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Understanding Monopoly: How are monopolies created?

Previously

- Profits and losses act as signals in a perfectly competitive market
- For perfect competition to exist, two factors must be in place:
  - A competitive market
  - Easy entry and exit from the market
- A price taker has no control over the price it pays, or receives, in the market
- A firm that maximizes profits will expand output (Q) until MR = MC

Big Questions

1. How are monopolies created?
2. How much do monopolies charge, and how much do they produce?
3. What are the problems with, and solutions for, monopoly?

Defining Monopoly

- Monopoly
  - Single seller who produces a good
- How do monopolies persist?
  - Recall what happens in competitive markets with free entry…
- Barriers to entry
  - Restrictions that make it difficult for new firms to enter a market
  - Allows many monopolists to enjoy long run economic profit

Natural Barriers to Entry

- Control of resources
  - If a monopoly controls all of a resource (input) necessary for production, competitors cannot enter
  - ALCOA, De Beers
- Inability of potential competitors to raise enough capital
  - Monopolies are often very established after years of growing. Can you raise $10 million of capital to compete?

Natural Barriers to Entry

- Economies of scale
  - "Bigger is better" (more cost-efficient)
  - This is due to the ATC being downward-sloping over a large range of output
  - Lower costs → lower prices
  - Car production, electricity production, mail delivery
- Natural monopoly
  - A monopoly exists because a single large firm has lower costs than any potential competitor
  - In addition, breaking up the firm into multiple competitors may increase costs as well

Government Created Barriers

- Licenses, qualifications
  - License to use certain radio or TV frequency (prevent the negative externality of interference)
  - Must be qualified to practice medicine or law
- Patents and copyright law
  - Patent
    - Temporarily grants monopoly rights to a product
    - An incentive to innovate
  - However, copyrights (and higher resulting prices) sometimes create unintended consequences
    - File sharing, movie pirating

The Monopolist's Pricing and Output Decisions

- Perfectly competitive firms
  - Price takers, cannot affect the price
  - Each firm faces a *horizonta*l demand
- Monopoly firm
  - Price maker, sets the price by choosing output level
  - Faces the *downward-sloping* demand curve for the entire industry

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Understanding Monopoly: How Much Do Monopolies Charge?

The Monopolist's Pricing and Output Decisions

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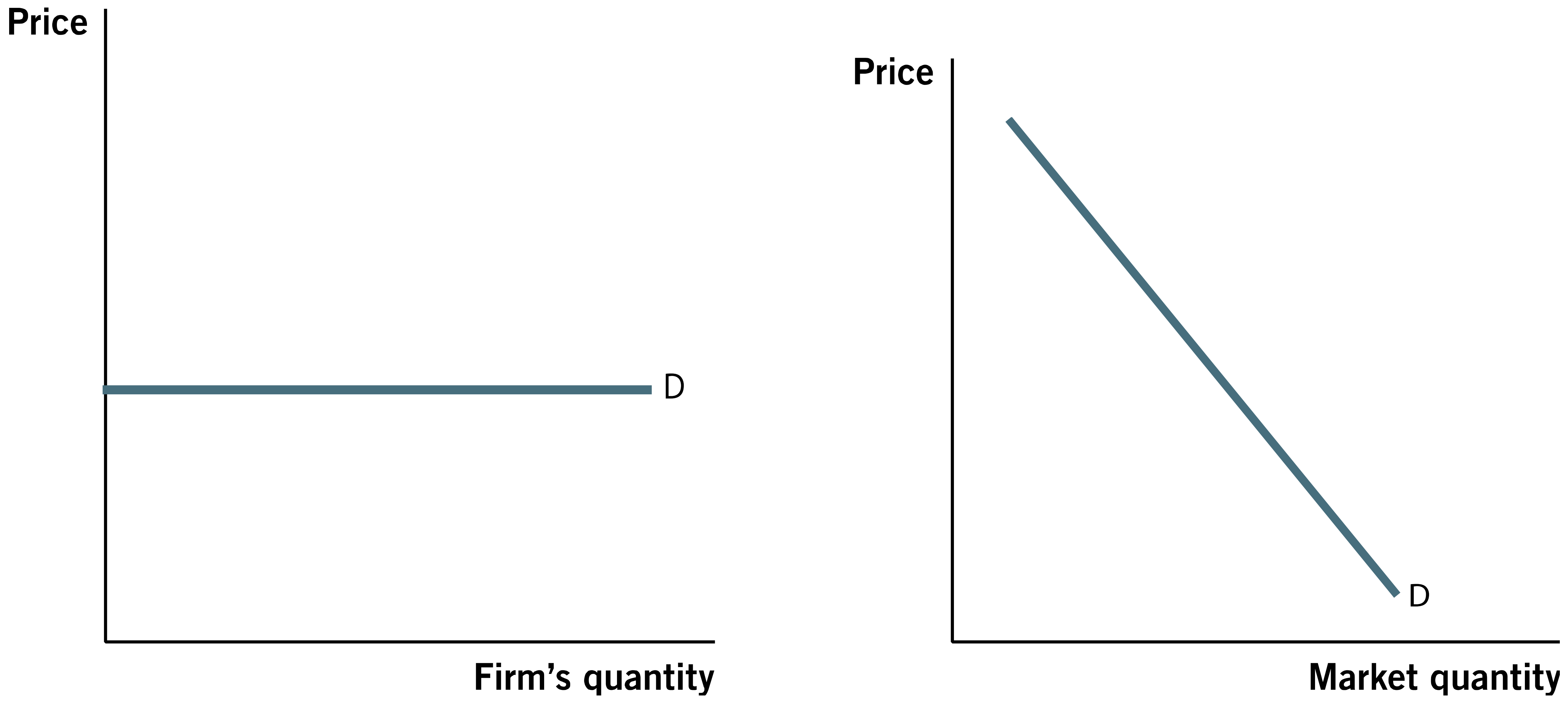
Comparing Demand Curves



