

# 第十四章 Chapter 14

## 竞争市场中的企业 Firms in Competitive Markets

# 竞争的含义

## The Meaning of Competition

完全竞争市场具有下列特征：

**A perfectly competitive market has the following characteristics:**

市场中有许多买者和卖者

There are many buyers and sellers in the market.

各个卖者提供的物品大体上是相同的

The goods offered by the various sellers are largely the same.

企业可以自由地进入或退出市场

Firms can freely enter or exit the market.

# 竞争的含义

## The Meaning of Competition

✧ 这些特征，使得**完全竞争市场**具有如下结果：  
As a result of its characteristics, the **perfectly competitive market** has the following outcomes:

✧ 任何一个买者或卖者的行动对市场价格的影  
响都可以忽略不计。

The actions of any single buyer or seller in the market have a negligible impact on the market price.

✧ 每一个买者和卖者都接受市场决定的价格。  
Each buyer and seller takes the market price as given.

# 竞争的含义

## The Meaning of Competition

竞争市场中的买者和卖者被称为**价格接受者**。

Buyers and sellers in competitive markets are said to be **price takers.**

# 竞争企业的收益

## Revenue of a Competitive Firm

企业的总收益是销售价格乘以销售量。 **Total revenue** for a firm is the *selling price* times the *quantity sold*.

$$TR = (P \times Q)$$

# 竞争企业的总收益、平均收益和边际收益 Total, Average, and Marginal Revenue for a Competitive Firm

考虑史密斯家庭奶牛厂.....

*Consider the Smith Family Dairy Farm .....*

产量 Quantity (Q)	价格 Price (P)	总收益 Total Revenue ( $TR=P \times Q$ )	平均收益 Average Revenue ( $AR=TR/Q$ )	边际收益 Marginal Revenue ( $MR=\Delta TR/\Delta Q$ )
1	\$6.00	\$6.00	\$6.00	
2	\$6.00	\$12.00	\$6.00	\$6.00
3	\$6.00	\$18.00	\$6.00	\$6.00
4	\$6.00	\$24.00	\$6.00	\$6.00
5	\$6.00	\$30.00	\$6.00	\$6.00
6	\$6.00	\$36.00	\$6.00	\$6.00
7	\$6.00	\$42.00	\$6.00	\$6.00
8	\$6.00	\$48.00	\$6.00	\$6.00

# 竞争企业的收益

## Revenue of a Competitive Firm

对竞争企业来说，**总收益**与产量成比例。

For *competitive* firms, **total revenue** is proportional to the amount of output.

# 竞争企业的收益

## Revenue of a Competitive Firm

**平均收益**告诉我们一个企业从每一典型单位的销售中得到多少收益。

**Average revenue** tells us how much revenue a firm receives for the typical unit sold.



# 竞争企业的收益

## Revenue of a Competitive Firm

对所有企业来说，平均收益等于物品的价格。

For *all* firms, **average revenue** equals the price of the good.

$$\begin{aligned}\text{Average revenue} &= \frac{\text{Total revenue}}{\text{Quantity}} \\ &= \frac{(\text{Price} \times \text{Quantity})}{\text{Quantity}} \\ &= \text{Price}\end{aligned}$$

# 竞争企业的收益

## Revenue of a Competitive Firm

边际收益是销售量增加一个单位带来的总收益的变化。

**Marginal revenue** is the change in total revenue from an additional unit sold.

$$MR = \Delta TR / \Delta Q$$

# 竞争企业的收益

## Revenue of a Competitive Firm

对竞争企业来说，**边际收益**等于物品价格。  
For *competitive* firms, **marginal revenue** equals the price of the good.

$$\begin{aligned} MR &= \Delta TR / \Delta Q \\ &= \Delta(P^*Q) / \Delta Q \\ &= P^* \Delta Q / \Delta Q \\ &= P \end{aligned}$$

# 竞争企业的利润最大化

## Profit Maximization for the Competitive Firm

竞争企业的目标是利润最大化。

The goal of a competitive firm is to **maximize profit**.

这意味着企业将生产使总收益和总成本之差最大的产量。

This means that the firm will want to produce the quantity that maximizes the *difference between total revenue and total cost*.

