

Economics

6th edition

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Microeconomics

SIXTH EDITION

Chapter 13

Monopolistic Competition: The
Competitive Model in a More
Realistic Setting

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Perfect competition vs. Monopolistic competition

The perfectly competitive markets in the previous chapter had the following three features:

1. Many firms
2. Firms sell identical products
3. No barriers to entry to new firms entering the industry

The first two features implied a horizontal demand curve for individual firms, while the third implied zero long-run profit.

Monopolistically competitive firms share features 1. and 3.; but their products are not identical to their competitors'.

So we expect monopolistically competitive firms to have zero long-run profit, but *not* to face a horizontal demand curve.

Demand and Marginal Revenue for a Firm in a Monopolistically Competitive Market

Monopolistic competition is a market structure in which barriers to entry are low and many firms compete by selling similar, but not identical, products.

The key feature here is that the products that monopolistically competitive firms sell are *differentiated* from one another in some way.

Example: Chipotle sells burritos, and competes in the burrito market against other firms selling burritos; but its burritos are not identical to its competitors'.

Figure 13.1 The downward-sloping demand curve for burritos at Chipotle

Chipotle sells burritos; while other firms also sell burritos, some customers have a preference for Chipotle's burritos.

So if Chipotle raises its price, some *but not all* of its customers will switch to buying their burritos elsewhere.

This means Chipotle faces a downward-sloping demand curve.

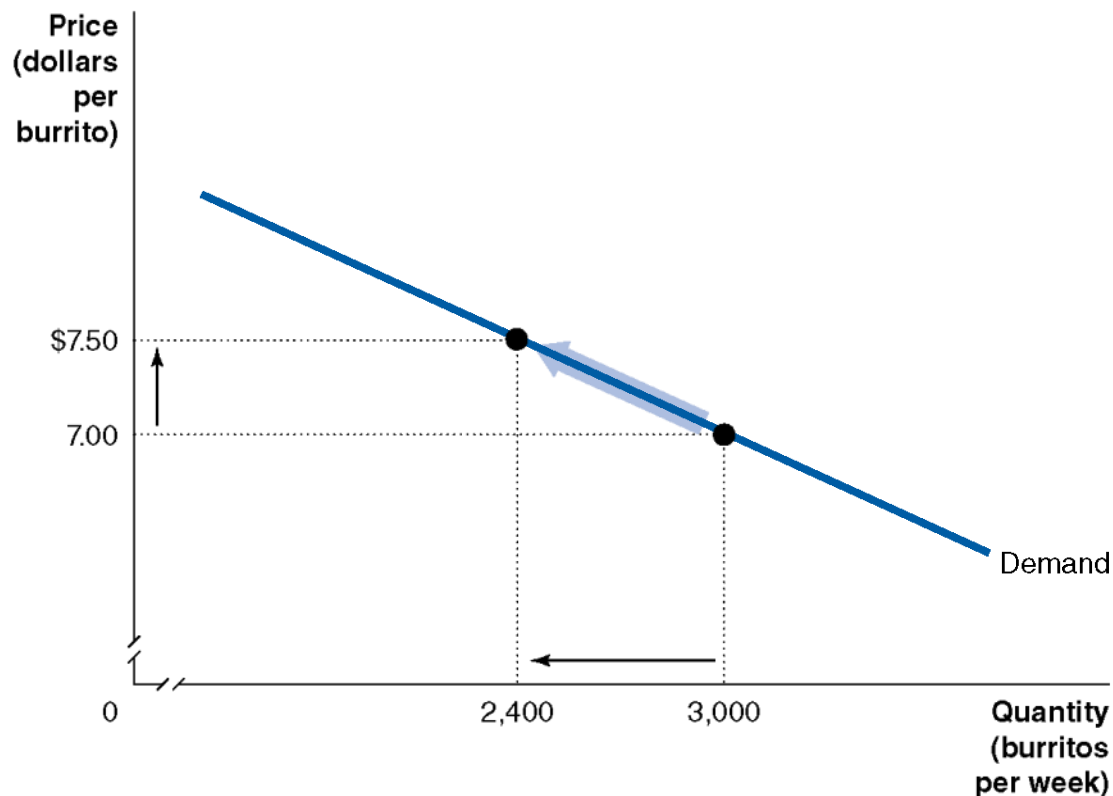


Table 13.1 Demand and marginal revenue at a Chipotle

Burritos Sold per Week (Q)	Price (P)	Total Revenue ($TR = P \times Q$)	Average Revenue ($AR = \frac{TR}{Q}$)	Marginal Revenue ($MR = \frac{\Delta TR}{\Delta Q}$)
0	\$10.00	\$0.00	—	—
1	9.50	9.50	\$9.50	\$9.50
2	9.00	18.00	9.00	8.50
3	8.50	25.50	8.50	7.50
4	8.00	32.00	8.00	6.50
5	7.50	37.50	7.50	5.50
6	7.00	42.00	7.00	4.50
7	6.50	45.50	6.50	3.50
8	6.00	48.00	6.00	2.50
9	5.50	49.50	5.50	1.50
10	5.00	50.00	5.00	0.50
11	4.50	49.50	4.50	-0.50

The first two columns show the demand schedule for Chipotle.