(a) Competitive Firm

(b) Monopolist as Sole Provider

Profit Maximizing Rule for Monopoly

- Similarity between monopoly and competitive firms
  - Profit is maximized at output level (Q) where MR = MC
- Difference between monopoly and competitive firms
  - In competition, P = MR
  - In monopoly, P > MR
  - To increase output, monopoly must lower the price. Competitive firms can sell as much as they want at the market price.

Monopoly Marginal Revenue

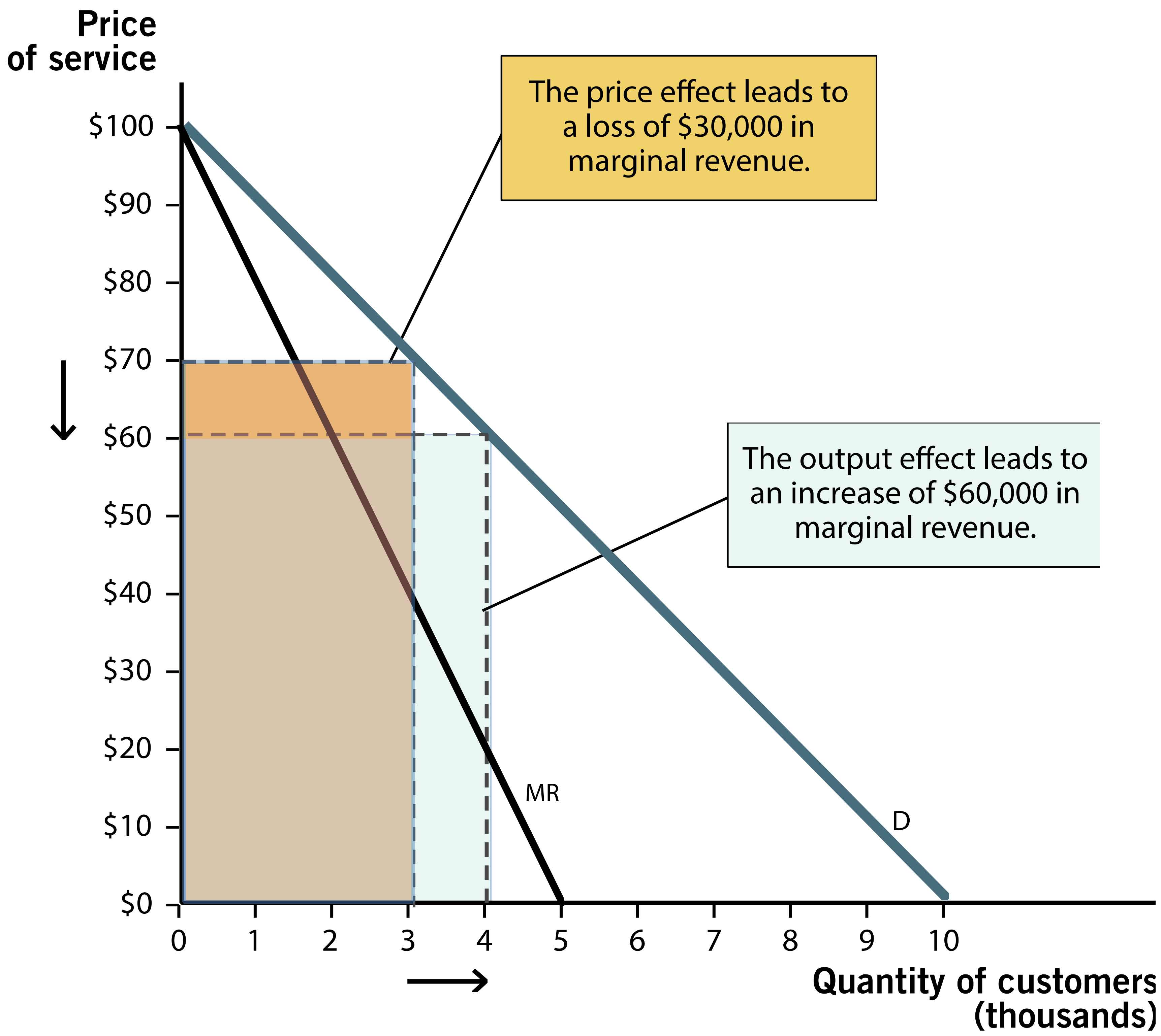
- When the monopoly decreases its price in order to sell more output units, two things happen:
  - The price effect
    - All units are now sold at a lower price. By itself, this is a *loss* for the firm.
  - The output effect
    - More units are sold. By itself, this is a *gain* for the firm.

