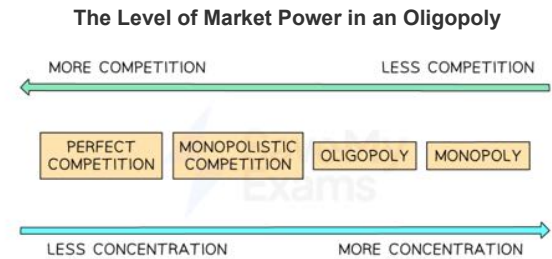


Topic: Oligopoly

- An **oligopoly** is a market structure in which a **few large** firms dominate the industry with each firm having significant **market power** and the **concentration ratio** of the top 5 firms is usually high
 - **Irish Examples:** Banking industry (AIB, BOI), supermarket industry (Tesco, Aldi, Supervalu, Lidl...), petrol stations, sports stores, insurance companies, airlines, etc



Characteristics of an Oligopoly Market

Characteristic	Explanation
Few firms dominate the industry	<ul style="list-style-type: none"> • Because of this each seller can influence the price of the commodity and/or output sold
Interdependence between firms	<ul style="list-style-type: none"> • Firms in oligopoly are mutually interdependent • They will each take into account the likely actions of their competitors; hence prices tend to rigid
Product differentiation	<ul style="list-style-type: none"> • The commodities which firms sell are close substitutes (even homogenous, eg. oil) • Firms will engage in advertising to persuade consumers to buy their product rather than a competitor's products
Strong barriers to entry	<ul style="list-style-type: none"> • Existing firms will wish to maintain their share of the market and have high barriers to entry <ul style="list-style-type: none"> ◦ Eg., patents, high cost to entry
Collusion may occur	<ul style="list-style-type: none"> • Firms in industry may try to control price or output
Non-Price Competition	<ul style="list-style-type: none"> • Oligopolies tend to compete on terms other than price. e.g., advertising, quality of product, innovation

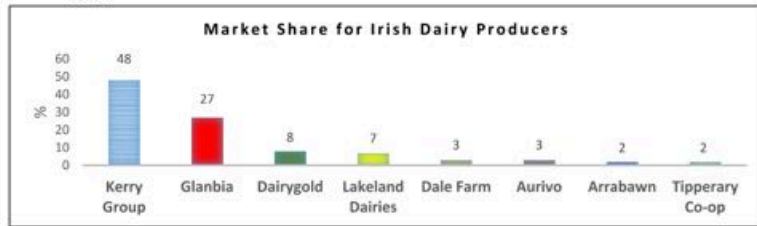
Herfindahl Hirschman Index (HHI)

- HHI is calculated by adding up the **squared market share**, which is expressed as a percentage, of each firm competing in a given market. Result determine concentration
 - **Competitive (0 - 1,000 HHI)** → Many firms, low market concentration, strong competition.
 - **Moderately concentrated (1,000 - 2,500 HHI)** → Some dominant firms, but competition still exists.
 - **Highly concentrated (>2,500 HHI)** → A few large firms dominate, reducing competition.



Worked Example:

- (b) The bar chart below shows the percentage (%) market share for Irish Dairy Producers in 2021.



Adapted from Top1000.ie

- (i) Based upon the figures in the bar chart above, calculate the Herfindahl Hirschman Index for Irish Dairy Producers. Show your workings.

Workings:

Answer:

- (ii) Would you consider this market to be competitive, moderately concentrated, or highly concentrated? Explain your answer.

Markscheme

Based upon the figures in the bar chart above, calculate the Herfindahl Hirschman Index for Irish Dairy Producers. Show your workings.

$$48^2 + 27^2 + 8^2 + 7^2 + 3^2 + 3^2 + 2^2 + 2^2 = 3172$$

Would you consider this market to be competitive, moderately concentrated, or highly concentrated? Explain your answer.

- Highly concentrated.
- The market is dominated by two large firms.
- The HHI calculation of 3172 is greater than 2500.

