Chapter 13 Lecture - Monopolistic Competition: The Competitive Model in a More Realistic Setting

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.

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

We explain why a monopolistically competitive firm has downward-sloping demand and marginal revenue curves.

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'.

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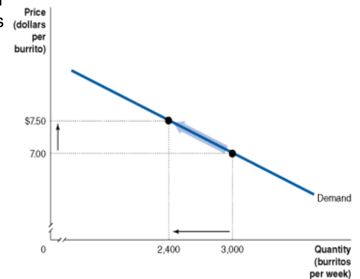
Figure 13.1 The Downward-Sloping Demand Curve for Burritos at Chipotle

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.



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Chapter 13 Lecture - Monopolistic Competition: The Competitive Model in a More Realistic Setting

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 $\left(AR = \frac{TR}{Q}\right)$	Marginal Revenue $\left(MR = \frac{\Delta TR}{\Delta Q}\right)$
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.

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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.

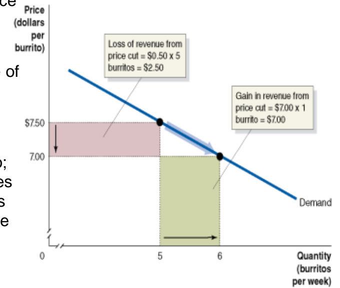

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Figure 13.2 How a Price Cut Affects a Firm's Revenue (2 of 2)

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.

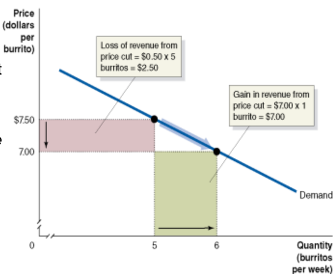

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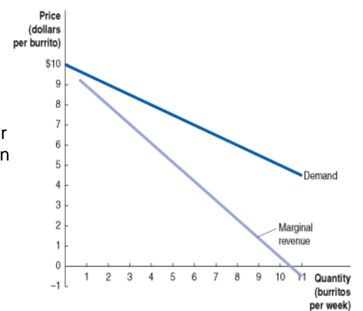
Figure 13.3 The Demand and Marginal Revenue Curves for a Monopolistically Competitive Firm

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.



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Chapter 13 Lecture - Monopolistic Competition: The Competitive Model in a More Realistic Setting

How a Monopolistically Competitive Firm Maximizes Profit in the Short Run

We explain how a monopolistically competitive firm maximizes profit in the short run.

Just like a perfectly competitive firm, a monopolistically competitive firm should not simply try to maximize revenue.

- 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.

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Figure 13.4 Maximizing Profit in a Monopolistically Competitive Market (1 of 3)

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*.

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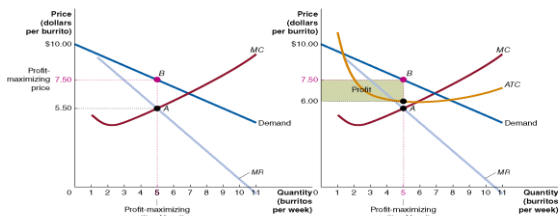
Figure 13.4 Maximizing Profit in a Monopolistically Competitive Market (2 of 3)



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) x Q*, we can show profit on the graph with the green rectangle.

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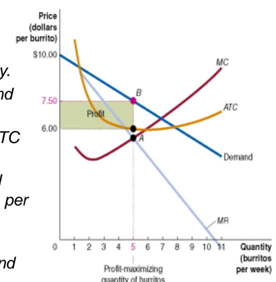
Figure 13.4 Maximizing Profit in a Monopolistically Competitive Market (3 of 3)

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.*



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What Happens to Profits in the Long Run?

We analyze the situation of a monopolistically competitive firm 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.

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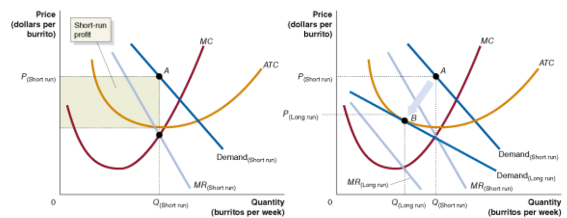
Figure 13.5 How Entry of New Firms Eliminates Profits



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.