Total revenue increases initially, then decreases; Chipotle has to lower the price in order to sell additional burritos.

So marginal revenue is initially positive, then negative.

Figure 13.2 How a price cut affects a firm's revenue (1 of 2)

When Chipotle reduces the price of a burrito, it sells (let's say) 1 more burrito.

Its revenue increases because of the extra sale; this is the *output effect* of the price reduction.

But its revenue decreases also; to sell another burrito, it reduces the price on *all* burritos. It loses \$0.50 in revenue on each of the burritos it would have already sold at \$7.50. This is the *price effect* of the price reduction.

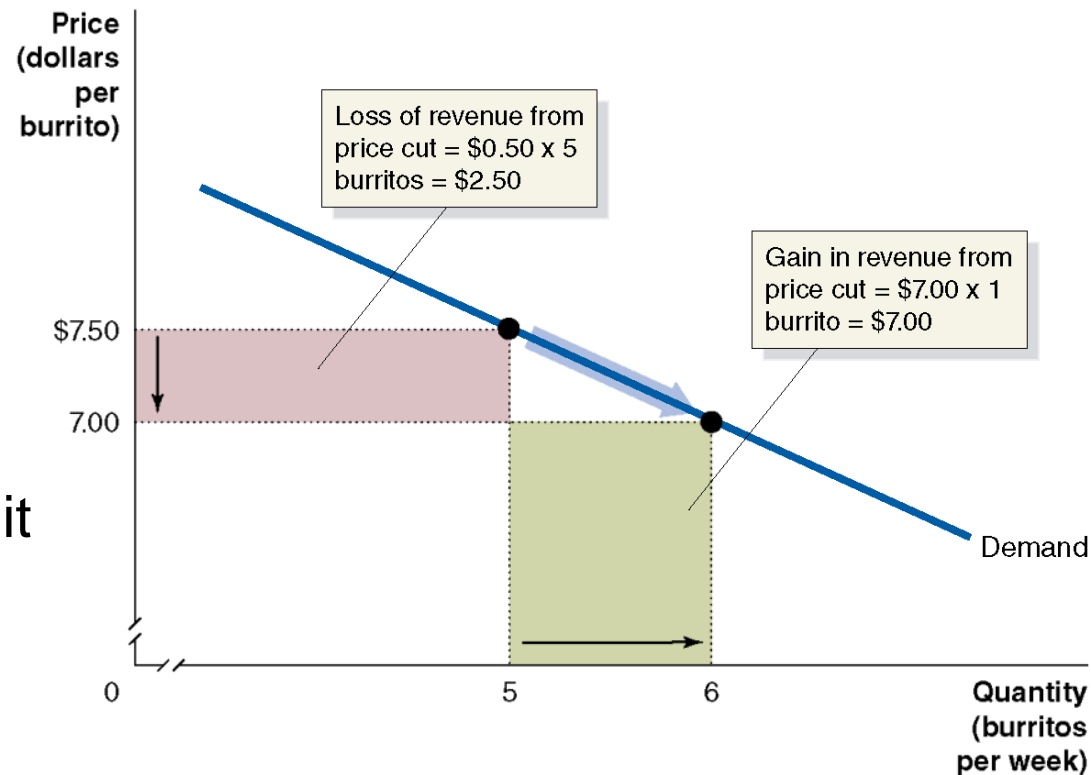


Figure 13.2 How a price cut affects a firm's revenue (2 of 2)

Chipotle's marginal revenue for selling the extra burrito is equal to the green area minus the pink area: the output effect minus the price effect.

The output effect is equal to the price; so *marginal revenue is lower than the price*.

For any firm with a downward-sloping demand curve, its marginal revenue curve must be below its demand curve.

