### Diagram

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Explanation</th>
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<tr>
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<td>Average costs fall as a firm increases output in the long-run e.g. Buying economies, managerial economies</td>
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<td>Average costs increase as an industry expands in the long-run e.g. Shortage of raw materials, shortage of skilled workers</td>
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#### The Marginal Concept

**Marginal** refers to the costs or benefits attained from one more unit of output or consumption.

To maximise any potential return, it is best to operate at the point where P=MC because at this output all potential profits have been maximised. The firm will not know the P=MC point until they expand and reach this point.
Market Failure and Government Intervention

In a free market, there is not an optimum allocation of resources. There is a divergence between marginal social benefit and marginal social cost.

Marginal Social Benefit v Marginal Social Cost

**MSB:** the additional benefit that society gains from consuming or producing an extra unit of the good.

**MSC:** the additional cost to society of consuming or producing an extra unit of the good.

Market failure may lead to the over/under consumption and therefore production of certain goods.

Market Failure and Inefficiency

**Allocative inefficiency** occurs due to the over or under consumption and production of goods.

There is not an optimum allocation of resources.

Externalities

**Externality:** cost or benefit that is external to a market transaction and is not reflected in the free market price.

**MPC:** The cost to the first party who is either the buyer or seller of the good from the extra unit of production or consumption.

**MEC:** The cost to the third party who is neither the buyer nor the seller of the good of an extra unit of production or consumption. (Aka negative externality)

**MSC:** totals the private and external costs of one additional unit of production/consumption.

\[ MSC = MPC + MEC \]

**MPB:** the benefit to the first party who is either the seller or the buyer of the product from an extra unit of production/consumption.

**MEB:** the benefit to the third party who is neither the buyer nor the seller of the product from an extra unit of production/consumption.

**MSB:** totals the private and external benefits of one additional unit of production/consumption.

\[ MSB = MPB + MEB \]

Externalities in Production and Consumption

**Production externality:** an externality that affects the production side of the market, which may be positive or negative.

**Consumption Externality:** an externality that affects the consumption side of the market, which may be positive or negative.

**Negative Externalities Generated in Production** e.g. Toxic fumes
Tax and Economic Welfare

- Before Tax:
  \[ \text{Total Welfare} = CS + PS \text{ (green + red shading)} = Y - E1 - X \]

- After tax:
  \[ \text{Total Welfare} = CS + PS + \text{Gov Revenue} \text{ (green shading)} = Y - E2 - B - X \]

- Excess Tax Burden: \( E2 - E1 - B \) (red triangle)

Taxation: Pros v Cons

<table>
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<tr>
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<th>Cons</th>
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<tr>
<td>• Increases costs, decrease supply, reduces consumption of demerit goods to socially desirable levels</td>
<td>• Indirect tax is regressive</td>
</tr>
<tr>
<td>• Raises rev for gov- can be ringfenced</td>
<td>• Requires an unreliable method to value the negative externalities that are complex and subjective (Shadow Pricing)</td>
</tr>
<tr>
<td>• Makes first party responsible</td>
<td>• Taxes on external costs (such as landfill) can increase costs for firms and decrease their international competitiveness</td>
</tr>
<tr>
<td>• Raises awareness of higher private costs than realised- acts as a sort of information provision in itself</td>
<td>• Excess burden of tax- an area of lost welfare</td>
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Evaluation of tax: effectiveness depends on...

- PED
- Size of tax
- Shadow pricing reliability

Subsidies

Subsidy is a payment by the government to the producer that lowers producer’s costs and encourages production increase
Increase demand for merit

This can be through:

- Government Intervention: gov can issue rules/guidance for private sector. E.g. warnings on cigarettes
- Private Sector Information Provision: some industries have their own regulators and codes of conduct, e.g. ASA

Limitations of info provision:

- Message may be weak
- Message may not be agreed with and make info undervalued
- Message may be ignored
- Public may resent ‘nanny state’ approach
- Product may be addictive
- Product may be very cheap and attractive

Conclusions for info provision:

Government may have to utilise other methods:

- E.g. info provision on smoking not have desirable effect- ban may be required
- Subsidies for merit may be more effective than info provision

Tradeable Pollution Permits

Gov may try to control pollution by putting a cap on it

A pollution permit must be purchased to carry out an activity that generates pollution- once purchased, can be sold on the open market to highest bidder