Exam Question

Question 2

The diagram below shows the market concentration for supermarkets.



Adapted from Kantar

(a) Using the information provided in the diagram above, calculate the market concentration of the supermarket industry, using the Herfindahl-Hirschman Index (HHI).

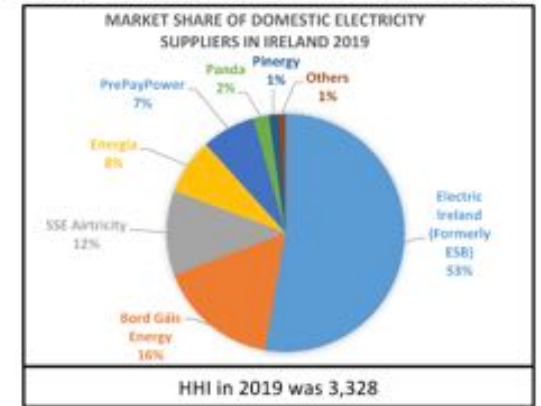
Workings:

Answer:

(b) Identify the type of market structure from the data provided above.

Exam Question: 2022 Q12

(a) The pie charts below show the market share of domestic electricity suppliers in Ireland in 2005 and in 2019. Below the pie charts are the relevant Herfindahl-Hirschman Index figures.

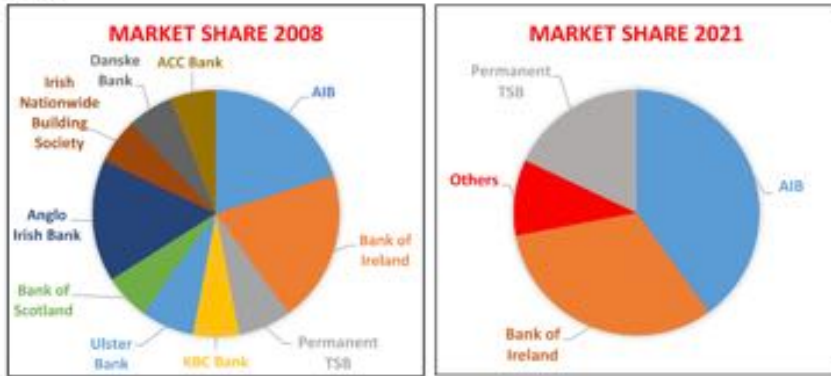


Adapted from Statista.com

(i) Comment on what the Herfindahl-Hirschman Index (HHI) results outlined above indicate about the market concentration in this industry over this time period (2005 to 2019).

Exam Question: Deferred paper 2022

The pie charts below indicate the mortgage market share of the Irish banking sector in 2008 and 2021.



Approximate data - adapted from BFI

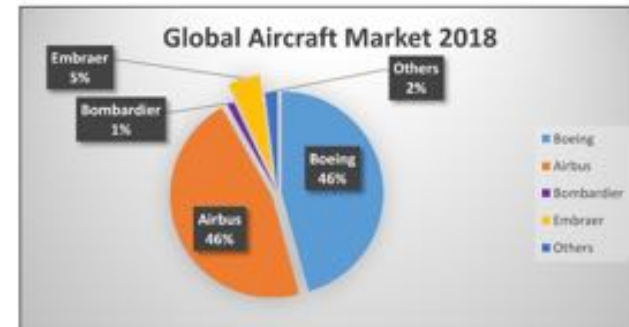
- (a) (i) Using the data in the pie charts above, comment on the change in the mortgage market share concentration between 2008 and 2021.

Answer:

- (ii) Outline **two** possible reasons why a low market concentration may present difficulties for consumers.

Exam Paper 2021 Q11

The pie chart below shows the market share of the Global Aircraft Market in 2018.



Adapted from Industry and Research.com

- (a) (i) Using the data provided above, calculate the Herfindahl Hirschman Index (HHI) for the Global Aircraft Market in 2018. Show your workings.

