Market Failure (Promos Revision):

Overview of Economic Systems:

- Problem of scarcity: limited resources and unlimited wants, how to allocate efficiently?
- What and how much to produce?
- How to produce?
- For whom to produce?

Introduction to Market Failure:

- Market Failure: failure of the free market to achieve allocative efficiency, resulting in over or under-allocation of resources
- Static Efficiency: efficiency at a given point in time
    - Allocative Efficiency: combination of goods and services maximizing societal welfare
        - Society produces at a point on the PPC
        - P = MC , society's valuation of the last unit of good produced is equal to the opportunity cost in producing the last unit of output
        - MSB = MSC (additional cost to society of the last unit of output produced/consumed is equal to the additional benefits to society of the last unit of output produced/consumed)
    - Productive Efficiency: all resources are fully and efficiently utilized
        - Macro-perspective: society produces at any point on PPC (no unemployment or underemployment)
        - Society's POV: LRAC is at its minimum (MES)
        - Firm's POV: all points on the LRAC represent the lowest possible average cost of producing each given level of output
- Dynamic Efficiency: R&D, investment in human capital

Free Market Problems:

- Assuming perfect competition and absence of market failure, the economy allocates resources based on market demand and market supply
- Each agent is rational and pursues only its self-interest (thus P=MC, AE is achieved)
- AE achieved when the sum of CS and PS is maximized

Sources of Market Failure

1. **Externalities** (ignoring third party effects due to pursuit of self-interest)

- Occurs when some of the costs or benefits associated with production/consumption "spills over" to third parties, private decision maker does not account for these costs/benefits
- Creates a divergence between private and social costs/benefits
    - MSB = MPB + MEB
    - MSC = MPC + MEC

- Negative Externalities in Production
    - External costs create divergence between MPC and MSC
    - MEC increases as output increases
    - Free market equilibrium where MPC = MPB (allocatively inefficient)
    - Socially ideal output level MSC = MSB (overproduction of the good)
    - Market failure and deadweight loss
    - EXAMPLE: water pollution from chemical plants (ext.) -> fishes die and loss of income for fishermen / health costs from consuming dirty water (ext. costs)

- Negative Externalities in Consumption
    - Divergence between MPB and MSB (MSB < MPB)
    - Valuation of benefit of smoking by the smoker is greater than society's valuation
    - Free market equilibrium MPB = MPC, socially optimal level is MSB = MSC (overconsumption)
    - EXAMPLE: smoking -> generates second hand smoke inhaled by others -> fall sick and incur medical bills but not compensated

- Positive Externalities in Consumption
    - Individuals ignore external benefits / positive externalities
    - Divergence between MPB and MSB (MSB > MPB)
    - Under-consumption of the good
    - EXAMPLE: vaccinations -> ensures that others are less likely to be infected -> reduce healthcare costs, healthy workforce, increase GDP

- Positive Externalities in Production
    - Divergence between MPC and MSC (MPC > MSC)
    - Under-production of the good

2. **Demerit Goods and Merit Goods** (imperfect information and externalities)

Demerit Goods
- Goods that the Government deems to be bad or undesirable or harmful for consumers and the rest of society -> paternalistic role of Government
- Imperfect Information (don't know)
    - Due to imperfect information, consumers either overestimate the private benefits or underestimate the private costs of consumption
    - In free market, the demerit good is overconsumed with welfare loss to society
- Negative externalities (don't care)
    - In the pursuit of self-interest, consumers ignore the externalities as they are borne by others in society and overconsume, leading to welfare loss

Merit Goods
- Goods that the Government deems to be good and desirable for consumers and the rest of society
- Imperfect Information
    - Due to imperfect information, consumers undervalue the goods and consume too little, individuals underestimate their personal benefits
    - Goods will be under-consumed and under-provided, too little resources allocated
- Inability to pay
    - Allocation of resources depends on dollar vote, which depends on income and savings
    - Excessive unequal distribution of income results in misallocation of resources since free market will not respond to the needs of people with insufficient dollar votes
    - Lack of effective demand of the poor (ability to pay)
    - Welfare improves if income becomes less unequal
- Positive Externalities
    - In the pursuit of self-interest, ignore positive externalities and consume too little