Purpose:

- Increase costs to producer- reduce supply and reduce pollution
- Encourages firms to adopt more environmentally friendly methods of production in the long-run
- Encourages firms to reduce pollution to sell permits for a profit

Case Study: EU Emissions Trading Scheme (EU ETS)

- Cover more than 11,000 power stations
- Operates in 28 countries
- Covers 45% of EU emissions

How it Works:

- CAP is set on total emissions (reduced over time)
- EU member allocated permits
- Limit on total number of emissions allowed ensured ‘value’ to permit
- After each year- companies surrender permits to cover their emissions
Government Failure

Government failure occurs when gov intervention imposes a cost greater than the benefit brought about through the gov action. Gov action in itself causes misallocation of resources and net loss of eco welfare.

Evaluating Government Failure:

- Each case has to be examined on own merits- eco theory may predict gov failure but not always happen
- E.g. NHS- in most cases delivers excellent service
- E.g. NMW- not had impact on employment as predicted
Environmental Economics

Functions of the environment:

- Provide resources: required for production - firms need energy e.g. oil, natural gas
- Dispose of waste: absorb waste generated by production and consumption - crucial role
- Leisure: gain private benefits - e.g. satisfaction from visiting a beach/national park

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Unsustainable Development: Occurs when present progress is at the expense of future generations’ progress. E.g. environmental degradation

The Kuznets Curve

Theory:
- Early stages of growth, pollution and degradation
- Beyond a level of income per capita trend reverses
- At high levels, reduction in environmental degradation

Reasoning:
- Up to Turning Point: Industry expands and firms likely to be relying on out of date/inefficient technology that is bad for the environment.
- After turning Point: Businesses more likely to adopt cleaner and more efficient technology

Households experience higher incomes and own more cars/use more energy
Government more likely to focus on promoting growth to help reduce poverty than protecting environment
- After turning Point: Businesses more likely to adopt cleaner and more efficient technology
Government imposes tighter regulation and devote more resources to protecting the environment - change of obj from growth max to save environment
Household damage likely to slow - less buying of cars etc

Evaluation of Kuznets Curve: Whether eco growth reduce enviro degradation/sustainable development...
- Motives of businesses - profit at all costs? Or socially/ethically operate
- Role of gov - is gov proactive in protecting environment
- Gov around the world - e.g. Kyoto agreement - intl pressure
• **Dominant Monopoly**: a firm that has 40% or more of the market, measured as the proportion of sales/sales revenue of a firm to the total market sales/sales revenue. Very high barriers to entry and exit.

• **Natural Monopoly**: a seller that can exploit continuous economies of scale and therefore has huge cost advantages over new firms. Typically, such firms have very high fixed costs as a proportion of total costs, e.g. energy providers, rail services, Severn Trent.

**Assumptions for Monopoly Theory:**

- Single seller - one firm that has total control
- Price maker - only supplier so able to set prices freely
- No substitutes for good - no alternatives in market nor is there potential for new alternatives
- High barriers to entry and exit - entry is near impossible

**Natural Monopoly**

Exploit continuous economies of scale to reward shareholders or invest in R & D.

Could also lower prices and increase consumer surplus \((Qr\text{ and } Pr)\) - potential for a publicly owned monopoly.

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<td>Can achieve low ATC - higher profits that can be used in a number of ways</td>
<td>Competition rare as economies of scale significant barrier to entry</td>
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<tr>
<td>Can invest in R and D (dynamic efficiency) as supernormal profits</td>
<td>Can result in long-term monopoly power and exploitative behaviour</td>
</tr>
<tr>
<td>Not productive or allocatively efficient</td>
<td></td>
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<tr>
<td>May be x-inefficient</td>
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**Monopoly and Demand**

Monopoly is only seller so firm demand curve = market demand curve.
Behaviour of Firms in Perfect Contestability

- Existence of any supernormal profits would trigger entry
- Existing firms want to deter entry: incumbents set prices at level where only normal profits made.