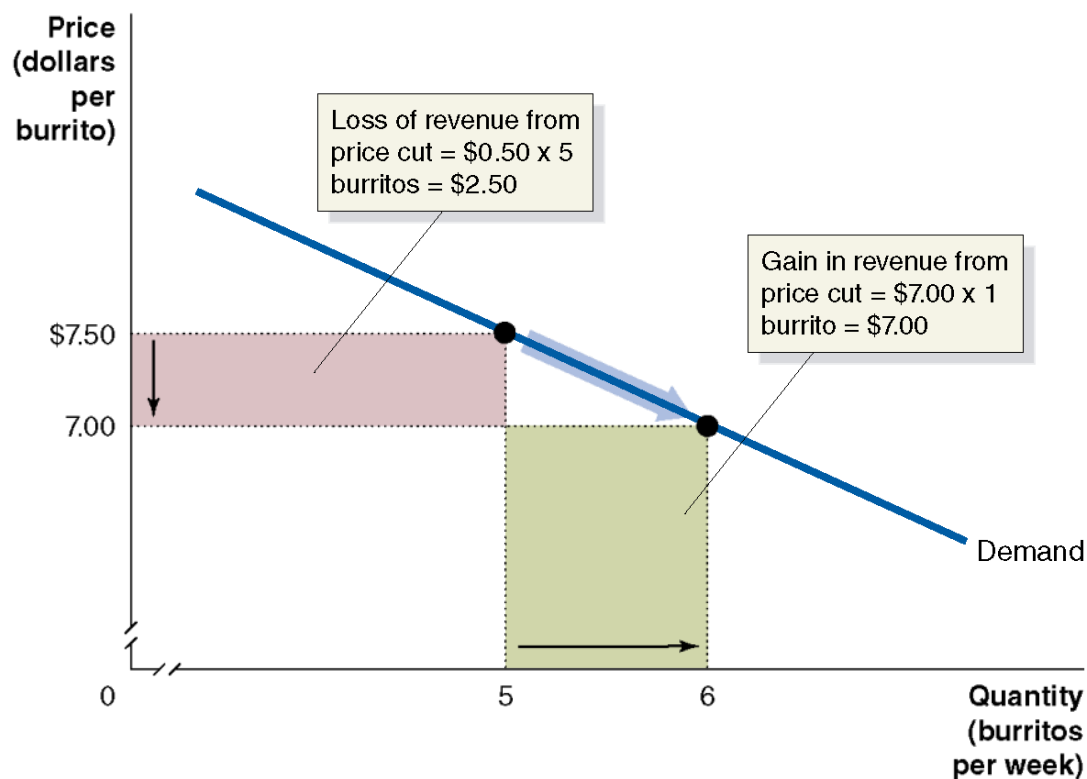
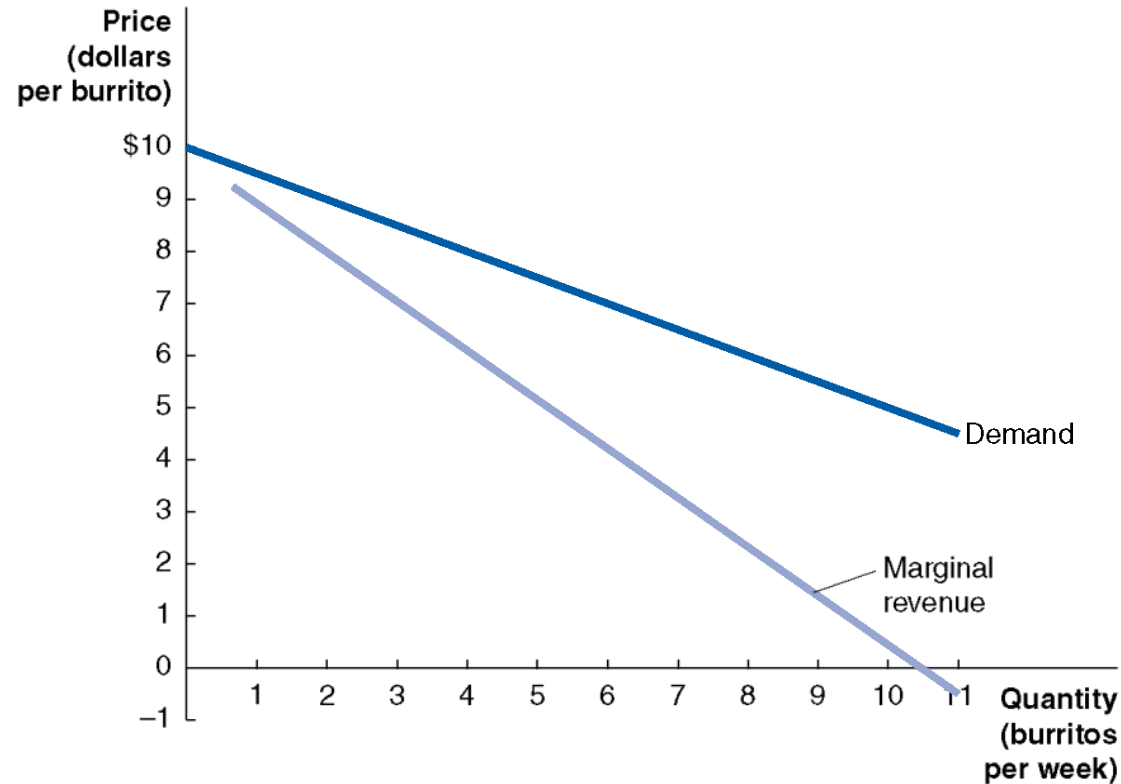


Figure 13.3 The demand and marginal revenue curves for a monopolistically competitive firm

The graph shows the Chipotle's demand and marginal revenue curves for burritos.

