

Game theory and oligopoly



Game theory
 Oligopoly
 Collusion
 Duopoly
 Dominant strategy

Zero-sum game
 Maximin strategy
 Prisoners' dilemma
 Credible threat
 Nash equilibrium

Payoff matrix
 Competitive oligopoly
 Non-price competition
 Pure strategy
 Mixed strategy

A bingo card with a grey header containing the word 'BINGO' in large, bold, black letters. Below the header is a 3x3 grid of empty white squares. At the bottom of the card, there are five circular bingo balls with the numbers 4, 11, 16, 33, and 51. The ball with the number 16 is shaded black, while the others are white with black outlines.



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A bingo card identical to the one above, featuring a grey header with 'BINGO', a 3x3 grid, and five numbered balls (4, 11, 16, 33, 51) at the bottom, with the ball containing '16' shaded black.



Teacher definitions

Collusion

A formal or informal agreement between firms to limit competition, by fixing prices or quantities

Competitive oligopoly

An oligopolistic market structure where the firms choose not to collude

Credible threat

An action that players in a game believe will happen if they continue to follow a strategy that goes against the interests of the dominant players

Dominant strategy

Where a single strategy always gives the best outcome for a firm, no matter what the other firms choose to do

Duopoly

A special type of oligopoly consisting of just two firms

Game theory

A tool for analysing the strategies and behaviour of firms in a competitive environment

Maximin strategy

A low-risk strategy where a firm aims to maximise the minimum reward or profit it receives

Mixed strategy

A situation where a firm changes its strategy each time it competes in a game

Nash equilibrium

In game theory, an equilibrium where a player cannot achieve a better outcome, given the choice made by the other player

Non-price competition

Competition between firms in terms of quality, product design etc.

Oligopoly

A market structure consisting of a small number of firms with significant market share

Payoff matrix

A chart showing all the possible outcomes for each player in a game, given all the possible choices made by other players

Prisoners' dilemma

A game where each player acts independently of the other, which results in a worse outcome than if they had worked together

Pure strategy

A situation where a firm always adopts the same strategy, no matter what its competitors choose to do

Zero-sum game

In game theory, an outcome where one player's gains are matched by an equal loss for the other player

Types and sizes of businesses



Sole proprietor
Partnership
Private limited company
Public limited company
Five-firm output concentration ratio

Five-firm employment concentration ratio
Organic growth
Amicable takeover
Hostile takeover
Horizontal merger

Vertical merger
Conglomerate merger
Lateral merger
Forward vertical integration
Backward vertical integration

B I N G O

4 11 16 33 51



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4 11 16 33 51



Teacher definitions

Amicable takeover

When one firm buys another and both firms are happy with the transaction

Backward vertical integration

When one firm takes over another that is further from the final market

Conglomerate merger

Integration between two firms in different, unrelated industries

Five-firm employment concentration ratio

The total share of the market by the five largest employers in an industry

Five-firm output concentration ratio

The total share of the market by the five largest producers in an industry

Forward vertical integration

When one firm takes over another that is closer to the final market

Horizontal merger

Integration between two firms that are at the same stage in the production process in the same industry

Hostile takeover

When one firm buys another and the acquired firm opposes the action

Lateral merger

Integration between two firms in different, related industries

Organic growth

Also known as internal growth, where a firm increases its output through increased investment etc.

Partnership

A business where a group of partners shares the profits

Private limited company

An organisation owned by shareholders, whose shares are not quoted on the stock exchange and whose responsibility for debts is limited to the value of their shares

Public limited company

An organisation owned by shareholders, whose shares are quoted on the stock exchange and where decision-making is allocated to a board of directors

