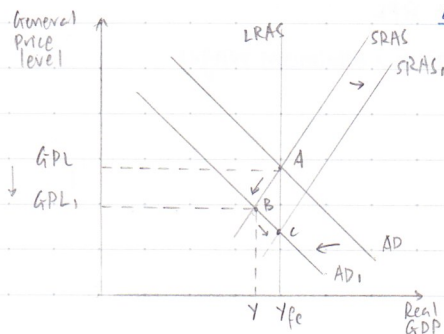
Assumptions of model:

- Prices are flexible
- Price mechanism p39

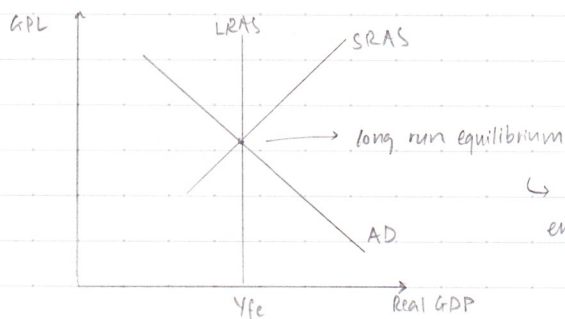
Natural unemployment

- Frictional
- Structural
- Seasonal

AD falls



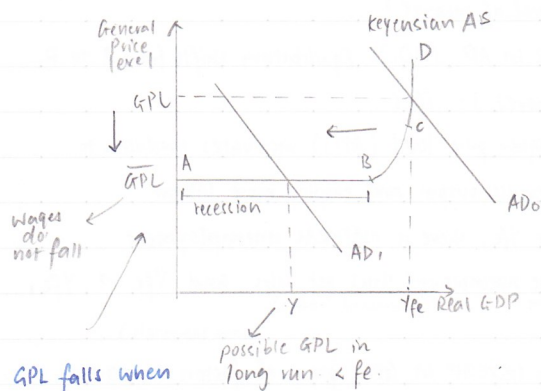
- AD falls to AD_1
- GPL falls to GPL_1
- Factor prices falls
 - ↳ SRAS \uparrow , more profit
- Output \uparrow , GDP increases to Y_{fe}



↳ Due to full employment

Keynesian Model of NI and Employment

- Assumptions:
- 1) Prices are not necessarily flexible
 - 2) Economy will NOT necessarily be at full employment in long run



- Price inflexibility, esp wages
- Prices get stuck (rigid) at $\overline{GP_L}$ if AD_0 falls to AD_1 .
- No incentive for firms to take more labour
 ↳ Output does not increase
- Economies can get stuck in a recession, which can become a depression

- GP_L falls when AD falls as factor of production is sold at a lower price.
- Inflexible at $\overline{GP_L}$ due to spare capacity of resources.
- At BC, resources become strained
 ∴ Price increases

Increase AD by Govt spending (Fiscal Policy)

Why is it not possible for the economy to adjust?

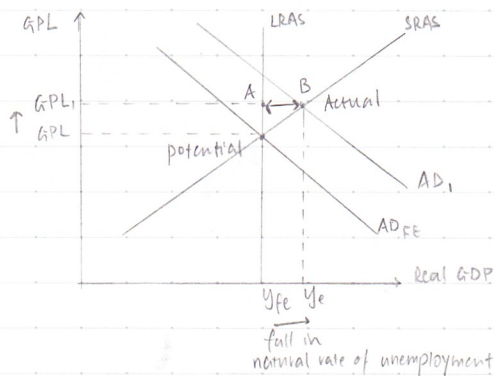
- Prices get stuck at $\overline{GP_L}$
 ↳ Due to trade unions / minimum wages

Equilibrium level of income

- Types:
1. Full employment (only seen in the long run in classical model) (Great Depression)
 2. Less than full employment (short run in classical model, all periods for Keynesian)

Inflationary Gap (equilibrium) - $AD = SRAS$

- occurs when actual output is greater than potential



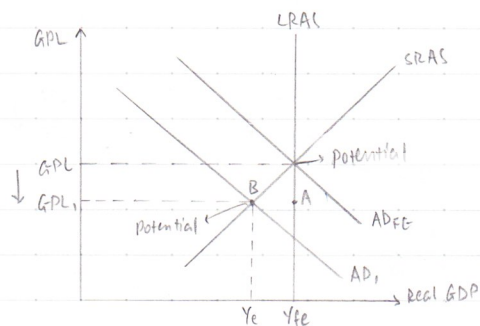
- AD increases from AD_{FE} to AD_1
- Inflationary gap is between AB