# 利润最大化：一个数字例子

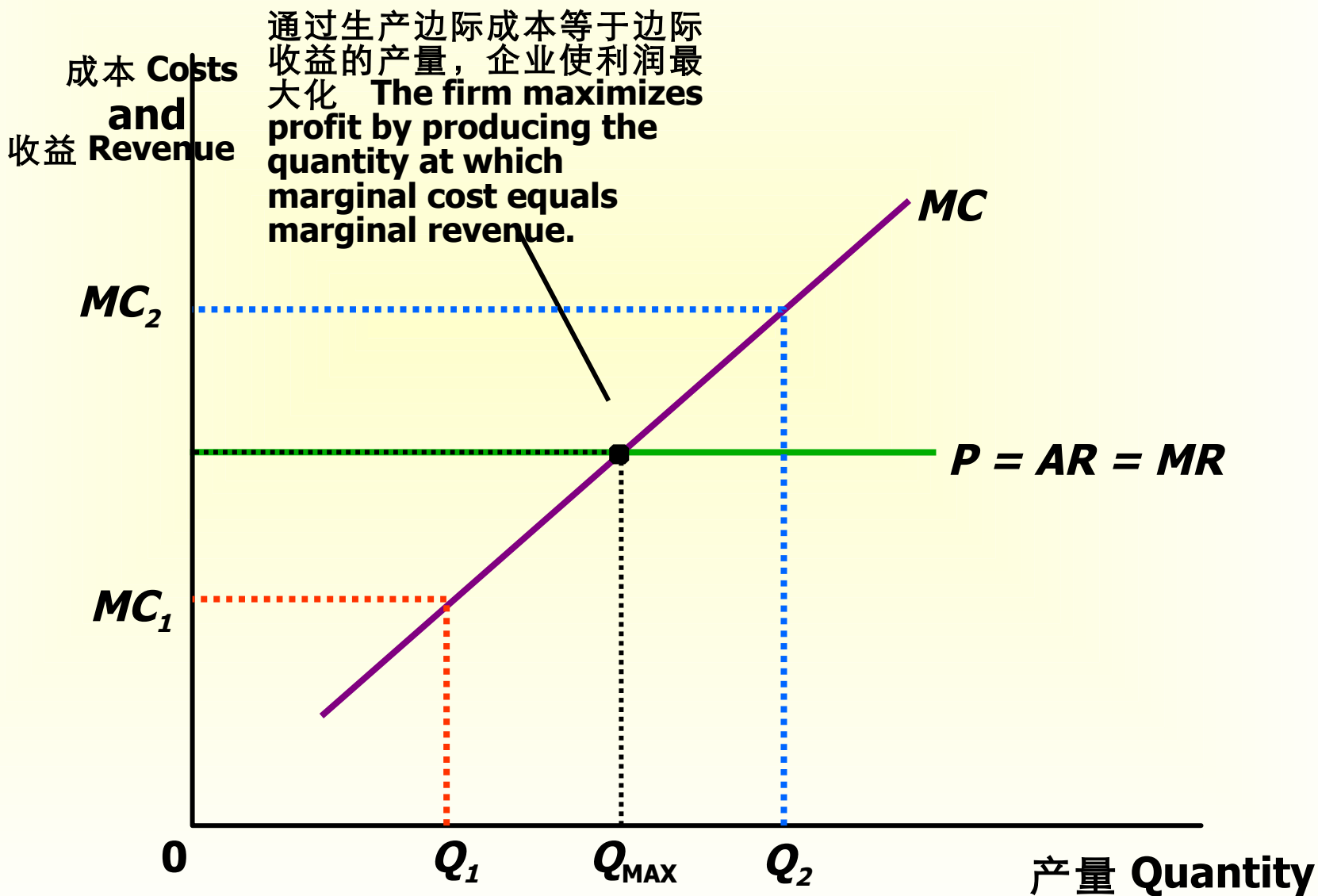
## Profit Maximization: A Numerical Example

□□□□□□□□ *Smith Family Dairy Farm*

价格 Price (P)	产量 Quantity (Q)	总收益 Total Revenue ( $TR=P \times Q$ )	总成本 Total Cost (TC)	利润 Profit ( $TR-TC$ )	边际收益 Marginal Revenue ( $MR=\Delta TR / \Delta Q$ )	边际成本 Marginal Cost ( $MC=\Delta TC / \Delta Q$ )
	0	\$0.00	\$3.00	-\$3.00		
\$6.00	1	\$6.00	\$5.00	\$1.00	\$6.00	\$2.00
\$6.00	2	\$12.00	\$8.00	\$4.00	\$6.00	\$3.00
\$6.00	3	\$18.00	\$12.00	\$6.00	\$6.00	\$4.00
\$6.00	4	\$24.00	\$17.00	\$7.00	\$6.00	\$5.00
\$6.00	5	\$30.00	\$23.00	\$7.00	\$6.00	\$6.00
\$6.00	6	\$36.00	\$30.00	\$6.00	\$6.00	\$7.00
\$6.00	7	\$42.00	\$38.00	\$4.00	\$6.00	\$8.00
\$6.00	8	\$48.00	\$47.00	\$1.00	\$6.00	\$9.00

# 竞争企业的利润最大化

## Profit Maximization for the Competitive Firm



# 竞争企业的利润最大化

## Profit Maximization for the Competitive Firm

在利润最大化的产量水平上，  
边际收益和边际成本正好相等。  
。 **Profit maximization** occurs at  
the quantity where marginal  
revenue equals marginal cost.  
原理 3：理性人考虑边际量。