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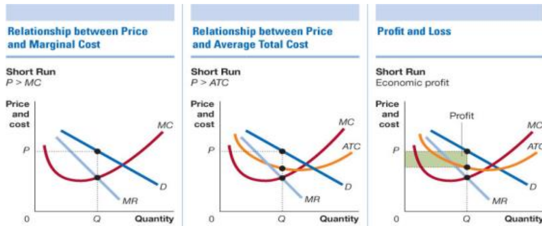
Table 13.2 The Short Run and the Long Run for a Monopolistically Competitive Firm (1 of 3)



In the short run, a monopolistically competitive firm might make a profit or a loss.

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.

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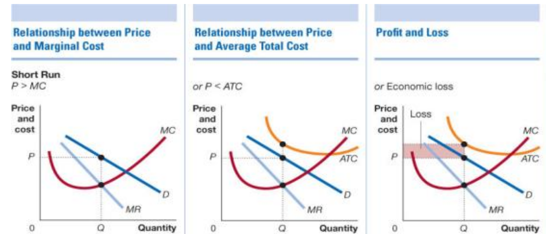
Table 13.2 The Short Run and the Long Run for a Monopolistically Competitive Firm (2 of 3)



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.

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Table 13.2 The Short Run and the Long Run for a Monopolistically Competitive (3 of #) Firm (3 of 3)

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.

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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.

Think of the long-run as "the direction of trend"; demand will continue to fall to the zero (economic) profit level, *unless the firm is able to do something about it.*

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Making the Connection: How Can Chipotle Maintain Its Economic Profit?

One of Chipotle's early marketing strategies was to convince people it was healthier than alternative fast foods.

- But some reports have suggested this is not the case.

To maintain its edge, Chipotle has tried to appear more socially responsible.

- It announced it would stop using genetically modified ingredients and publicized buying many local ingredients.

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Comparing Monopolistic Competition and Perfect Competition

We compare the efficiency of monopolistic competition and perfect competition.

Last chapter we learned that perfectly competitive firms achieved productive and allocative efficiency.

- *Productive efficiency* refers to producing items at the lowest possible cost.
- *Allocative efficiency* refers to producing all goods up to the point where the marginal benefit to consumers is just equal to the marginal cost to firms.

Monopolistic competition results in neither productive nor allocative efficiency.

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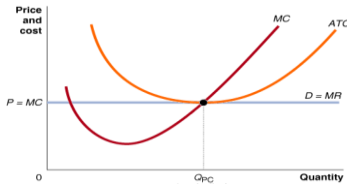
Figure 13.6 Comparing Long-Run Equilibrium under Perfect Competition and Monopolistic Competition (1 of 2)



In panel (a), a perfectly competitive firm in long-run equilibrium produces at Q_{PC}, where price equals marginal cost and average total cost is at a minimum.

The perfectly competitive firm is both allocatively efficient and productively efficient.

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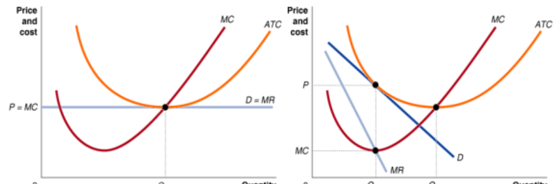
Figure 13.6 Comparing Long-Run Equilibrium under Perfect Competition and Monopolistic Competition (2 of 2)



Monopolistically competitive firms in panel (b) produce the quantity where *MC=MR*. The marginal benefit to consumers is given by the demand curve, so *MC≠MB≠P*: not allocatively efficient.

And average cost is above its minimum point: not productively efficient.

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Monopolistic versus Perfect Competition

Excess Capacity

- There is no excess capacity in perfect competition in the long run.
- Free entry results in competitive firms producing at the point where average total cost is minimized, which is the efficient scale of the firm.
- There is excess capacity in monopolistic competition in the long run.
- In monopolistic competition, output is less than the efficient scale of perfect competition.