Monopoly Marginal Revenue

Quantity of Customers (Q)	Price (P)	Total Revenue (TR) = Q × P	Marginal Revenue per 1,000 Customers (MR) = ΔTR
0	$100	$0.00	
1,000	90	90,000	$90,000
2,000	80	160,000	70,000
3,000	70	210,000	50,000
4,000	60	240,000	30,000
5,000	50	250,000	10,000
6,000	40	240,000	-10,000
7,000	30	210,000	-30,000
8,000	20	160,000	-50,000
9,000	10	90,000	-70,000
10,000	0	0.00	-90,000

Notice the inverse relationship between output (quantity) and price since the monopolist faces a downward-sloping demand curve.

Monopoly MR and Demand



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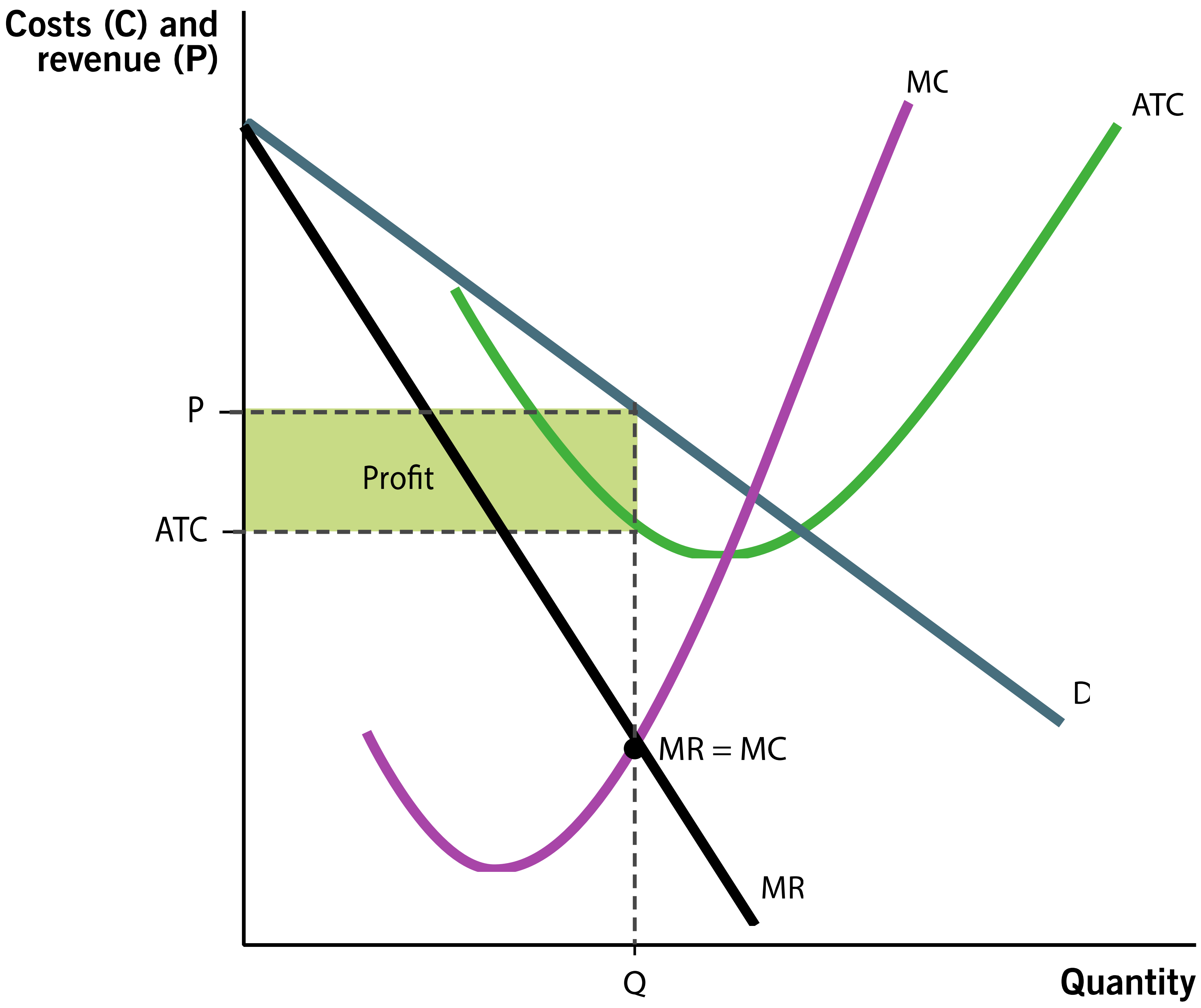
Understanding Monopoly: How Much Do Monopolies Produce?

Deciding How Much to Produce

- For a monopoly, we can use the same three-step process to determine profits that we used for a competitive firm:
  1. Find the **profit maximizing** point: MR = MC
  2. Find **output** (Q) at this point: move down the vertical dashed line to the *x* axis at point q
  3. The monopolist will charge a price P equal to the height of the demand curve at that quantity. The average costs will be the height of the ATC curve at that quantity. Average profit per unit is (P – ATC).

The Monopolist’s Profit



Contrasting Competition and Monopoly

Competitive Markets	Monopoly
Many firms	One firm
Produces efficient level of output (since $P = MC$)	Produces less than the efficient level of output (since $P > MC$)
Cannot earn long run economic profits	May earn long run economic profits
Has no market power (is a price taker)	Has significant market power (is a price maker)