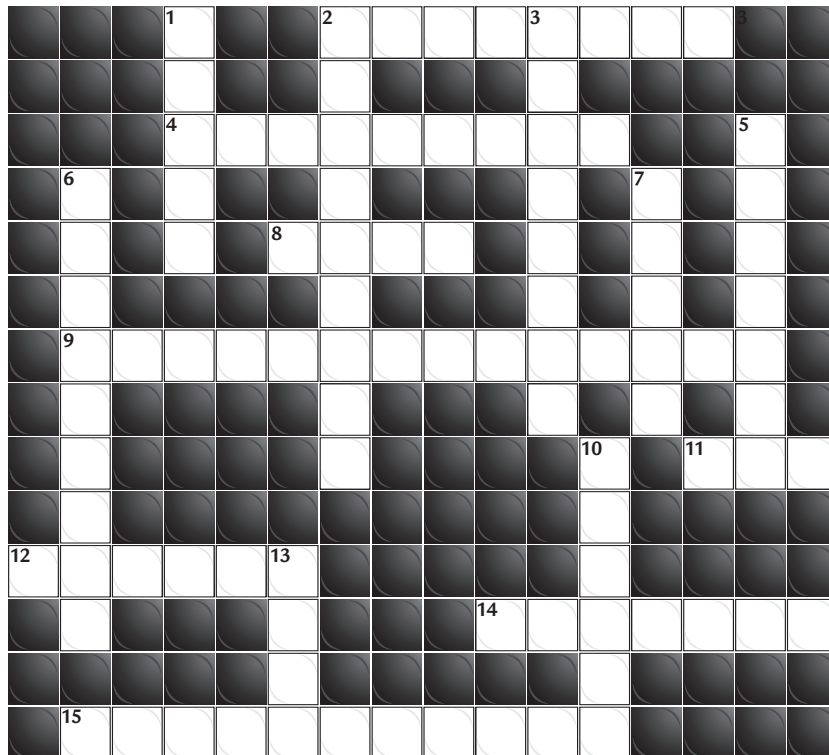
Sole proprietor

The simplest form of business, where a single owner runs the firm and is responsible for its debts

Vertical merger

Integration between two firms that are at different stages in the production process in the same industry

Pricing strategies

**Across**

- 2** An approach to pricing where a firm charges a price equal to average costs plus a percentage mark-up for profit (4-4)
- 4** Firms using price discrimination charge a higher price to those consumers with price _____ demand (9)
- 8** Another phrase for second-degree price discrimination is _____ - buying (4)
- 9** Price _____ occurs when different consumers are charged different prices (14)
- 11** In third-degree price discrimination, groups of consumers with different _____ are charged different prices (1, 1, 1)
- 12** Firms set prices that maximise this when they set $MR = MC$ (6)
- 14** Firms using non-price competition may compete in terms of this (7)
- 15** In this market structure, firms set prices similar to those under perfect competition (11)

Down

- 1** Firms operating under perfect competition are _____ - takers (5)
- 2** Firms operating under oligopoly often engage in _____ to set a price in order to maximise profit (9)
- 3** A characteristic of oligopoly (5, 3)
- 5** This is maximised when $MR = 0$ (7)
- 6** An anti-competitive pricing strategy where a firm makes a loss in the short run to force out competition (9)
- 7** A pricing policy where a firm sets its price as high as it can without attracting new firms into the industry (5)
- 10** Firms using price discrimination must ensure that this cannot happen (6)
- 13** One of the barriers that prevents arbitrage from taking place, thus allowing price discrimination to occur (4)

Regulation and competition policy

2

<p>A</p> <p>Short-term debt reduction</p>	<p>Q</p> <p>An agreement between companies to set prices in order to maximise joint profits</p>
<p>Q</p> <p>A method of regulation, whereby a company is granted a licence to operate a certain monopoly for a set period of time</p>	<p>A</p> <p>Licensing</p>
<p>A</p> <p>Price-fixing</p>	<p>Q</p> <p>The government regulator responsible for the communications industry (including television, radio and telephone)</p>
<p>Q</p> <p>An anti-competitive practice whereby a company insists that all its products, and none belonging to its competitors, are stocked by a retailer</p>	<p>A</p> <p>Full-line forcing</p>
<p>A</p> <p>OFCOM</p>	<p>Q</p> <p>A method used to reduce spending on nationalised industries, which often applies to catering and cleaning</p>
<p>Q</p> <p>This is considered to be one of the benefits of privatisation</p>	<p>A</p> <p>Widening share ownership</p>