After the tenth burrito, reducing the price in order to increase sales results in revenue decreasing (negative marginal revenue)

- The price effect becomes larger than the output effect.



How a Monopolistically Competitive Firm Maximizes Profit in the Short Run

- Each additional unit of output incurs some *marginal cost*.
- Profit maximization requires producing until the marginal revenue from the last unit is just equal to the marginal cost: $MC = MR$.
- This same rule holds for all firms that can marginally adjust their output.

Maximizing profit in a monopolistically competitive market

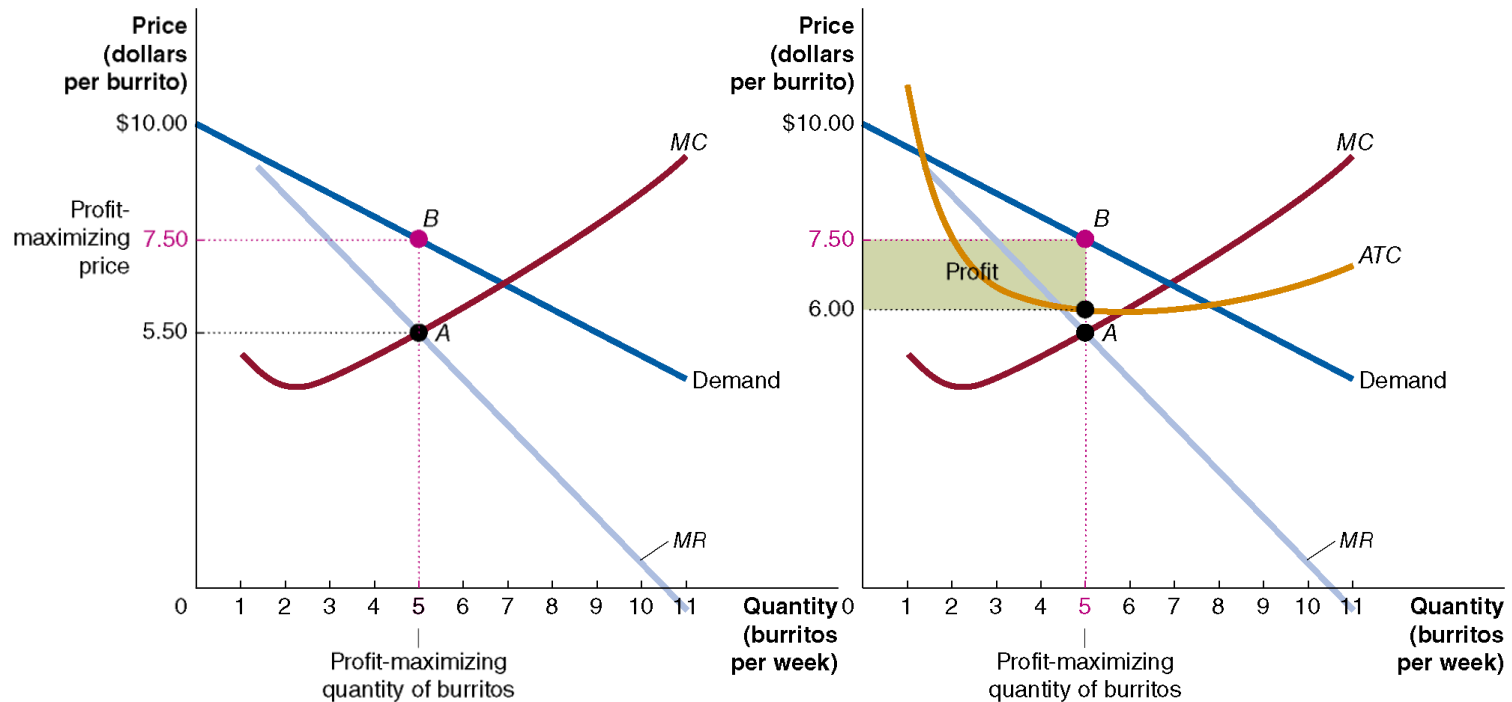
Burritos Sold per Week (Q)	Price (P)	Total Revenue (TR)	Marginal Revenue (MR)	Total Cost (TC)	Marginal Cost (MC)	Average Total Cost (ATC)	Profit
0	\$10.00	\$0.00	—	\$6.00	—	—	-\$6.00
1	9.50	9.50	\$9.50	11.00	\$5.00	\$11.00	-1.50
2	9.00	18.00	8.50	15.50	4.50	7.75	2.50
3	8.50	25.50	7.50	19.50	4.00	6.50	6.00
4	8.00	32.00	6.50	24.50	5.00	6.13	7.50
5	7.50	37.50	5.50	30.00	5.50	6.00	7.50
6	7.00	42.00	4.50	36.00	6.00	6.00	6.00
7	6.50	45.50	3.50	42.50	6.50	6.07	3.00
8	6.00	48.00	2.50	49.50	7.00	6.19	-1.50
9	5.50	49.50	1.50	57.00	7.50	6.33	-7.50
10	5.00	50.00	0.50	65.00	8.00	6.50	-15.00
11	4.50	49.50	-0.50	73.50	8.50	6.68	-24.00