# 竞争企业的利润最大化 Profit Maximization for the Competitive Firm

当 *When*  $MR > MC$  增加 increase  
 $Q$

当 *When*  $MR < MC$  减少 decrease  
 $Q$

当 *When*  $MR = MC$  利润是最大的  
*Profit is maximized.*



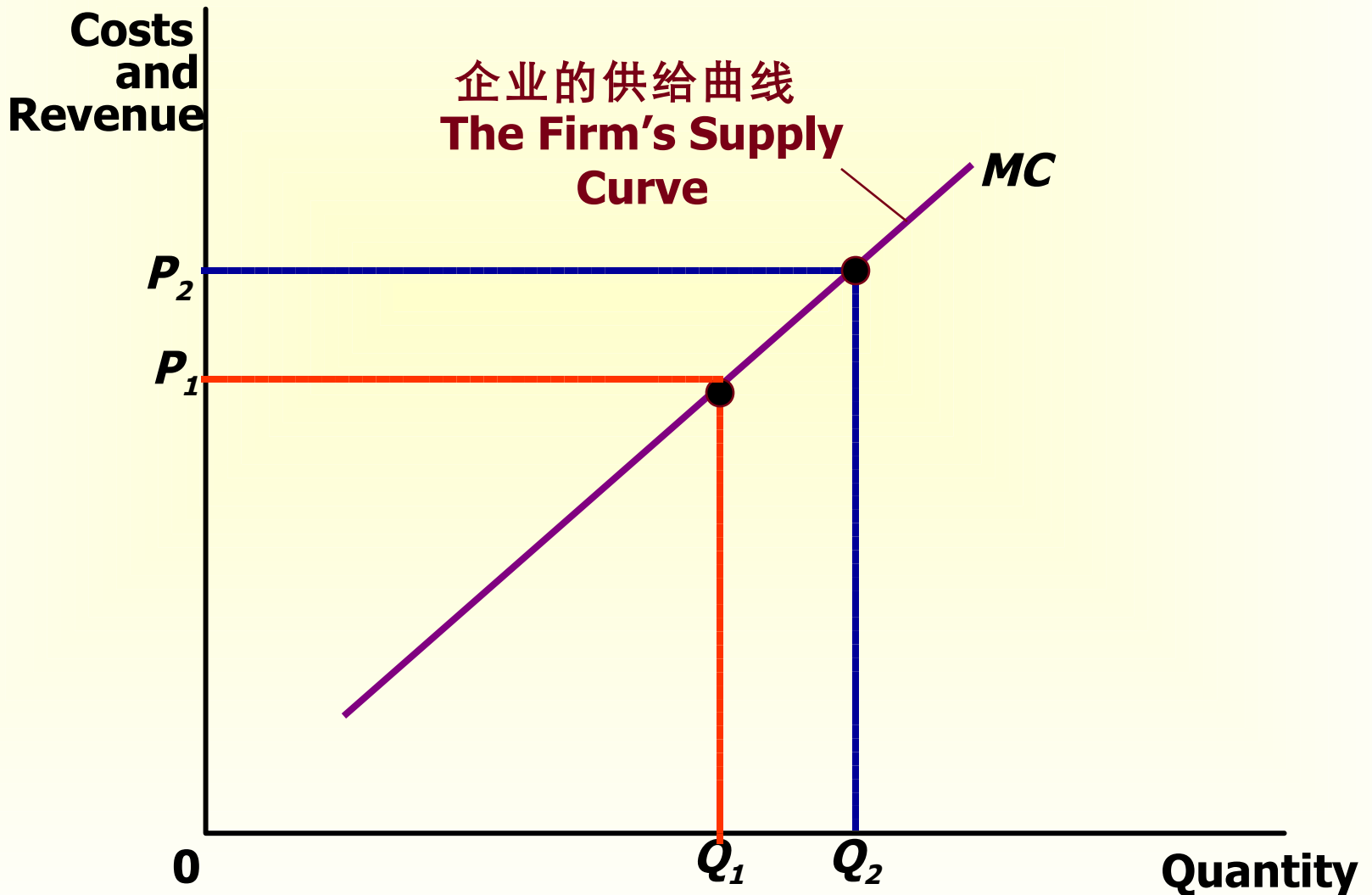
# **边际成本曲线和企业的供给曲线**

## ***The Marginal-Cost Curve and the Firm's Supply Decision...***

由于企业的边际成本曲线决定了企业在任何一种价格时愿意供给多少，因此，它就是竞争企业的供给曲线。 Because the firm's marginal-cost curve determines how much the firm is willing to supply at any price, it is the competitive firm's supply curve.

# 边际成本曲线和企业的供给曲线

## *The Marginal-Cost Curve and the Firm's Supply Decision...*



# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down

📖 **停止营业**指在某个特定时期，由于当前的市场条件而不生产任何东西的短期决策。

A **shutdown** refers to a short-run decision not to produce anything during a specific period of time because of current market conditions.

📖 **退出**指离开市场的长期决策。

**Exit** refers to a long-run decision to leave the market.

# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down

暂时停业的企业仍然需要支付固定成本。

A firm that shuts down temporarily still has to pay its fixed costs .

当做出是否停业的短期决策时，固定成本被称为沉没成本。

When a firm decides whether to shut down in a short run, its fixed costs are *sunk costs*.

# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down

🌀 沉没成本 是已经发生而且无法回收的成本  
。 **Sunk**

**costs** are costs that have already been committed and cannot be recovered.

🌀 沉没成本 是机会成本的反面：无论你有什么选择，沉没成本不可避免。

In a sense, a **sunk cost** is the opposite of an **opportunity cost**: it cannot be avoided, regardless of the choice you make.

# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down

✎ 如果生产得到的收益小于生产的可变成本时，企业就停止营业。

The  
firm shuts down if the revenue it gets  
from producing is less than the variable  
cost of production.

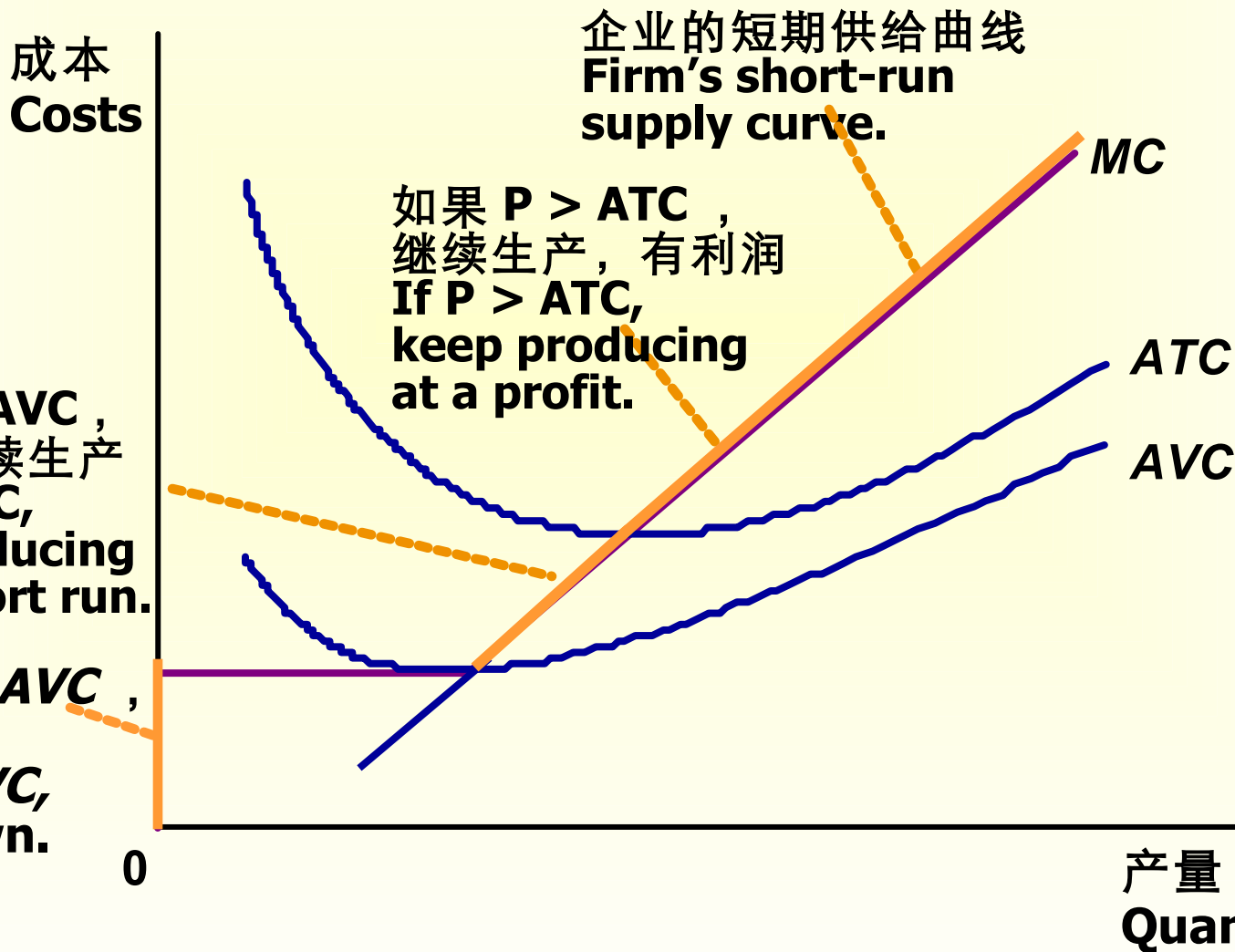
如果  $TR < VC$  , 停业 ( Shut down if  $TR < VC$  )