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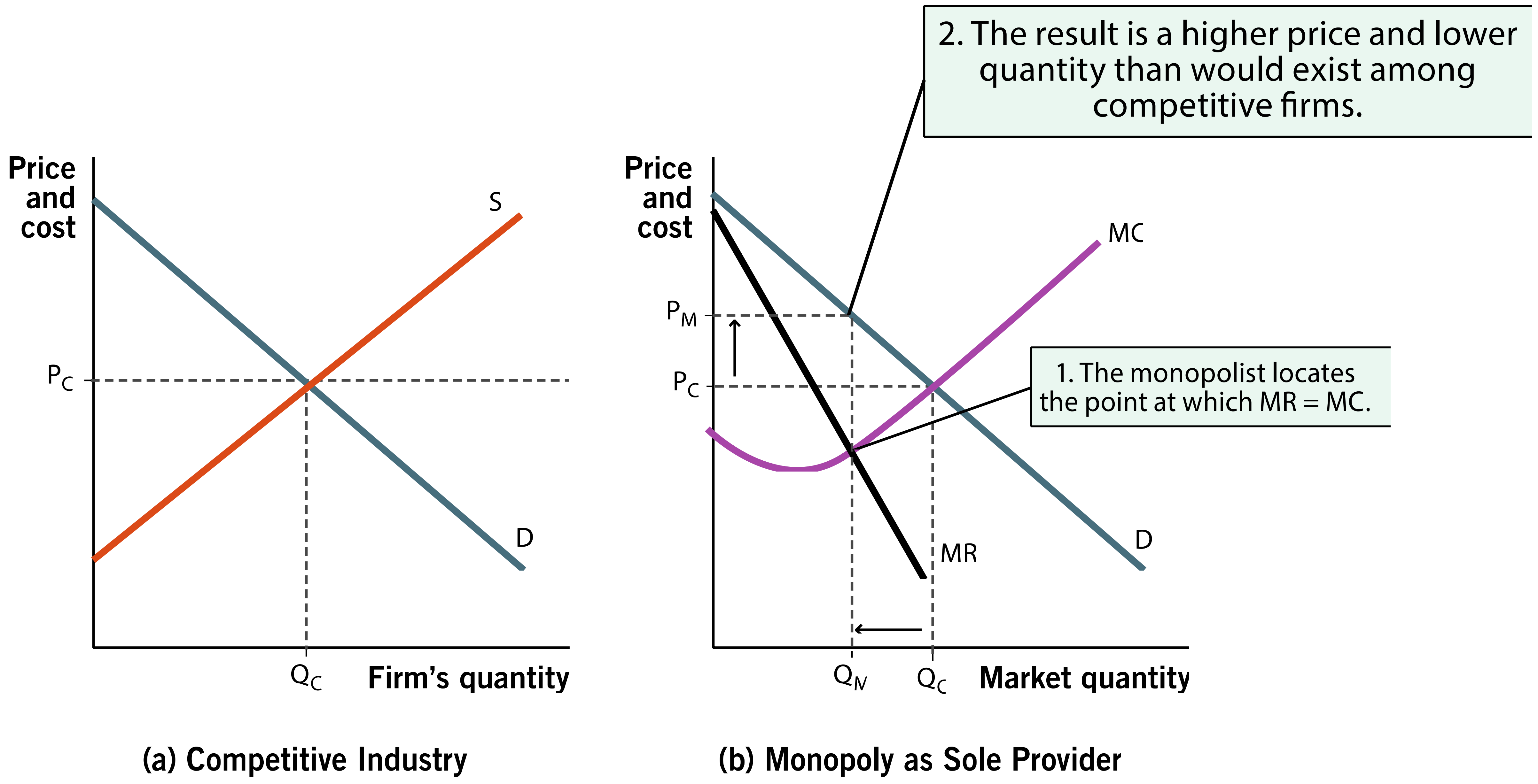
Understanding Monopoly: The Problems with Monopoly.