The first, second, third, and fourth burritos each increase profit: $MC < MR$.

The 5th does not alter profit: $MC = MR$.

The 6th and subsequent burritos decrease profit: $MC > MR$.

Maximizing profit in a monopolistically competitive market



Chipotle sells burritos up until $MC = MR$.

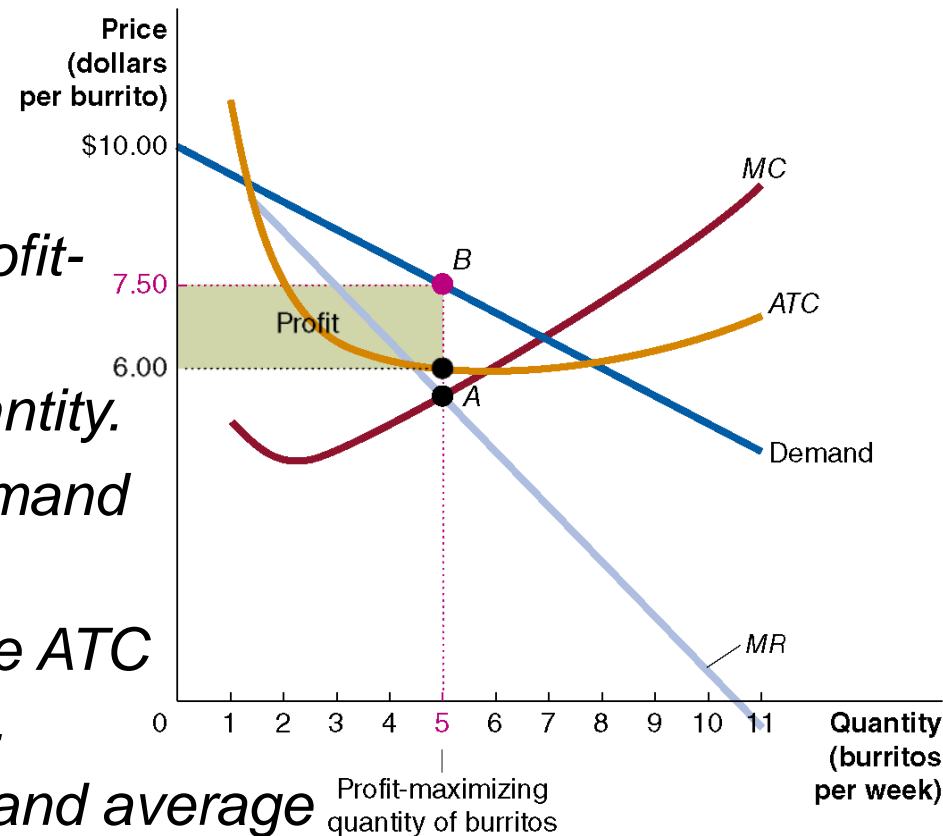
This selects the profit-maximizing quantity. Then the demand curve shows the price, and the ATC curve shows the average cost.

Since $Profit = (P - ATC) \times Q$, we can show profit on the graph with the green rectangle.