Regulation and competition policy

<p>A</p> <p>Contracting out</p>	<p>Q</p> <p>The potential for competition in an industry, determined by the level of barriers to entry and exit</p>
<p>Q</p> <p>The definition of a market for investigations into abuse of market power, such that no substitutes are excluded</p>	<p>A</p> <p>Relevant market</p>
<p>A</p> <p>Contestability</p>	<p>Q</p> <p>Falling long-run average costs caused by growth in the size of a firm</p>
<p>Q</p> <p>An economist who advocated the benefits resulting from a monopoly market structure, e.g. more funds available for research and development</p>	<p>A</p> <p>Schumpeter</p>
<p>A</p> <p>Economies of scale</p>	<p>Q</p> <p>An anti-competitive pricing strategy where a firm sets its prices low so that it makes a loss, in order to drive out competition</p>
<p>Q</p> <p>A policy designed to promote increased competition and activity by a business that is in the public interest</p>	<p>A</p> <p>Competition policy</p>

Regulation and competition policy

<p>A</p> <p>Predatory pricing</p>	<p>Q</p> <p>These are investigated by the Competition Commission to ensure that they are not against the public interest</p>
<p>A non-ministerial government department with the remit of making markets work well for consumers</p>	<p>A</p> <p>Office of Fair Trading</p>
<p>A</p> <p>Mergers and acquisitions</p>	<p>Q</p> <p>A market structure whereby one firm has over 25% of the market share and is considered to exploit consumers by setting high prices</p>
<p>An Act passed in 1998 to prevent abuse of market power, bringing the UK into line with EU competition policy</p>	<p>A</p> <p>Competition Act</p>
<p>A</p> <p>Monopoly</p>	<p>Q</p> <p>The selling of nationalised industries to private shareholders</p>
<p>One of the major criticisms of Margaret Thatcher's programme of privatisation</p>	<p>A</p> <p>'Selling the family silver'</p>

Regulation and competition policy

<p>A</p> <p>Privatisation</p>	<p>Q</p> <p>An independent public body that investigates markets and mergers in depth</p>
<p>Q</p> <p>Where the regulator of an industry starts to represent the interests of the industry rather than consumers</p>	<p>A</p> <p>Regulatory capture</p>
<p>A</p> <p>Competition Commission</p>	<p>Q</p> <p>A method of regulation where a firm can only increase prices by less than the rate of inflation</p>
<p>Q</p> <p>A method of regulation where a firm's profit is limited</p>	<p>A</p> <p>Rate of return</p>
<p>A</p> <p>RPI-X</p>	<p>Q</p> <p>One of the outcomes of a programme of privatisation</p>

Regulation and competition policy

Teacher answers

A Short-term debt reduction	Q A method of regulation, whereby a company is granted a licence to operate a certain monopoly for a set period of time
A Licensing	Q An agreement between companies to set prices in order to maximise joint profits
A Price-fixing	Q An anti-competitive practice whereby a company insists that all its products, and none belonging to its competitors, are stocked by a retailer
A Full-line forcing	Q The government regulator responsible for the communications industry (including television, radio and telephone)
A OFCOM	Q This is considered to be one of the benefits of privatisation
A Widening share ownership	Q A method used to reduce spending on nationalised industries, which often applies to catering and cleaning
A Contracting out	Q The definition of a market for investigations into abuse of market power, such that no substitutes are excluded
A Relevant market	Q The potential for competition in an industry, determined by the level of barriers to entry and exit
A Contestability	Q An economist who advocated the benefits resulting from a monopoly market structure, e.g. more funds available for research and development
A Schumpeter	Q Falling long-run average costs caused by growth in the size of a firm
A Economies of scale	Q A policy designed to promote increased competition and activity by a business that is in the public interest
A Competition policy	Q An anti-competitive pricing strategy where a firm sets its prices low so that it makes a loss, in order to drive out competition
A Predatory pricing	Q A non-ministerial government department with the remit of making markets work well for consumers
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A Competition Act	Q A market structure whereby one firm has over 25% of the market share and is considered to exploit consumers by setting high prices
A Monopoly	Q One of the major criticisms of Margaret Thatcher's programme of privatisation
A 'Selling the family silver'	Q The selling of nationalised industries to private shareholders
A Privatisation	Q Where the regulator of an industry starts to represent the interests of the industry rather than consumers
A Regulatory capture	Q An independent public body that investigates markets and mergers in depth
A Competition Commission	Q A method of regulation where a firm's profit is limited
A Rate of return	Q A method of regulation where a firm can only increase prices by less than the rate of inflation
A RPI-X	Q One of the outcomes of a programme of privatisation