Markup Over Marginal Cost

- For a competitive firm, P=MC.
- For a monopolistically competitive firm, P>MC.
- Because P>MC, an extra unit sold at the posted price means more profit for the monopolistically competitive firm

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Is Monopolistic Competition Bad for Consumers?

The lack of efficiency suggests that monopolistic competition is a bad situation for consumers.

- But consumers might benefit from the product differentiation.

Example: If you were buying a car, would you prefer one

a. *Produced and sold at the lowest possible cost but not well-suited to your tastes and preferences; or*
b. *Produced and sold at a higher cost but designed to attract you to purchasing it?*

Many consumers are willing to accept a higher price for a differentiated product. So monopolistic competition is not necessarily bad for consumers.

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How Marketing Differentiates Products

We define marketing and explain how firms use marketing to differentiate their 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.

Once a firm manages to differentiate its product, it must continue to do so or risk heading toward the long-run outcome of zero economic profit. The process of doing this is known as *brand management*.

Brand management: The actions of a firm intended to maintain the differentiation of a product over time.

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Advertising

Advertising is a critical element of marketing for monopolistically competitive firms.

- By advertising effectively, firms can increase demand for their products.

But they can also use advertising to *differentiate* their products: effectively making the demand curve more inelastic.

- This allows firms to charge a higher price and earn more short-run profit.

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Defending a Brand Name

Marketing experts and psychologists agree: a critical aspect of marketing is creating a *brand name* for your product.

- A successful brand name can help to maintain product differentiation and delay the ability of other firms to compete away your profits.

But firms must always try to maintain the perception of their product as better than others, making sure that, for example:

- A highly-successful name like Coke, Xerox, or Band-Aid is uniquely associated to that product and not to generic products,
- Other firms don't illegally use their brand name, and
- Franchisees and others legally allowed to use their brand name maintain the level of quality and service you expect.

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What Makes a Firm Successful?

We identify the key factors that determine a firm's success.

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.

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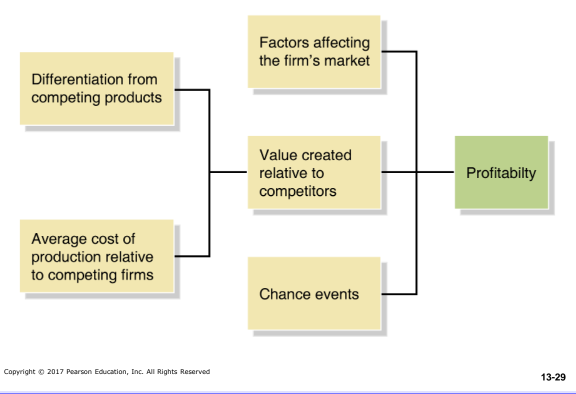
Figure 13.7 What Makes a Firm Successful?



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Makng the Connection: Is Being the First Firm in a Market a Key to Success?

By being the first to sell a particular good, a firm may gain a *first-mover advantage,* finding its name closely associated with the good in the public's mind.

Surprisingly, recent research has shown that the first firm to enter a market often does *not* have a long-lived advantage over later entrants.

Among dominant, but not first brands:

- Bic pens
- Apple iPod digital music player
- Hewlett Packard laser printers

In the end, providing customers with good products at a low price is probably the best way to ensure success.

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Advertising Debates

Positive Effects	Negative Effects
Low-cost way of providing information to consumers	Can be manipulative
Enhances competition	Contains misleading claims that confuse consumers
Speeds up technological progress	Consumers pay high prices for a good while forgoing a better, lower priced, unadvertised version of the product
Can help firms obtain economies of scale	

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What Do You Think?

The product differentiation inherent in monopolistic competition leads to the use of advertising and brand names.

- Critics argue that firms use advertising and brand names to take advantage of consumer irrationality and to reduce competition.
- Defenders argue that firms use advertising and brand names to inform consumers and to compete more vigorously on price and product quality.

"These are cheaper than the brand name, and just as ineffective."

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