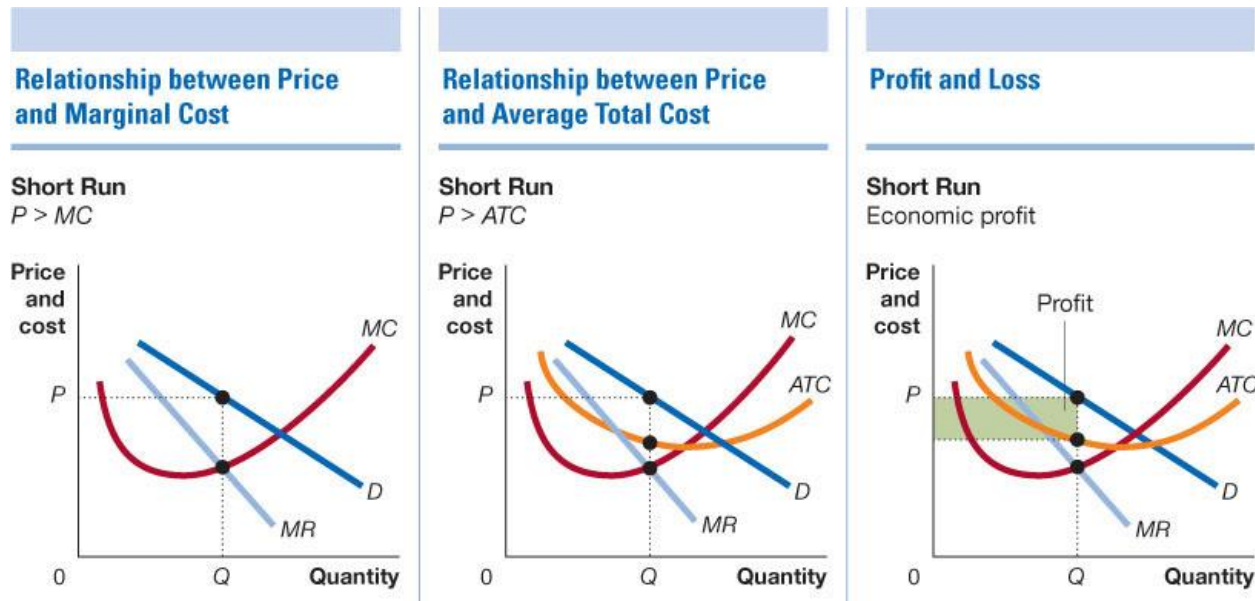
Maximizing profit in a monopolistically competitive market

To identify profit:

1. Use $MC=MR$ to identify the profit-maximizing quantity.
2. Draw a vertical line at that quantity.
3. The vertical line will hit the demand curve: this is the price.
4. The vertical line will also hit the ATC curve: this is the average cost.
5. The difference between price and average cost is the profit (or loss) per unit.
6. Show the profit or loss with the rectangle with height $(P - ATC)$ and length $(Q^* - 0)$, where Q^* is the optimal quantity.



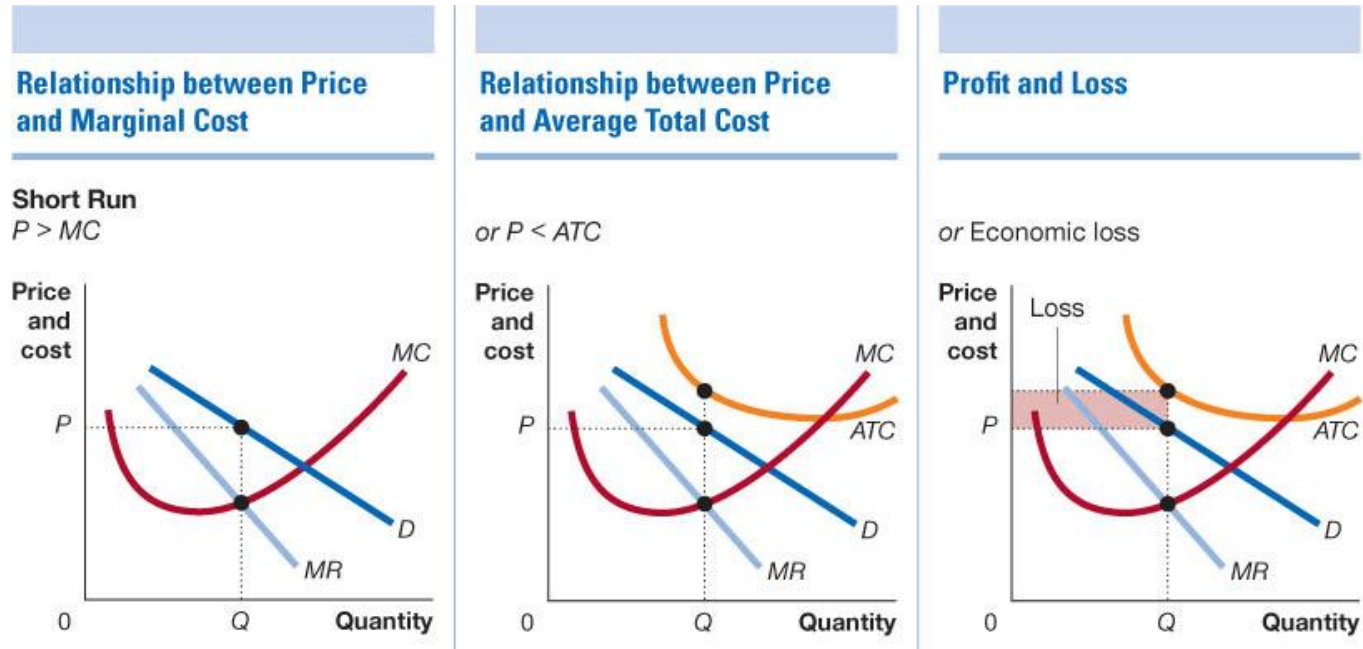
Case 1: A monopolistically competitive firm is making a profit.