- Pure monopoly price at \( P^* \) (supernormal)
- But, market perfectly contestable
- No supernormal can be made - as all would be eroded away by new entry
- Normal profit at \( AR=AC \)
- Output of \( Q_c \) and price \( Pc \)
- Threat of new entry may be just as powerful an influencer as behaviour of existing firms

Limit Pricing:

Limit pricing is where existing firms set prices as high as possible but not so high as to encourage/enable new firms to enter the market. Possible in contestable markets because incumbents can exploit greater economies of scale lower LRAC, and set a price at a low level but still benefit from supernormal profit.

- Incumbent has LRAC1 - operates at \( P_1 \) and \( Q_1 \) of profit max
- Incumbent wary of potential entrant (with LRAC2) so incumbent prices at \( PL \) - same level as new entrants LRAC so entrant cannot make supernormal
- New entrant will increase supply, lowering price to \( P_2 \) making entry loss-making
Government Regulators:

Department of Trade and Industry: **Duty of regulator is to**

- Protect interests of customers
- Regulate competition
- Reduce social and economic issues within industry

Examples: Ofsted, Ofcom, Ofgen, Ofqual, Ofwat

Regulator Powers: Industry regulators can impose

- Permitted price increases using RPI-X, where X is a reduction in price due to improvements in efficiency
- Licencing/franchising: firms have right to bid to join market, e.g. rail services, national lottery (Camelot)
- Yardstick competition: regulator will use performance of best firm in industry as a standard to aspire to and set expectation for efficiency

Impact of a Regulator:

- Can increase costs for firms (reduce intl competitiveness)
- Firms face more bureaucracy in showing they abide by such rules
- Can affect prices if regulator sets limits if not as efficient as expected

Competition Policy

**Competition policy** consist of government policies to prevent and reduce abuse of monopoly power as well as preventing anti-competitive practices.

**Competition Act 1998:** preventing competition is illegal, prohibits abuse of dominant market position. Also covers situations of tacit collusion

Competition Policy in UK:

- **Office of Fair Trading:** investigates suspected cases of monopoly power abuse and engagement in prohibited practices- collusion, abuse of market power
- **Competition and Markets Authority:** investigated industrial cases e.g. mergers and online gambling
\[ \text{WED} = \frac{\% \text{ change in } QD}{\% \text{ change in wage rate}} \]

**WED Influenced by:**

- Ease of substituting capital for labour
- Labour cost as proportion of total cost
- PED for final product
- Time period under consideration - SR firms find harder to make changes to workforce

**Criticisms of the MRP Theory:**

- Can be difficult to measure MPP in service sector
- Putting price on output difficult for public services

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**The Supply of Labour**

**Labour supply to an industry:** the quantity of workers who are willing and able to work in an industry at given wage rates.

**Labour supply to an economy:** the number of workers who are economically active (in work/seeking work). Same as the labour force.

**Labour Supply in the SR**

In SR, workers have insufficient time to change occupations, changes in wage rate key determinant of supply.

In SR, labour supply influenced by:

1. **The Substitution Effect:**
   - Leisure time more expensive at higher wages in opp cost terms
   - Workers encouraged to work longer hours
   - Substitution effect always positive - wages increase, hours worked increase

2. **The Income Effect:**
   - Low wages, workers seek to improve standard of living and work more hours - +ve relationship
   - As wages continue to rise, workers find can reach target income and work fewer hours (-ve relationship)
   - Leisure time acts as a normal good: more leisure time purchased as wages increase
Illustrating Wage Differentials:

Supply Side Factors:  
Demand Side Factors:

Transfer Earnings and Economic Rent

Transfer earnings: the minimum payment needed to keep a worker in their present job - seen as worker’s opportunity cost

Economic Rent: any payment above workers’ transfer earnings

Quasi rent: temporary increase in ER that arises when wage temporarily increased due to shortage of workers. Long-term supply increase through increased wage, wage and ER fall again.

- Supply curve: no. of workers willing and able to work at given wage rates
- If wage falls, workers transfer out of industry to next best alternative
- Area under supply curve = transfer earnings
- Above supply curve to equilibrium wage = economic rent
Supply conditions:

<table>
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<tr>
<td>All of wage ER</td>
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Impact of Trade Union Activity:

Trade union: organisation that collectively bargains on behalf of members with employer to further their interests.