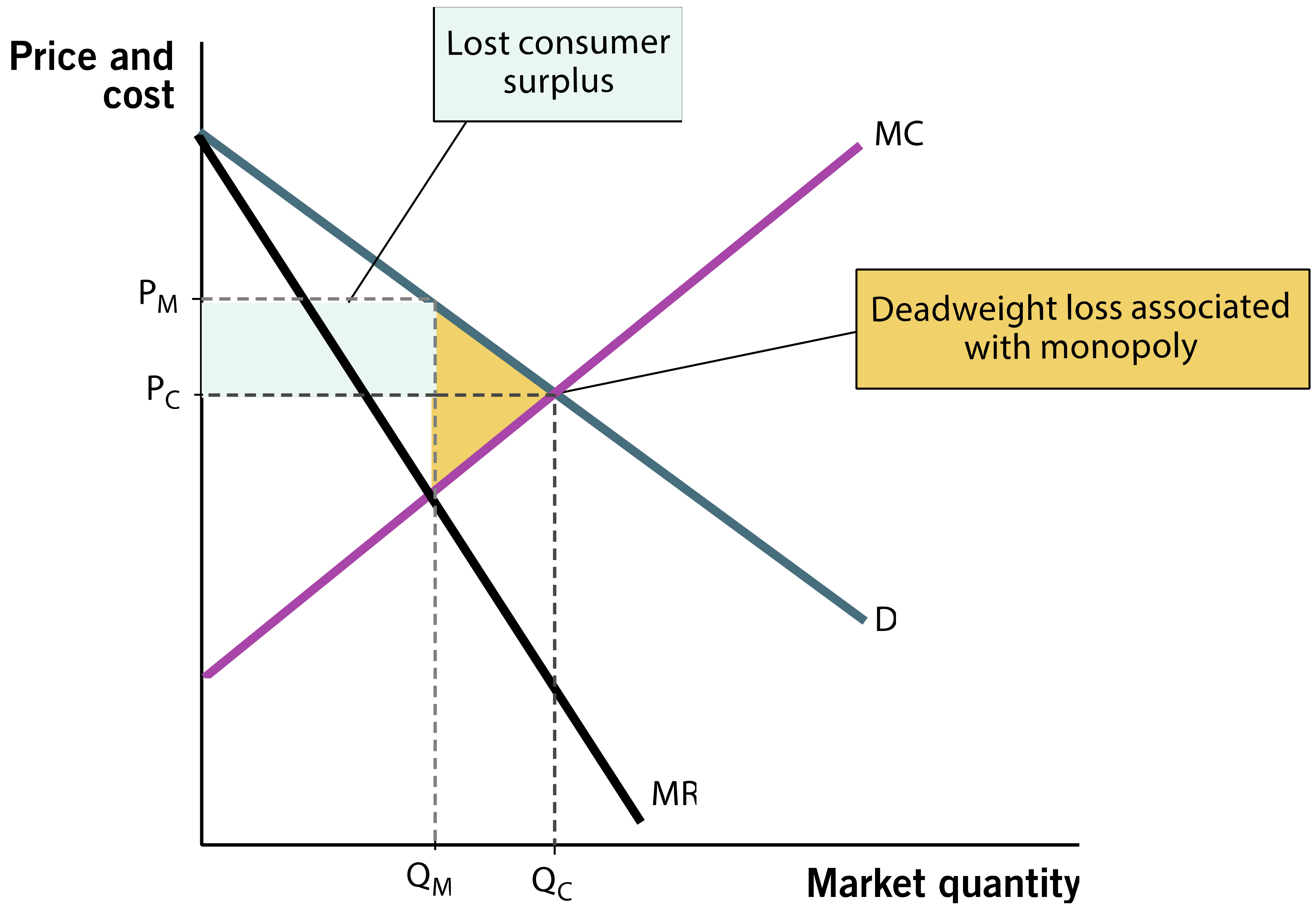
The Problems with Monopoly

- Monopolies can make societies worse off
  - Restricting output and charging higher prices compared to competitive markets
  - Operate inefficiently (deadweight loss). This is referred to as market failure.
  - Less choices for consumers
  - Unhealthy competition called “rent seeking”

Competitive Markets versus Monopoly



Deadweight Loss of Monopoly



Monopoly versus Competition

- Output (quantity)
  - $Q_{Monopoly} < Q_{Competition}$

- Price
  - $P_{Competition} < P_{Monopoly}$

- Deadweight loss
  - Monopoly DWL > 0
  - Competition DWL = 0

Monopoly Problems

- Few choices
  - Restricts consumer ability to put downward pressure on prices. No substitutes.
  - Cable companies and bundling. Monopolies can force you to buy more.
- Rent seeking
  - Competition among rivals to secure monopoly profits
  - This type of competition produces one winner without the other usual benefits of competition
  - Inefficient: Resources used to monopolize rather than become a more competitive firm

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Understanding Monopoly: Solutions to Monopoly.