3. **Public Goods** (non-excludable and non-rivalrous features -> free rider problem)

- Non-excludability
    - Impossible or very costly to exclude non-payers from consuming the good once provided

    - No one has the incentive to pay, difficult to collect fees -> free rider problem
    - Example: radio broadcast and national defence
- Non-rivalrous
    - Consumption by one person does not reduce the amount available to others
    - Marginal cost of serving an additional user is 0
    - Since MC = 0, efficient provision of public goods means consumers pay 0
    - Private markets will never provide goods at the price of 0, thus AE not achieved

4. Market Imperfections (Market Dominance)

- In imperfect competition market structures, profit-maximizing output level is not AE
- By restricting output to maximize firm's profit, CS and PS will decrease, thus DWL to society
- Productive inefficiency: firms may operate at a point above LRAC (X-inefficient – complacency)
    - Can still make long run supernormal profits, wastage of scarce resources

5. Imperfect Information

- Merit and demerit goods: imperfect information about benefits or costs
- Due to persuasive advertising: misleading information about the benefits of a good (lead to higher than socially optimal level of consumption)
- Asymmetry of Information: one party has better information than the other (inaccurate, uncertain or misunderstood data)

6. Factor Immobility

- Occupational Immobility
    - Barriers to mobility of FOP between different sectors of the economy (FOP unemployed or not used in a productively efficient way)
    - Example: labour (job-specific skills), known as structural unemployment
    - Example: capital inputs not mobile
- Geographical Immobility
    - Barriers against moving from one area to another to find work
    - Includes: family and social ties, financial costs in moving home, regional variations in housing prices, differences in cost of living

7. Excessive income inequality

Introduction:

- Wealth is the accumulated value of physical and financial assets of an individual
- Free market system, goods and services are allocated according to income distribution, "for whom to produce" depends on the dollar votes (allocates resources to those who can pay)

Representations of Inequality:

- Lorentz Curve
- Gini Coefficient (higher coefficient = more unequal income distribution)

<u>Causes of WAGE Inequality:</u>

A. Competitive Markets

- Individuals who receive higher wages provide services in high demand (low supply)
    - More educated, more skillful human capital
    - Higher productivity, work harder
    - Generate higher returns to the company
- Low wages due to lower ability + receive less education and training
    - No property resources, discrimination against minority

- Aged, handicapped or the sick

B. Monopoly
- Monopoly gains part of the loss in CS, at the expense of the consumer

C. Other Causes
   a. Education: access to quality of educational services
   b. Globalization: pressures of global competition -> more flexible labour policies

NON WAGE Inequality:
- Unequal factor endowment: interest, rents, profits to those who possess financial assets
- Low wages – lower ability to save, unable to accumulate financial and physical assets

Desirability:
- Act to improve resource allocation
- Incentive for workers to improve themselves, firms can benefit from higher productivity

Undesirability:
- Political/Institutional Factors: some trade unions are more powerful, workers have higher wages
- Discrimination against workers by race/gender/age

Government Intervention

Why Governments intervene?
- Government intervene to achieve its economic goals, in resource allocation (efficiency and equity) in the distribution of its income and wealth
- Seek to correct distortions which result in inefficient resource allocation and unequal income distribution
- Governments might fail or worsen rather than remove distortions

Direct Provision of Goods (PUBLIC GOODS)
- Due to zero provision of public goods, the government must provide directly
- Missing market: significant loss to society's welfare (complete market failure)
- Government decides the kind of public goods to provide + quantity
  - Decide which goods provide the greatest social benefits
- Financed through taxes + high opportunity cost associated with utilizing taxes