Workings:

Answer:

- (ii) Would you consider this market to be **competitive**, **moderately concentrated**, or **highly concentrated**? Explain your answer.

Answer:

Explanation:

Collusion

- Collusive behaviour in oligopolies occurs when firms cooperate to **fix prices** and **restrict output**
 - They cease to compete as vigorously as they can
 - The incentive to collude in these markets is high
 - Newspaper articles: [Rangers merch collusion](#) and video [chocolate price fixing](#)

Collusion Examples

1. The French Yoghurt Cartel (2005)

- Several major French yoghurt producers, including Danone, were found to have colluded to fix prices. They coordinated on prices and market conditions, leading to artificially high prices for yoghurt. The French competition authority fined the companies involved, making this a significant case in terms of antitrust enforcement in the food industry.

2. The Air Cargo Cartel (2006-2008)

- International airlines such as Lufthansa, British Airways, and Air France colluded to fix cargo shipping prices by coordinating surcharges for air cargo services. The European Commission fined the airlines a combined total of around €800 million, making it one of the most significant cartels in the transportation industry.

3. School Bus Transport Cartel (Ireland)

- The Competition and Consumer Protection Commission (CCPC) investigation led to charges against fourteen individuals involved in a school bus transport cartel. The case underscored the CCPC's commitment to tackling anti-competitive practices in essential public services

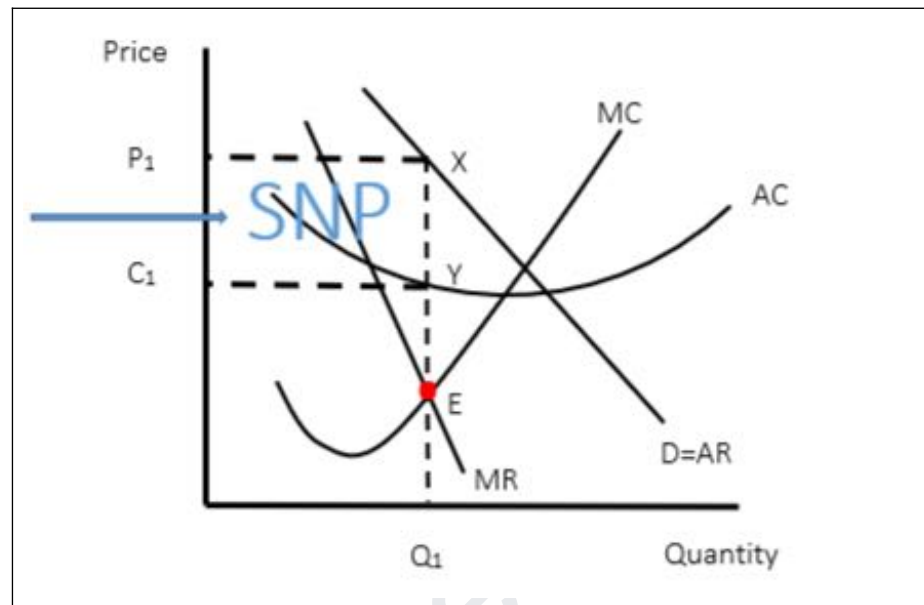
4. Home Heating Oil Cartel (2012)

- Over an 11-year investigation concluding in 2012, the Director of Public Prosecutions secured 18 convictions against 10 companies and 8 individuals involved in a price-fixing cartel in the home heating oil sector. This case marked the first jury conviction for a price-fixing cartel in Ireland.

5. The Chocolate Cartel (2013)

- Major chocolate producers, including Nestlé, Mars, and Hershey, were investigated for allegedly colluding to fix chocolate prices in several countries. While formal charges were not filed, the companies faced scrutiny for their pricing practices, especially given the ongoing price hikes in the chocolate market.