如果  $TR/Q < VC/Q$  , 停业 ( Shut down if  $TR/Q < VC/Q$  )

如果  $P < AVC$  , 停业 ( Shut down if  $P < AVC$  )

# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down



# 企业的短期停业决策

## The Firm's Short-Run Decision to Shut Down

竞争企业短期供给曲线是边际成本曲线在平均可变成本曲线以上的那一部分。 The portion of the marginal-cost curve that lies above average variable cost is the competitive firm's short-run supply curve.



# 企业进入或退出市场的长期决策

## The Firm's Long-Run Decision to Exit or Enter a Market

在长期中，退出的企业既可以节省固定成本，又可以节省可变成本。

In the long-run, a firm that exits the market saves both its fixed and its variable costs.

如果从生产中得到的收益将小于它的总成本，企业就退出。

The firm exits if the revenue it would get from producing is less than its *total* cost.

如果  $TR < TC$  , 退出 (Exit if  $TR < TC$  )

如果  $TR/Q < TC/Q$  , 退出 (Exit if  $TR/Q < TC/Q$  )

如果  $P < ATC$  , 退出 (Exit if  $P < ATC$  )

# 企业进入或退出市场的长期决策

## The Firm's Long-Run Decision to Exit or Enter a Market

如果有利可图，企业就将进入这一市场。

A firm will enter the industry if such an action would be profitable.

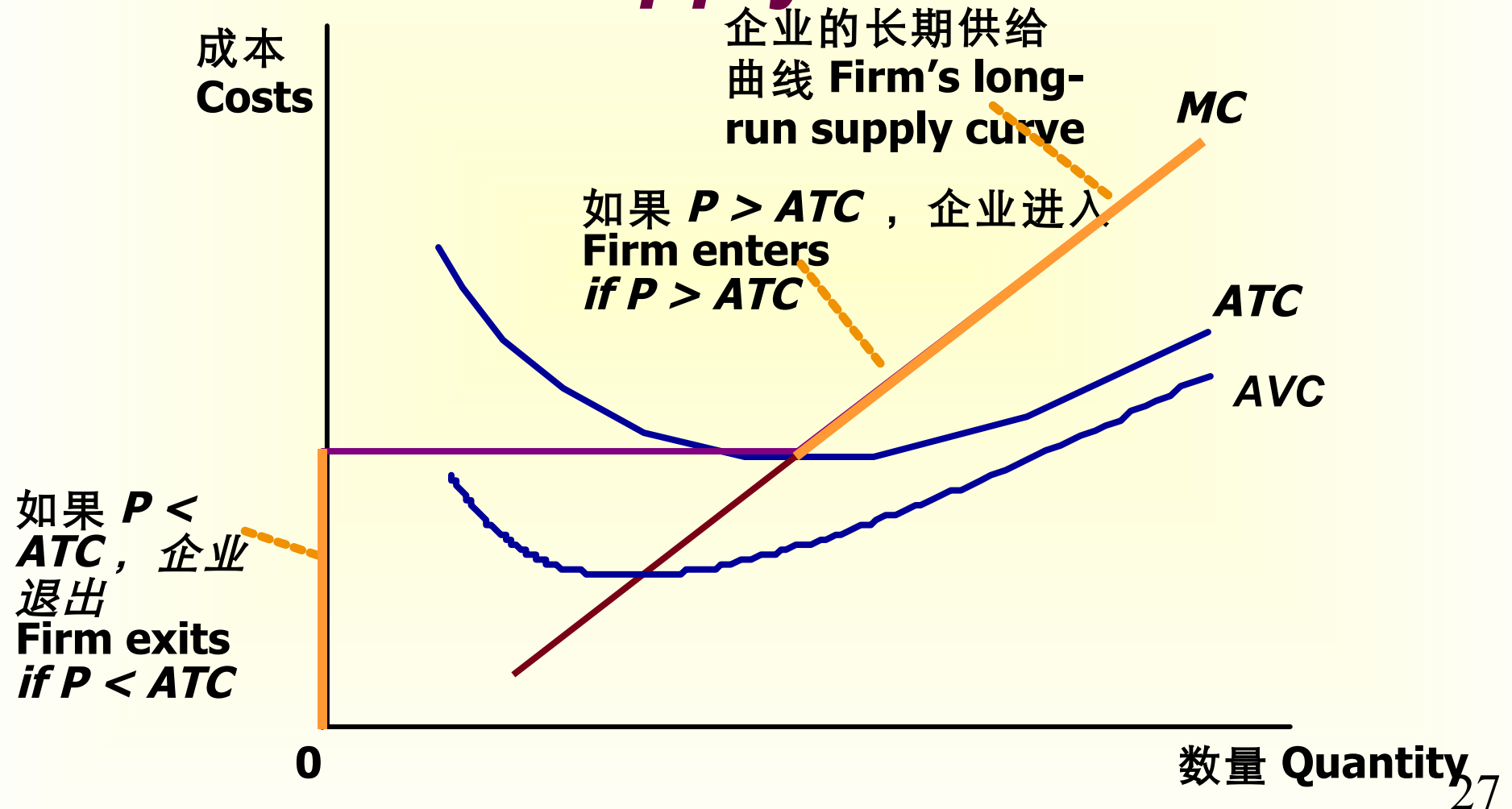
如果  $TR > TC$  ， 进入 (Enter if  $TR > TC$ )