Reasons for demanding wage rise: shortage of workers, compensating diff, inflation, increased productivity, increased profits, increased pay in similar occupations

Assume PC labour market

- D for lab contracts: Qe to Qd (MC>MRP for these workers)
- S of lab extends: Qe to Qs - incentivised to join

Impact is:

- Wage increase W1 to W2
- Employment fallen: Qe to Qd
- Unemployment occurred from Qs to Qd
- Unemployment includes Qe to Qd redundancies

Conclusion:

- In PC lab market, if TU demands higher wage they do so at expense of unemployment (trade off)
- Example of labour market failure (LMF) as wage pushed above natural equilibrium - allocative inefficiency

Extent of unemployment depends on:

- size of wage increase
- WED and WES: elastic effect greater vice versa
• New AC=
• New MC=
• Monopsonist increases wage to maximum (Wtu1) while not changing employment
• All suppression in the wage rate is eroded by the TU and the wage is put at Wtu1
• This shows a bargaining zone of: This is a zone is sales or negotiations where an agreement can be met that both parties agree on.

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Conclusion:

• TU can be seen as a force for good because they prevent LMF that arises from monopsony
• Final outcome cannot be determined by economic theory as it depends on balance of power E.g. evidence suggests ASLEF has significant power- wage significantly above comparable work

Trade Union membership

2015: 3.8m public sector (+0.5% from 2014), 22.7m private sector (-0.3% 2014)

Reasons for Falling Trade Union Membership:

• Legal rights of workers improved (e.g. Equal Pay Act)- roles of TU adopted by gov
• Power of TU reduced- need ballot to strike or closed shops
• Restructuring UK economy- heavily unionised sectors decline, rise in individual bargaining sectors like finance
• Rise of flexible working- workers see less need to join union if only working part-time
• Image of unions- old-fashioned and militant
• New management between management and workers- e.g. profit sharing schemes, less “us and them”

Powerful Trade Union:

Unite (1.4m), NUT, British Medical Association, GMB (0.6m).

Unite covers a number of sectors such as education, finance, automobiles

Unison biggest public-sector union (>1.3m)

Types of Bargaining and Trade Union Activity

• **Individual Bargaining:** worker directly negotiates with employer to determine pay and conditions. E.g. investment banking, CEOs, footballers, barristers. Often applies when worker has scarce skills and not feel need to TU
• **Collective bargaining:** process of negotiations between employers and a group of workers aimed at reaching agreements on pay and conditions. Employees often represented by TU
• **Productivity bargaining:** process of reaching an agreement through collective bargaining whereby employees of organisation agree to changes that intended to increase productivity
Evaluation: NMW impact depends on...

- Level of min wage imposed
- Elasticity of demand and supply
- Rise in NMW depends on elasticities and size of increase

Wage Controls: Maximum Wage

Maximum wage: legal maximum wage rate workers can be paid per hour. No max wage in UK, but case of it being used by the football industry in 1960.

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<td>People earn too much and ‘don’t deserve it’- reduced gap between rich and poor</td>
<td>Why not increase income tax?</td>
</tr>
<tr>
<td>Helps reduce ULC and improve intl competitiveness</td>
<td>Disincentives to work arise- may create ‘brain drain’ as workers relocate. May be shortage of skilled workers</td>
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<tr>
<td>High economic rent may not result in expected exodus of workers</td>
<td>If firms willing to pay high wages, workers must have the MRP- deserve it</td>
</tr>
<tr>
<td>Highly skilled labour becomes more accessible for smaller firms</td>
<td>Apart from specific industries, little benefit of max wage- mainly for a mild feeling of social justice</td>
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<tr>
<td>Lower costs may be distributed to lower-paid workers</td>
<td>Lower costs may be redistributed to shareholders or just turn into bonuses</td>
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Extent of Shortage depends on:
- How far below equilibrium wage is imposed
- Elasticities of demand and supply

Maximum wage: Pros v Cons

- Supply contracts from Qe to Qs- reduced incentives for workers, replacement ratio increases
- Demand expands from Qe to Qd- cheaper to employ and can afford to employ more (MRP>MC)
- Wage cannot exceed Wmax
- Shortage of workers from Qd to Qs

Conclusion:
- Any wage control interrupts role of wages to allocate scarce resources- prevents efficient markets
- Increased D for product=Increased Price of output= Increased D for lab- but max wage stops mechanism from working and wages do not increase so supply does not increase to match increase in demand