Diagram: A Collusive Oligopoly (same as monopoly diagram)



When firms join together in collusion, they agree on a price and act like a monopoly in the industry by removing competition

Diagram analysis

- **Five firms** with a concentration ratio of **80%** meet secretly and agree to **fix prices** at a particular level
- The five firms present in the market as a **single firm**
- The firm produces at the **profit maximisation** level of output, where **MC = MR (Q1)**
 - At this level, **AR (P1) > AC (C1)**
 - The collusive oligopoly is making higher levels of **abnormal profit / SNP**

Explicit V. Implicit Collusion

- **Explicit collusion** occurs when separate companies **jointly decide** a specific course of action by forming a cartel e.g. **OPEC** (Organisation Of Petroleum Exporting Countries)
 - A **fixed price** which applies to all firms in the cartel
 - A **quota system** which limits production to certain agreed amounts, keeping prices higher than they should be

- **Implicit collusion** occurs when there is **no formal agreement** between firms but each firm recognizes that joint profits will be higher if firms behave as if they were a monopoly.
 - A single firm will not reduce the prices of its output because it knows that such a move could result in a **price war** with less profits for all firms involved in the industry, firms therefore will compete by means of **non-price competition**.

Types of collusion

Type of collusion	Explanation
Pricing Policy	<ul style="list-style-type: none"> • One firm, with the tacit agreement of others, could reduce prices forcing potential entrants out of the industry
Production/output policy	<ul style="list-style-type: none"> • Firms could join together to limit output to certain agreed amounts
Sales Territories	<ul style="list-style-type: none"> • Firms could divide up the markets between them and agree not to compete in each other's market segments

- **Non collusive** behaviour in oligopolies occurs when firms **actively compete** to maintain/increase market share
 - **Price wars** may break out occasionally between competitors
 - Little is to be gained as competitors can quickly follow each others actions, resulting with very little change in market share but a significant loss in profits, due to the lower prices generated by the price war

Price V. Non-Price Competition

Price Competition	Non-price competition
<p><i>Prices compete based on price</i></p> <p>1. Lower prices / value for money Consumers will benefit from the availability of commodities at lower prices. Consumers will be able to get better value for their limited income.</p> <p>2. Higher disposable income With lower prices consumers will now have a higher disposable income, resulting in a better standard of living.</p> <p>3. More choice As consumers have a greater disposable income they can now choose how to spend this additional income.</p> <p>4. Preferable to non-price competition Consumers pay for non-price competitive measures, e.g., advertising. Offers may be unwanted / of little value; tokens may go unused, etc.</p>	<p><i>Firms increase sales using methods other than price, eg. loyalty schemes, after-sales service, 2-for-1 offers, innovative products, quality, brand loyalty, advertising, etc</i></p> <p>1. Consumer loyalty is rewarded Consumers can, by shopping in selected stores, receive loyalty points, which can be used as they wish.</p> <p>2. Stability in prices Non-price competition means prices will not be constantly changing, and so consumers do not have to worry that they are losing out on bargains / may be better able to budget.</p> <p>3. Better quality commodities / services Firms may improve the quality of their commodities and offer better service and/or after-sales service to consumers.</p> <p>4. Allows consumers to save and / or avail of 'free' gifts With regular shopping consumers can 'save' their loyalty points for those time periods when they incur additional expenses.</p>

Price Rigidity - Kinked Demand Curve

Introduction to game theory: Is a method of analysing the way that the 'players' in an interdependent relationship (such as oligopoly) make strategic decisions. [video](#)

Diagram: Kinked demand curve [video4](#)