Externalities

1) **Taxes and Subsidies (Market-based subsidies)**

Taxation of Good with negative externalities
- Specific tax equivalent to the monetary value of MEC at Qs (MPC shifts leftwards)
- Internalize the external cost, produce at socially optimum level, eliminating DWL

Advantages
- Provides revenue for the Government to finance other projects
- Allows market to operate according to market forces (flexibility and financial incentives)

Limitations
- Requires accurate valuation of the external cost which is difficult
  - Overvaluation means output reduced to a level below social optimum
  - Undervaluation means that output lowered insufficiently

- Constraints of PED (demand price inelastic = high tax needed to achieve desired reduction in output = fear of losing political votes)

<u>Indirect Subsidies to Producers</u>

- Negative tax made to the firm, to increase their supply by considering external benefits
- Positive externality is internalized, DWL is eliminated, increased production to socially optimum level
- Shift occurs in the cost curve (MPC shifts outwards)

Direct Subsidies to Consumers

- MPB shifts outwards instead of the MPC (consumers encouraged to increase consumption)
- Subsidy amount equal to MEB at output level Qs
- Increases the purchasing power of households and increase demand and consumption for the good

Advantages

- Most effective way to correct misallocation of resources due to ease of implementation + flexible
- Internalize positive externalities + allow market to operate (does not take into account full social costs and benefits)

Disadvantages

- Valuation of the external benefit
  - Overestimation = overconsumption of good
  - Underestimation = less than optimum consumption
- High government expenditure needed to finance the subsidy
  - High tax rates discourages efforts to work

2) Legislation and Regulation

- Process of controlling production or consumption activities through laws and administrative rules
  - Legislation to prohibit/regulate behaviour that imposes external costs

Quotas

- Limit on the quantity produced, output quota imposed to limit production to Qs
- Elimination of DWL, production at socially optimum level

Advantages

- Simple to implement compared to market based measures
- Can result in greater certainty in achieving target output level than taxes (must comply, which taxes may not always do)

Disadvantages

- Displaces the price mechanism -> output level not responsive to price changes -> Government must predict socially desired level of output -> imperfect information
- Do not create market based incentives for firms to lower size of externality
- Enforcement of laws might be difficult and expensive + penalties must be sufficiently harsh
- Difficult to assess the level of quota, imperfect information can lead to Government failure

Cap and Trade

- Tradable permits are permits to pollute that are issued to firms that can be traded in a market
- Government decides on the amount of permits, price of permits determined by demand and supply
- Produce at lower level = sell unused permits
- Overproduce = buy permits or face penalties (penalize buyer, reward seller)

Mechanism

- Supply of permits distributed to firms is perfectly price inelastic as it is capped by the Government
- Economy grows -> demand increases -> price of permits increases

Advantages

- Socially optimal level can be targeted

- Can achieve desired level more effectively -> Government progressively reduces number of permits based on magnitude of problem
- More cost effective than regulation (incentive to sell excess permits for profit)
    - Firms with high abatement cost will buy additional permits
    - Allows pollution to be reduced at lower cost to society
- Promotion of cleaner and greener technology (incentive to reduce emission and sell excess permits)

Disadvantages

- Trading is administratively costly if there are many polluters
- Will not lead to efficient level of emissions unless efficient level of total emissions is known
- Firms with greater financial power see no incentive in cutting pollution levels
- Underestimate the cost of pollution
- Markets made less competitive or monopolized if smaller firms cannot pay for permits
- Government must set maximum level for each type of pollutant -> needs information on how much of each pollutant is acceptable
- Distribute permits to polluting firms in a fair way
- Fines for non compliance must be high enough

3) Direct government provision

Advantages

- Government has control over the supply of public goods (influence output, quality, affordability)

Disadvantages

- Production may be inefficient -> lack of incentive to minimize cost (no profit motive)
- Difficult to measure size of external benefits and determine level of support (AE present)
- Use of government funds that rely on tax revenues, funds have opportunity cost)

4) Education, campaigns and advertisement

- Inform the public and make them more aware of the spill over effects
- Move to socially desirable levels and reach AE