如果  $TR/Q > TC/Q$  ， 进入 (Enter if  $TR/Q > TC/Q$ )

如果  $P > ATC$  ， 进入 (Enter if  $P > ATC$ )

# 竞争企业的长期供给曲线

## The Competitive Firm's Long-Run Supply Curve...



# 竞争企业的长期供给曲线

## The Competitive Firm's Long-Run Supply Curve

竞争企业的长期供给曲线是边际成本曲线位于平均总成本曲线之上的那一部分。

The competitive firm's long-run supply curve is the portion of its marginal-cost curve that lies above average total cost.

# 企业的短期和长期供给曲线

## The Firm's Short-Run and Long-Run Supply Curves

### 短期供给曲线 Short-Run Supply Curve

边际成本曲线在平均可变成本曲线以上的那一部分。

The portion of its marginal cost curve that lies above average variable cost.

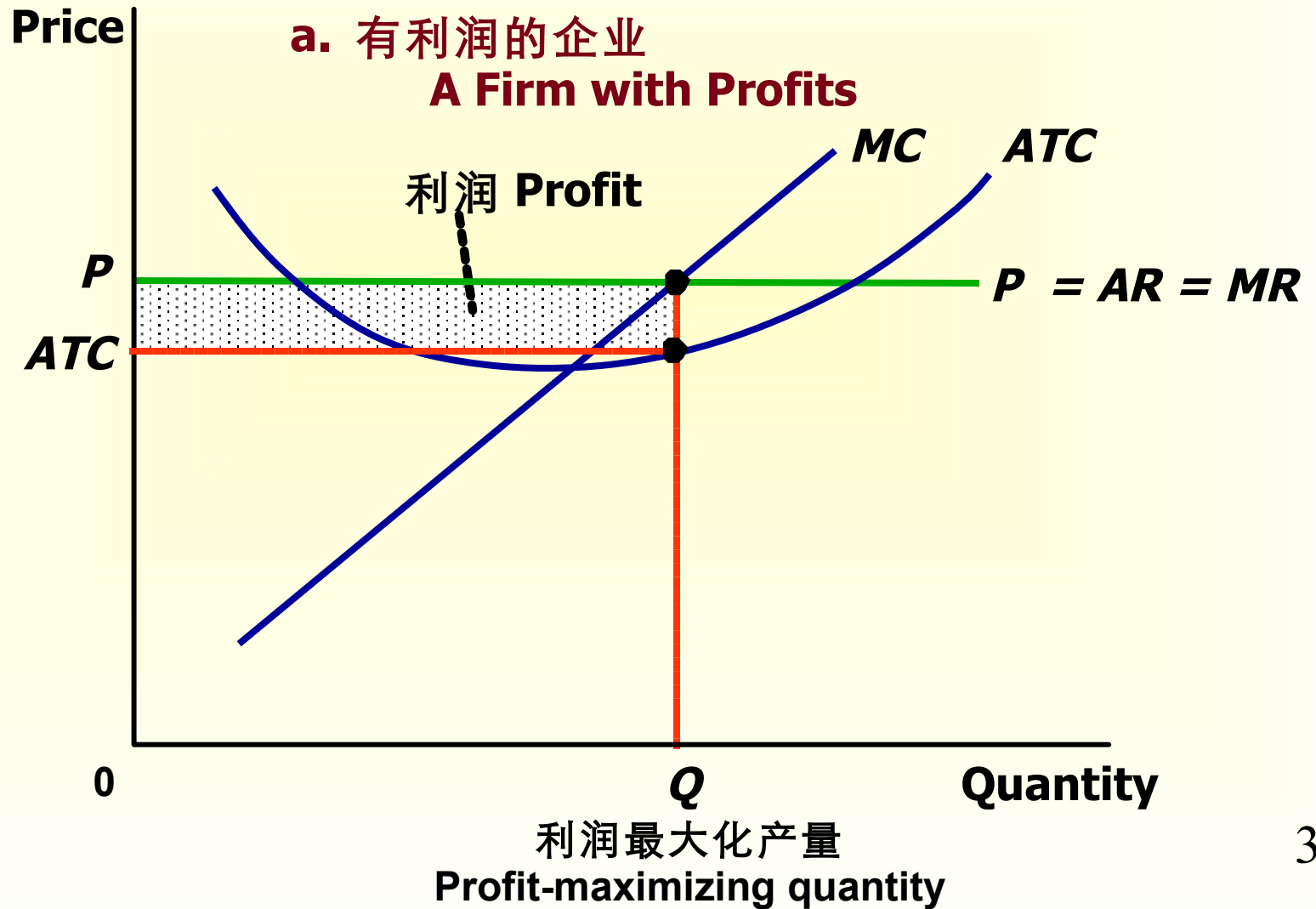
### 长期供给曲线 Long-Run Supply Curve

边际成本曲线在平均总成本曲线最低点以上的那一部分。

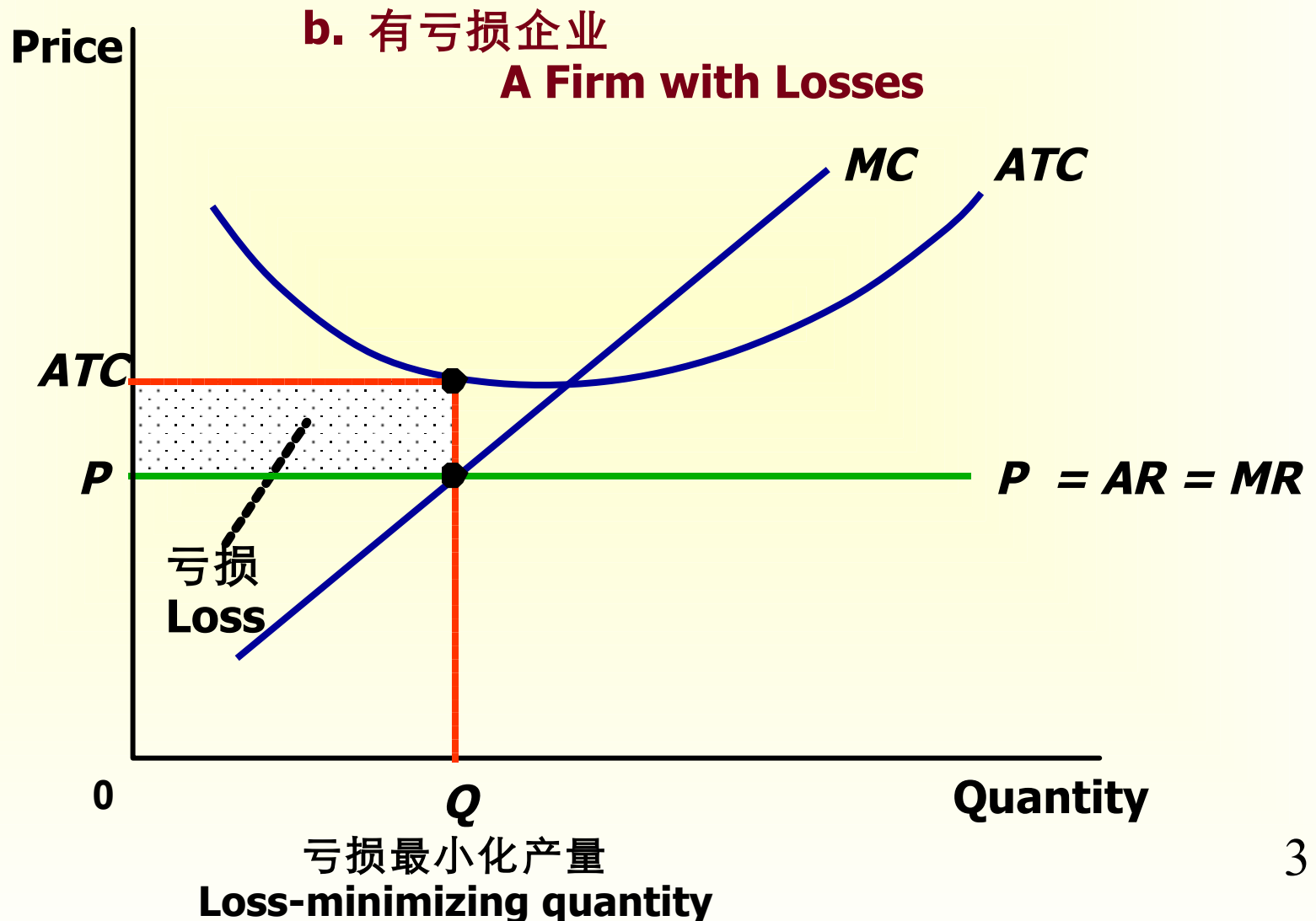