Market structures

Market structure	Example	Characteristics	Graph
Monopoly	Microsoft	Abnormal profits in long run Price-maker Barriers to entry	<p>The graph shows a downward-sloping Demand curve and a steeper downward-sloping Marginal Revenue (MR) curve. An upward-sloping Marginal Cost (MC) curve intersects the MR curve at quantity Q. The corresponding price on the Demand curve is P. A shaded rectangle between P and the MC curve up to Q represents profit. Average Cost (AC) is also shown.</p>
Oligopoly	Supermarkets	Interdependence Barriers to entry Collusion and price-wars	<p>The graph shows a kinked Demand curve on a coordinate system with Price on the vertical axis and Quantity on the horizontal axis.</p>
Monopolistic/imperfect competition	Car manufacturers	Differentiated products Many firms Normal profit in short run	<p>The graph shows a downward-sloping Demand curve and a steeper downward-sloping Marginal Revenue (MR) curve. An upward-sloping Marginal Cost (MC) curve intersects the MR curve at quantity Q. The corresponding price on the Demand curve is P. Average Cost (AC) is also shown.</p>

Market structures

Market structure	Example	Characteristics	Graph
Perfect competition	Foreign currency	Price-takers Homogeneous goods No barriers to entry	
Contestable market	Budget airlines	Potential for competition No barriers to entry Normal profits in short run	
Natural monopoly	Post Office	High fixed/sunk costs One firm Often run or regulated by government	

Business objectives

opportunity	total revenue	dividends	more
loss	zero	quantity	entrepreneurs
profit	investment	ethical	stakeholders
jobseekers	abnormal	marginal revenue	accounting
objective	responsibility	above	average revenue
conflict	wages	market	reduced
capital	better	minimum	land

In economics, we usually assume that businesses want to maximise
 We calculate this by subtracting total costs from We also know that
 profits are maximised when is equal to marginal costs. Profit is the
 reward expected by, just as are the reward for labour
 and rent is the reward for

Businesses use their profits for a number of purposes. In many cases, they are used
 for (which allows businesses to replace, increase or improve their
 stock, one of the factors of production). Profit is also given out to
 shareholders in the form of

In economics, as opposed to, we must take care to distinguish between
 normal profit and (or supernormal) profit. Normal profit is the
 profit that will keep a business in its present industry. It is equal to the
 cost of being in the next best industry. For example, if an entrepreneur
 earns £20,000 profit per year in a hairdressing business, and his/her alternative
 position as a car-park attendant would also earn the entrepreneur £20,000 per year,
 then he/she is said to be earning normal profit. Abnormal profit is equal to the profit
 earned normal profit.

However, many economists believe that businesses do not always seek to maximise
 profit. An alternative is that they may seek to maximise total revenue.