Classical: Reduce govt. intervention
- Supply-side policy

Keynesian: Change AD

Deflationary Gap

- Occurs when actual output is less than potential output



- AD decreases from AD_{FE} to AD_1
- Deflationary gap between AB

Classical: Govt to spend more

UNEMPLOYMENT

Those employed + Those unemployed = work force / labour force

↳ People willing and able to work

Housewives are not
as they are not willing

Unemployment rate = $\frac{\text{No. unemployed}}{\text{labour force}} \times 100\%$

↑
NS men are
NOT work force
(not able)

Those unemployed
but looking for
jobs ARE still part
of the work
force

Labour force participation rate = $\frac{\text{Labour force}}{\text{Working age population}} \times 100\%$

Ways of measuring unemployment

Claimant: Measure of those receiving unemployment benefits

Standardised: People of working age not working but willing and able to work

Problems:

- Hidden Unemployment (under stated)

- Claimant: People receiving unemployment benefits are not serious about looking for a job

People who are unemployed and have given up looking for jobs (but still willing to work)

Examples: Drug dealers, illegal arms dealing, subsistence farming, non-market sectors

Unemployed not receiving benefits.

- Under-Unemployment

- Part time jobs

- People employed in jobs that do not make full use of their skills

Costs of Unemployment

1. Private (Individual)

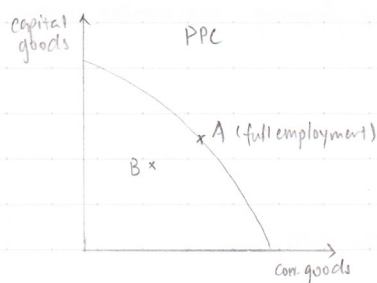
- Loss of income and wages
- Reduced living standards → less goods and services also, increases debts
 - ↳ Stress, psychological effects

2. Social (Society)

- Homelessness, Violence, crimes, theft
 - ↳ costs of policing
- Less tax collected by govt.

3. Whole Economy

- Demand deficiency unemployment



Natural Unemployment

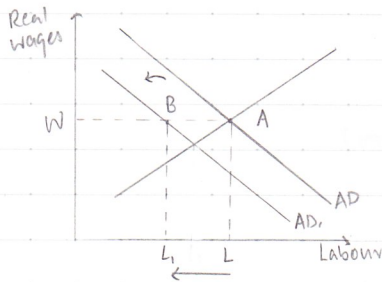
- frictional, structural, seasonal
- Voluntary unemployment

- AD insufficient to produce full employment. i.e. recession
- Deflationary gap
- Disequilibrium unemployment / involuntary unemployment
 retrenched

Types of unemployment

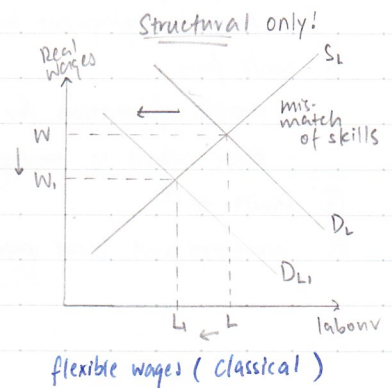
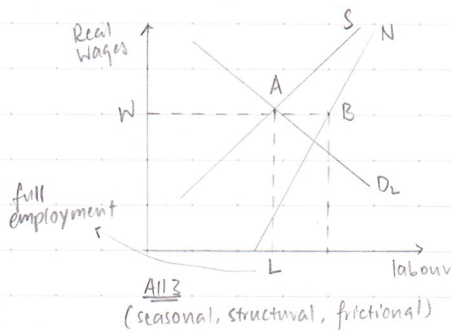
1. Demand Deficient

- Lack of A.D. - insufficient vacancies



- A.D. falls \rightarrow Demand for labour falls
- Wages are inflexible downwards (Keynesian)
- Unemployment L_1, L

2. Natural Unemployment



- Seasonal:
- Structural: Mix-match of skills
- Frictional:

Causes of unemployment

- ① Structural: Demand / supply factors. Eg low-end / high-end electronics in Singapore demand for low-wage workers fall
- ② Seasonal: Time, lack of information, Resistance of workers
- ③ Frictional: Information failure, time required to get a job.
↳ imperfections in labour market (labour rigidities)
- ④ Demand Deficient $\rightarrow \downarrow AD$ due to \downarrow in $(I, G, (x-M))$.

Policies

- ① Training Programmes
 - lower unemployment benefits
- ② Trade fairs
 - provide information for workers
 - Refer workers to employers
- ③ Similar to ②
- ④ Monetary and fiscal policy