The situation where the firm is making a profit is above.

Notice that there are quantities for which demand (price) is above ATC; this is what allows the firm to make a profit.

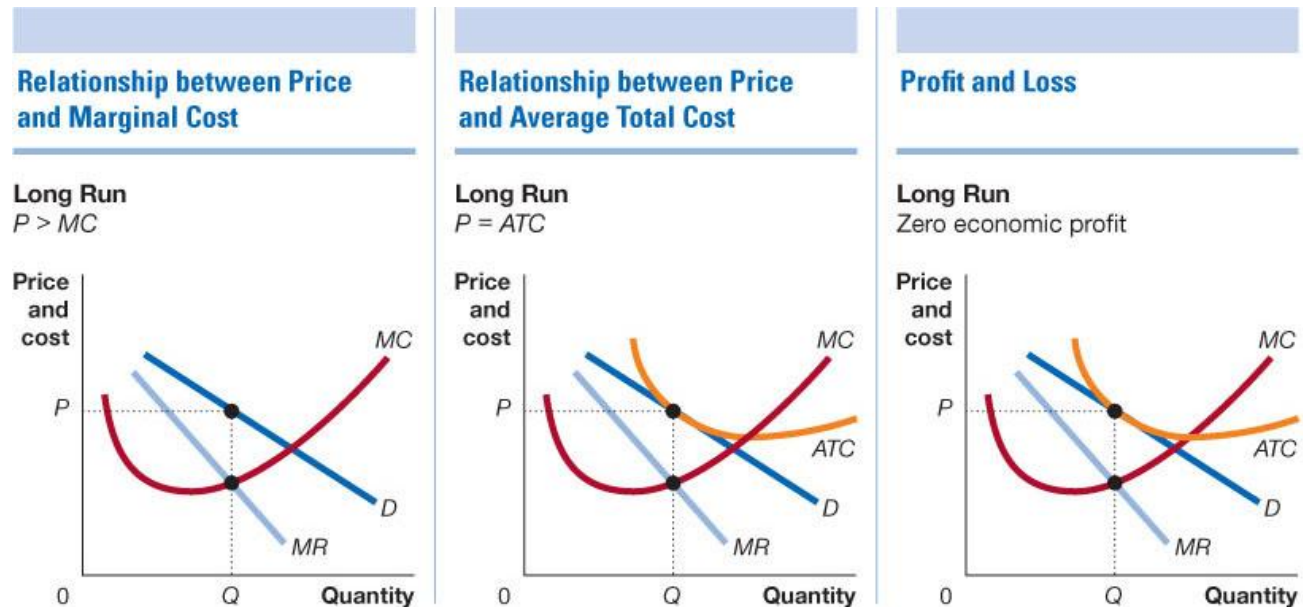
Case 2: A monopolistically competitive firm is making a loss.



Now the firm is making a loss.

Notice that there is now no quantity for which demand (price) is above ATC ; this firm must make a (short-run) economic loss, no matter what quantity it chooses.

Case 3: A monopolistically competitive firm is breaking even.



In the long run, the firm must break even.

Notice that the ATC curve is just tangent to the demand curve. The best the firm can do is to produce that quantity.

There is no quantity at which the firm can make a profit; the ATC curve is never below the demand curve.

What Happens to Profits in the Long Run?