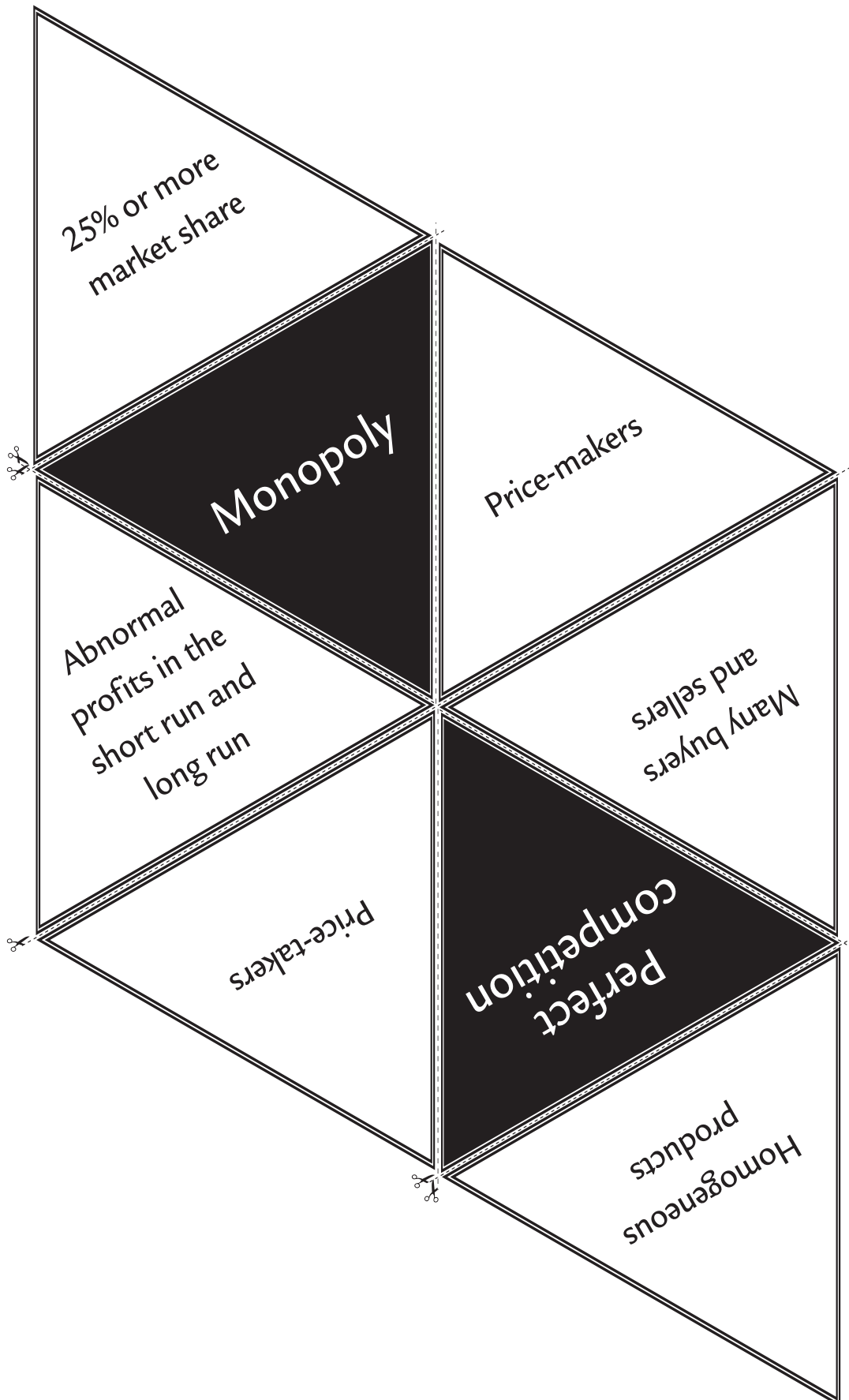
Business objectives

In this case, businesses tend to produce than they would if they were maximising profit. They will produce at a point where marginal revenue is On the other hand, businesses may wish to maximise share. One way of doing this is for a firm to maximise the of goods that it sells, without making a When this is the firm's objective, it produces an amount such that is equal to average cost.