The marginal cost curve above the minimum point of its average total cost

# 用图形来衡量竞争企业的利润

## Measuring Profit in the Graph for the Competitive Firm...



# 用图形来衡量竞争企业的利润 Measuring Profit in the Graph for the Competitive Firm...



# 竞争市场中的供给

## Supply in a Competitive Market

市场供给等于市场中各个企业供给量的总和。

Market supply equals the sum of the quantities supplied by the individual firms in the market.



# 短期：有固定数目企业的市场

## The Short Run: Market Supply with a Fixed Number of Firms

在任何一种既定价格上，每个企业供给使边际成本等于价格的产量。

For any given price, each firm supplies a quantity of output so that its marginal cost equals price.

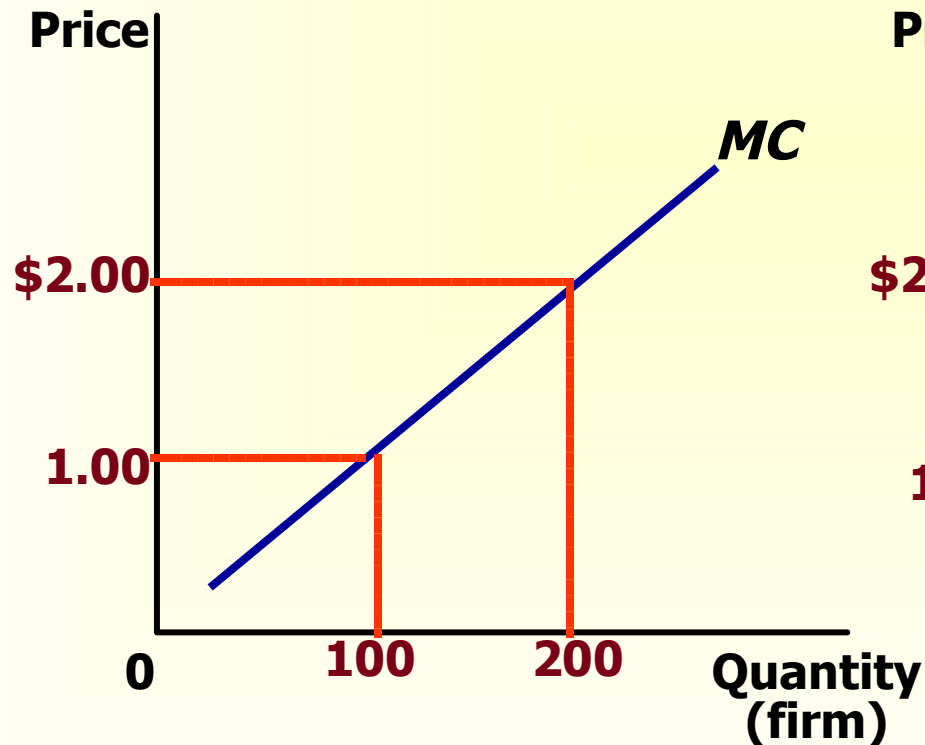
市场供给曲线反映了个别企业的边际成本曲线。

The market supply curve reflects the individual firms' marginal cost curves.