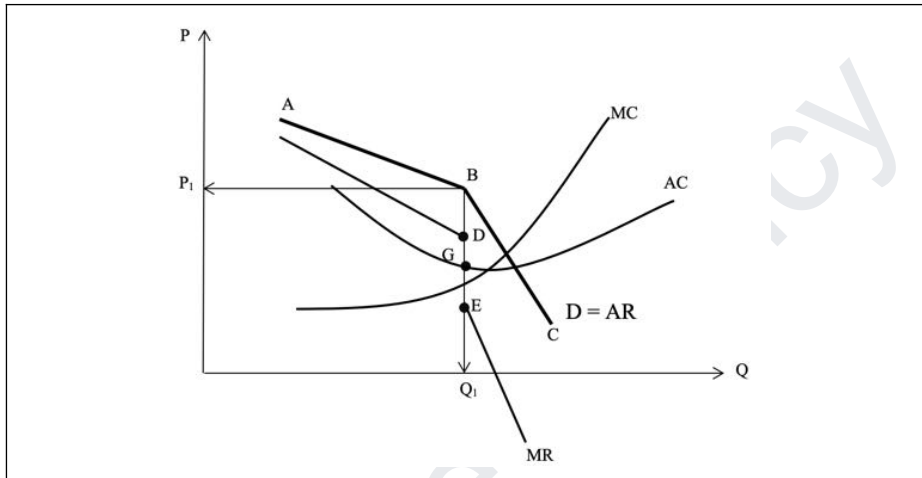


Diagram analysis

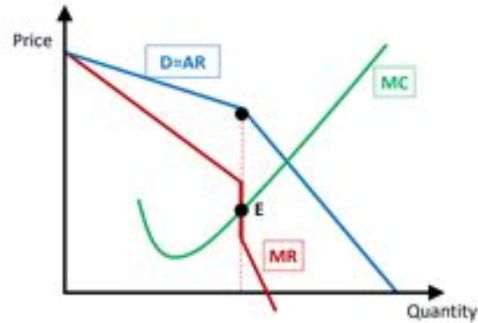
E – Equilibrium	<ul style="list-style-type: none"> The firm produces at the equilibrium profit-maximising level of output, where (a) $MC = MR$ & (b) MC is rising.
P – Price and output	<ul style="list-style-type: none"> The firm will produce where Quantity produced is Q_1 and Price is P_1
C – Costs	<ul style="list-style-type: none"> The firm's cost of production is shown at point G. Should costs rise between points E and D then market price tends to remain constant at P_1.
S – Supernormal profits / losses	<ul style="list-style-type: none"> This firm is earning SNPs because AR exceeds AC or barriers to entry exist. ($AR > AC$)
S – Scarce resources	<ul style="list-style-type: none"> The firm is not producing at the minimum point of the AC curve and is therefore productively inefficient.

Price Rigidity

- 'Kinked' demand curve explains the rationale for **'price rigidity'**.
 - The **Elastic section** of the demand Curve: consumers are very responsive to a change in price
 - The firm above would fear increasing its price above P_1 as other firms will leave their prices unchanged, so this firm will lose many customers / fall in total revenue.
 - The **inelastic section of the demand curve**: consumers are not very responsive to a change in price
 - The firm would fear lowering its price below P_1 as it believes others will match this price decrease, so this firm will gain few additional customers / the proportionate increase in demand is less than the reduction in price and total revenue falls.
- This results in the kinked D/C and no incentive to change price from P_1 .

Exam Q: 2024 OL

(b) The diagram below represents the long-run equilibrium of a firm in **Oligopoly**.



(i) Write out in full what each of the following three labels represent.

D=AR	
MC	
MR	

(ii) Equilibrium occurs at **point E** on the diagram above.
Clearly show and label on the above diagram:

- The output the firm will produce in equilibrium (use label Q_1)
- The price the firm will charge for its output (use label P_1).

The electricity market is an example of an oligopoly market in Ireland.

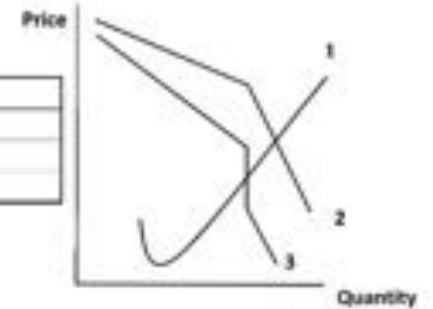
(iii) Give one other example of an oligopoly market in Ireland **and** explain a reason for your choice.