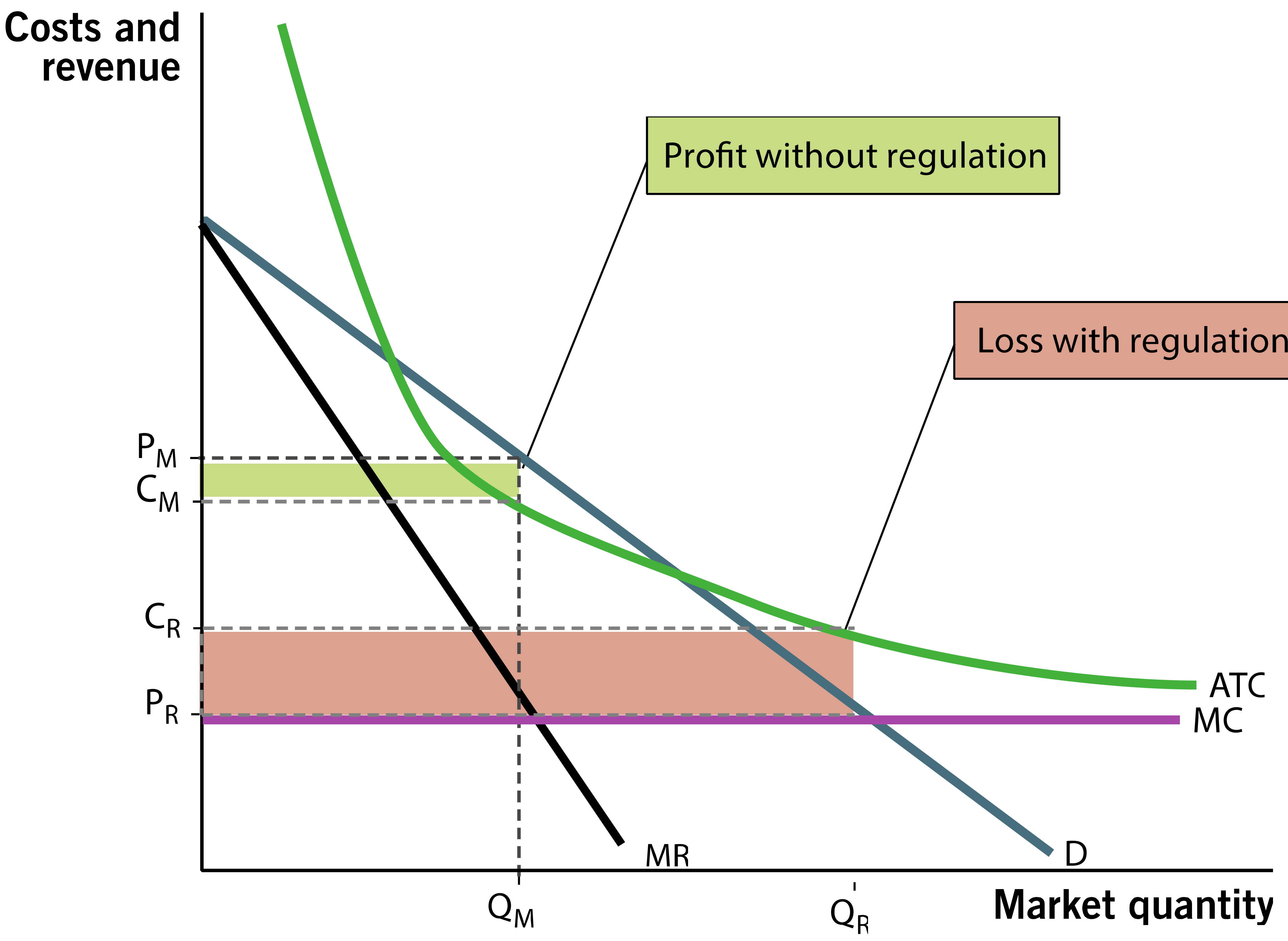
Solutions to Monopoly

- Harnessing benefits of competition
  - Splitting up a large company into smaller competing companies
  - AT&T (1982), Standard Oil (1911)
  - Sherman Act (1890)
- Reduce trade barriers
  - Allow competitively priced goods to be transported over borders
  - This includes state and national borders

Solutions to Monopoly

- Price regulation
  - Often, we don’t want to break up firms due to large economies of scale
    - Don’t need to have redundant water pipes, power lines
  - In this case, a monopoly may be desirable, but we may still need to regulate the firm to prevent market power abuse

Regulatory Solution for Natural Monopoly



Marginal Cost Pricing

- At P = MC
  - The monopolist experiences a loss
  - MC < ATC, so P < ATC (results in losses)
- Solutions?
  - Government subsidies given to the firm
  - Set P = ATC at the P = MC output level
  - Government ownership of the firm

Government Failure

- Government intervention
  - Can eliminate the profit motive and the necessity to innovate and improve efficiency
  - Government employees are rarely fired, regardless of performance
- Free market
  - Firms under MC pricing have no incentive to lower costs.
  - Often better than government intervention and changing incentives for a firm

Conclusion

- While competitive markets generally bring about welfare-enhancing outcomes for society, monopolies often do the opposite
  - Government seeks to limit monopoly outcomes and promote competitive markets
- Perfectly competitive markets and monopoly are market structures at opposite extremes
  - Most economic activity takes place between these two alternatives