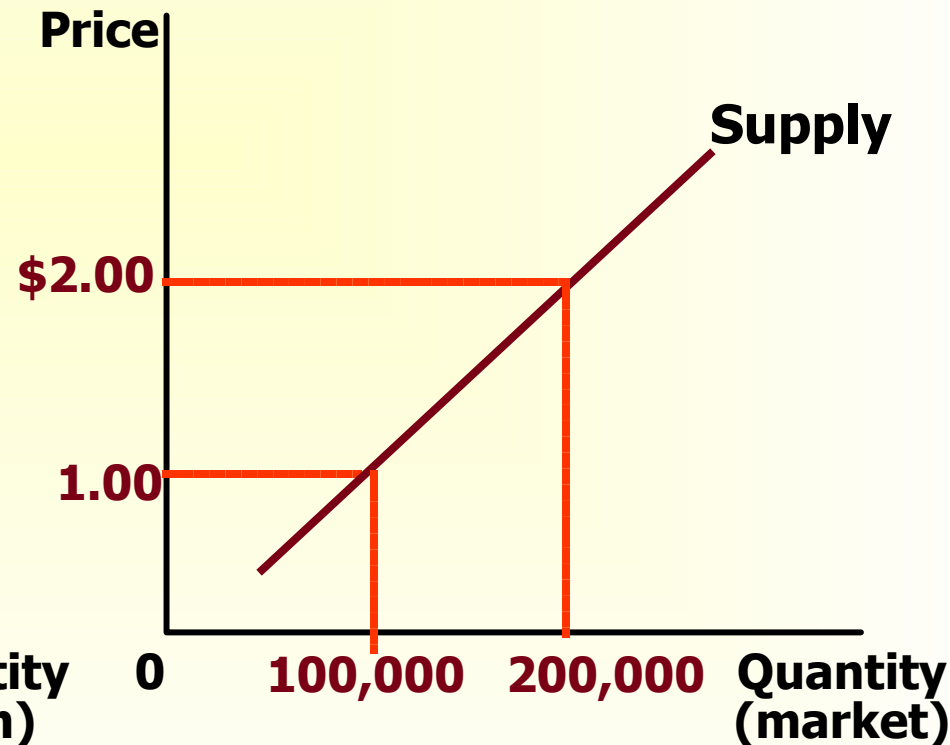
# 短期：有固定数目企业的市场

## *The Short Run: Market Supply with a Fixed Number of Firms...*

(a) 个别企业供给  
Individual Firm Supply



(b) 市场供给  
Market Supply



# 长期：有进入和退出的市场供给

## The Long Run: Market Supply with Entry and Exit

假定所有企业和潜在企业都有同样的成本曲线。 Suppose that all firms and all potential firms have the same cost curves.

企业将进入或退出市场，直到利润被推向零。

Firms will enter or exit the market until profit is driven to zero.

只有当价格与平均总成本被推向相等时，进入与退出过程才结束。

The process of entry & exit ends only when price and average total cost are driven to equality.

# 长期：有进入和退出的市场供给

## The Long Run: Market Supply with Entry and Exit

因为价格既要等于边际成本又要等于平均总成本，因此企业必然在其有效率规模处生产。

Because price is to equal both marginal cost and average cost, firms must operate at their efficient scale.

在长期，价格等于平均总成本的最小值。

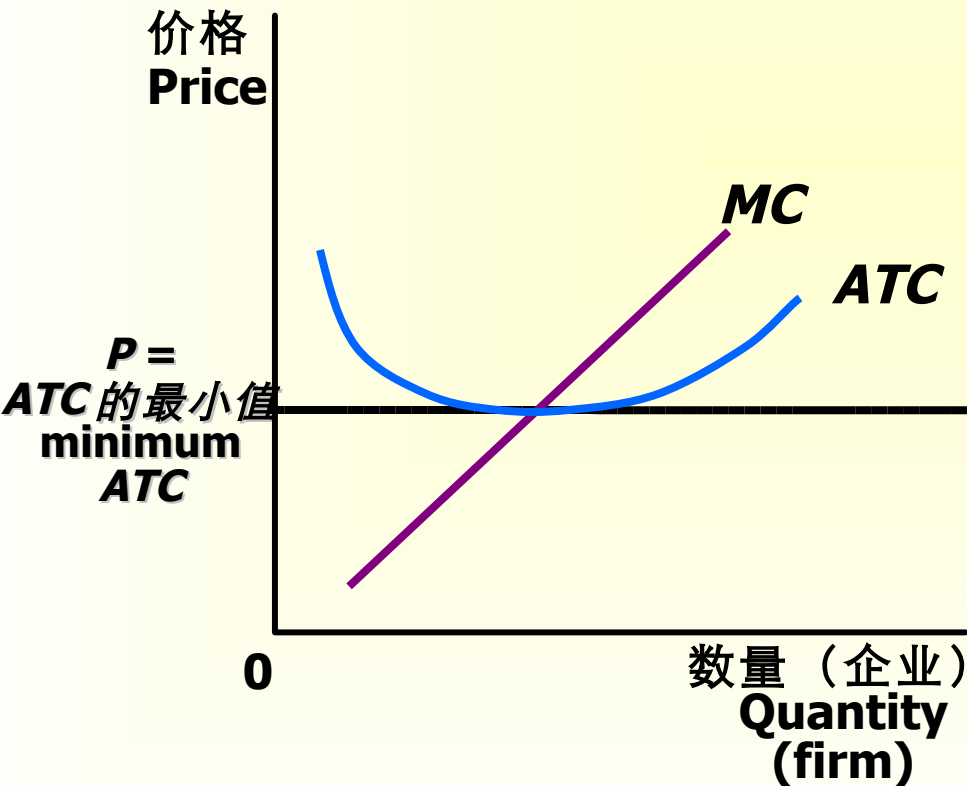
In the long run, price equals the minimum of average total cost.