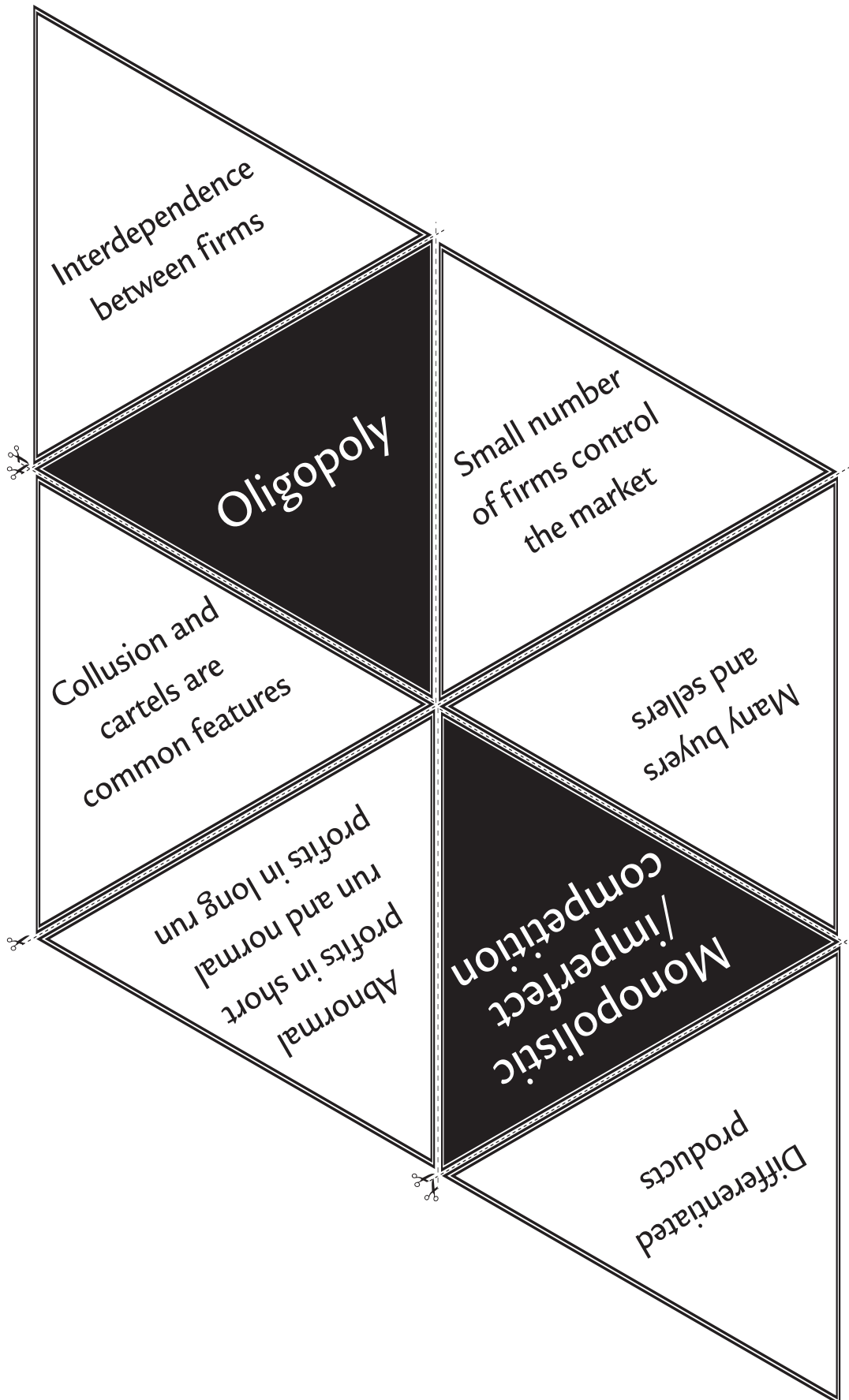
Businesses are increasingly concerned with issues, such as reducing carbon emissions and promoting social (perhaps by sponsoring schools in developing countries or encouraging environmentally friendly production methods). However, these objectives are likely to be in addition to those already described.

One problem that businesses face is that different have different objectives. Workers, for example, want higher wages and working conditions. People living locally may want pollution may want a variety of working opportunities to be provided. Managers and shareholders are likely to seek high profits or market share. Many of these objectives will, meaning that we should not always assume that businesses have only one objective.

Market structures



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Market structures