Example:
Reason:

Exam Question 2020 Q9

(i) Write in full the label (not abbreviation) for each of the lines numbered 1 to 3. Use the answer box provided.

Number	Label
1	
2	
3	

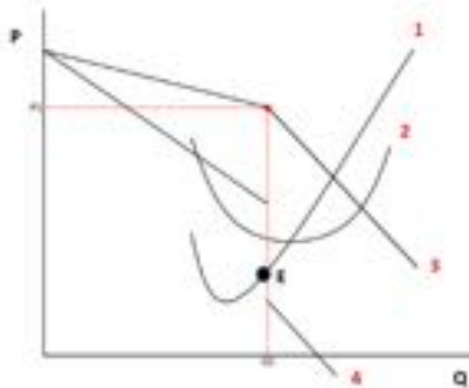


(ii) Show on the diagram the **equilibrium point (E)**; the **price charged (P_1)** and the **quantity produced (Q_1)** by this firm.

(iii) With reference to the diagram explain the term **price rigidity**.

Exam Question: 2021 Q11

(b) The diagram below represents the long-run equilibrium of a firm in Oligopoly at point E producing at Q_1 and selling at P_1 .



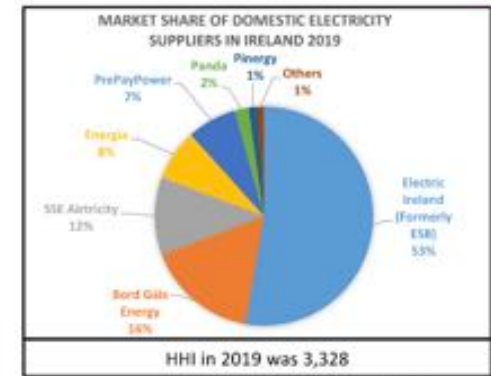
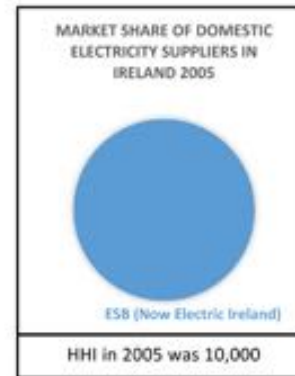
(i) Write in full the label (not abbreviations) for each of the lines numbered 1 to 4.

Number	Label
1.	
2.	
3.	
4.	

(ii) Would you advise the above firm to engage in price competition? Give two reasons for your answer.

1.	
2.	

Exam Question 2022

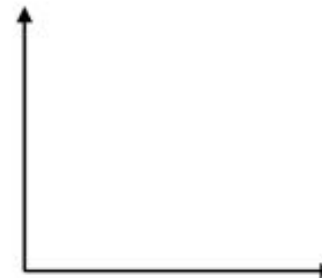


Adapted from Statista.com

(b) (i) The market structures in the pie charts in (i) above in 2005 are best described as a **State Monopoly** and in 2019 it is best described as an **Oligopoly**. Outline one advantage of both types of market structure.

Monopoly:	
Oligopoly:	

(ii) Explain, with the use of a fully labelled diagram, the long-run equilibrium position of a monopoly firm.



Exam Question 2022 Q12

Explanation:

(iii) Explain two changes in market conditions (characteristics) which allows a market to move from a **Monopoly** to an **Oligopoly**.

1.
2.

(b) (i) The market structures in the pie charts in (i) above in 2005 are best described as a **State Monopoly** and in 2019 it is best described as an **Oligopoly**.
Outline one advantage of both types of market structure.

Monopoly:
Oligopoly:

(iii) Explain two changes in market conditions (characteristics) which allows a market to move from a **Monopoly** to an **Oligopoly**.

1.
2.