Disadvantages

- Expensive methods
- Require a long period of time to achieve desired outcomes
- Difficulties and costs involved in collecting and disseminating all the necessary information

Merit and Demerit Goods

Education and Campaigns to manage information failure

- Government can educate through campaigns and advertisements
- Producers forced to provide accurate information
- Real cost/benefit is made known
- IF information failure is the problem, education and campaign tackle the source directly
- BUT expensive + long period of time

Taxes and Subsidies

Direct Provision: make it available at zero or low prices

Market Dominance:

Evils of Monopolies

- Exorbitant profits: exacerbate income disparity
- Exploit consumers: increase price, limit output, fall in CS

- Allocative inefficiency

Taxes
- To reduce excessive monopoly profits by imposing lump sum tax
- Remove the exorbitant supernormal profits to improve equity
- Shifting AC curve upwards to reduce profits

Disadvantages
- Supernormal profits useful in providing the incentive and means for R&D
- Might conflict with other objectives: economic growth and efficiency

Subsidies
- Curtail or regulate monopoly output, increase the level of output
- Required level of subsidy will be that which shifts MC downwards to where it intersects MR at Qs
- HOWEVER, increase supernormal profits and worsen income distribution

Price Regulation
- MC Pricing
    - Social optimum achieved at Qs where last unit sold = MC of producing that unit
    - Monopolist might face losses unless Government subsidies are given OR 2 tier pricing
- AC Pricing
    - Monopolist able to break even
    - Output level at Qe still less than socially optimum output level Qs
- BOTH methods lower price and increase output, increase CS and welfare
- BUT firm might withhold information, overstate costs to charge more

Legislation
- Anti-trust Laws
    - Curb collusive behaviour and concentration of economic power
    - Prohibits anti-competitive practices such as price fixing and predatory pricing
    - Courts can break up monopolies into smaller independent units
- Laws that insist on certain standard of provision
    - Ensure guaranteed quality of product provided in monopoly markets
- Regulations seeking to maintain level of competition

Disadvantage
- Enforcement of such laws are difficult and expensive + penalties must be sufficiently harsh
- Difficult to prove anti-competitive actions
- Laws prevent the benefit of mergers (reaping of IEOS)

Nationalization
- Transfer of ownership to the Government
- Ensures prices are lower and output is greater

Factor Immobility

Occupational Immobility
- Invest in training schemes for the unemployed (education and training to improve skills)
- Subsidize provision of vocational training to raise skill level of unemployed

Geographical Immobility
- Increase awareness and information on job situations
- Reform to housing market improving supply

- Increase supply of affordable property

Disadvantages

- Requires long time period for effects to be seen
- Outcome depends on acceptability of the policies
- Require significant government expenditure

Income Inequality

- Minimum Wage: may lead to efficiency loss and unemployment
- Increase demand for workers by increasing productivity
- Reducing supply of foreign low skilled labour (increasing wage rate)
- Direct market intervention
    - Rent controls to help the poor
    - Price supports on grain
- Taxation of the rich, subsidies for the poor (progressive taxation)
- Government provision of public goods (especially for the poor)

Problems:

- Disincentive for those paying higher taxes (reduce reward to high income earners)
- Administrative costs of redistribution

Government Failure:

- Government Intervention worsens the situation: increase market distortions and reduces economic efficiency and welfare

a) Decisions based on Imperfect Information
b) Bureaucracy and Inefficiency of Government Intervention
    a. Cost of administration and enforcement (more wide reaching intervention = employs too many resources/inefficient usage)
    b. Time lag (time taken to recognize market failure, craft policy measure and implement)
    c. Shifts in Government policy (economic efficiency suffers if intervention changes too frequently)
    d. Law of unintended consequences (side-effects that are not considered)
    e. Disincentive effect (reduce inequality leads to worsening productivity)
    f. Policy myopia (short term fixes that worsen problem in the long run)
    g. Political self interest