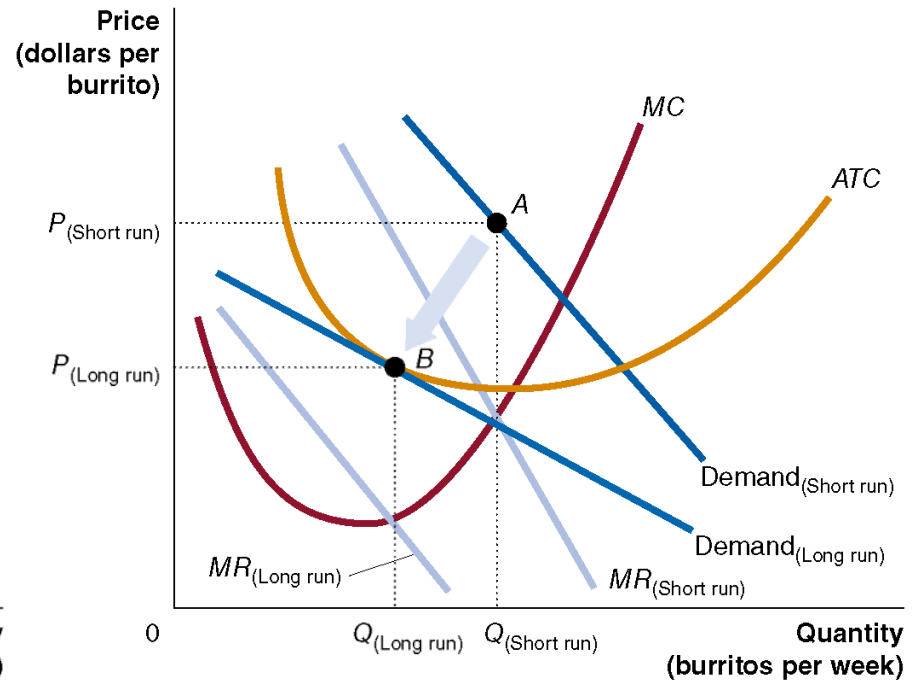
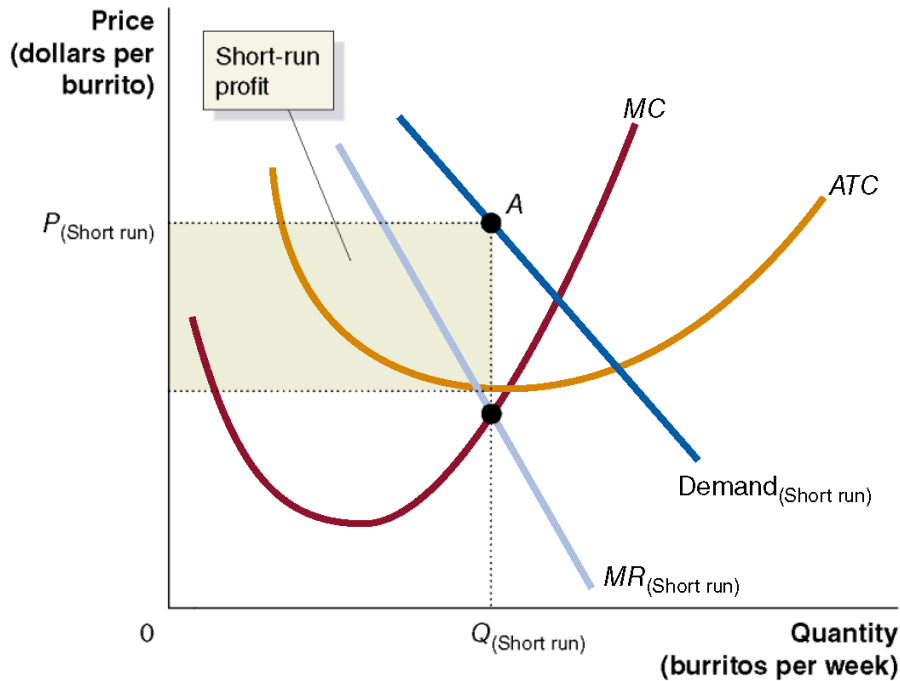
When a firm has total revenue greater than total cost, it makes an economic profit.

- This economic profit gives entrepreneurs an incentive to enter the market.

In our previous example, Chipotle makes an economic profit.

- We expect new firms to enter the burrito market.
- These new firms will reduce the demand for Chipotle's burritos.

How entry of new firms eliminates profits



At first (left panel), Chipotle has few competitors, so demand for its burritos is high. It makes an economic profit.

This economic profit attracts new firms, decreasing the demand for Chipotle's burritos (right panel).

This continues until Chipotle no longer makes an economic profit.

Zero profit in the long run?

Our model of monopolistic competition predicts that firms will earn zero profit in the long run.

However firms need not passively accept this long-run outcome. They could:

- Innovate so that their costs are lower than other firms, or
- Convince their customers that their product/experience is *better* than that of other firms, either by actually *making* it better in some unique way, or making customers *perceive* that it is better, perhaps through advertising.

How Marketing Differentiates Products ?

Making customers believe that your product is worthwhile and different from those of other firms is not a trivial exercise. It typically involves **some degree of marketing**.

Marketing: All the activities necessary for a firm to sell a product to a consumer.

- **Example: Advertising**

By advertising effectively, firms can increase demand for their products. And they can also use advertising to *differentiate* their products. This allows firms to charge a higher price and earn more short-run profit.

Discuss: What Makes a Firm Successful?

A firm's ability to differentiate its product and to produce it at a lower average cost than competing firms creates *value* for its customers.

- Some factors that affect a firm's profitability are not directly under the firm's control. Certain factors will affect all the firms in a market.
- The factors under a firm's control—the ability to differentiate its product and the ability to produce it at lower cost—combine with the factors beyond its control to determine the firm's profitability.

What makes a firm successful?