长期市场供给曲线是一条在此价格上的水平线

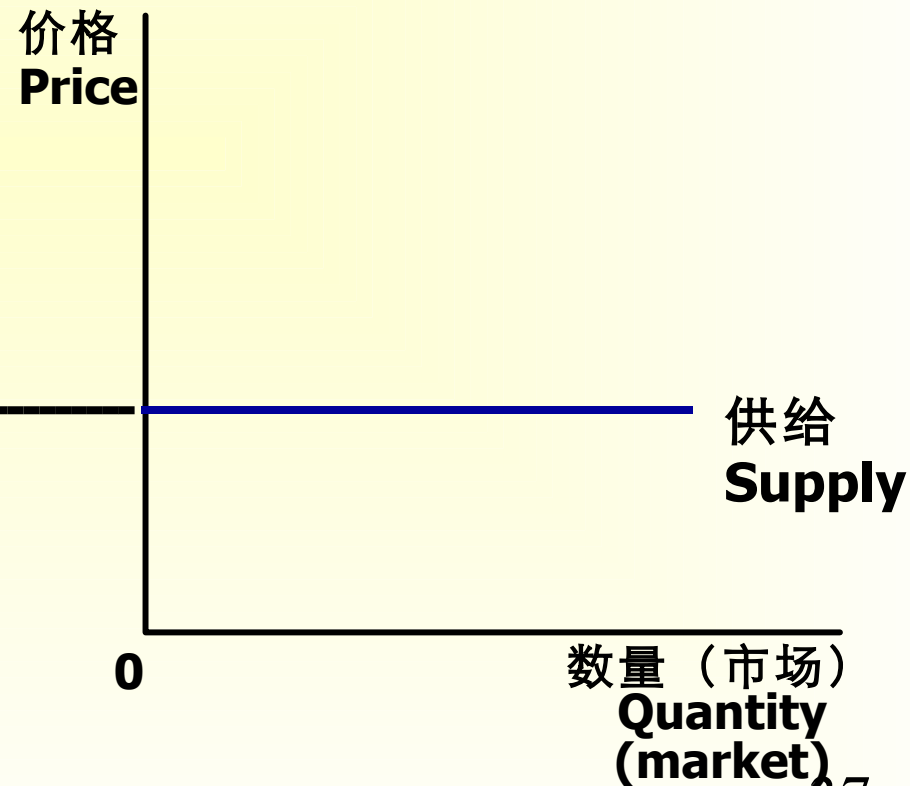
The long-run market

# 长期：有进入和退出的市场供给 *The Long Run: Market Supply with Entry and Exit...*

(a) 企业的零利润条件  
Firm's Zero-Profit Condition



(b) 市场供给  
Market Supply



# 需求的增加在短期内和长期内的影响

## Increase in Demand in the Short Run and in the Long Run

因为企业在长期可以进入和退出，而在短期却不能，因此市场对于需求变动的反应依赖于时间范围。

Because firms can enter and exit in the long run but not in the short run, the response of a market to a change in demand depends on the time horizon.

# 需求的增加在短期内和长期内的影响

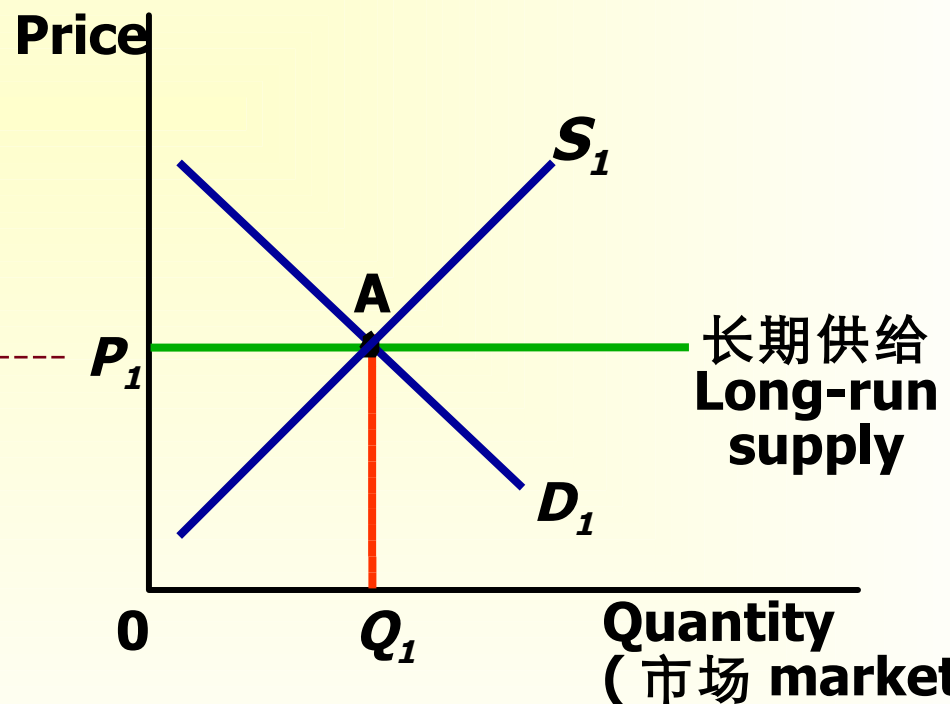
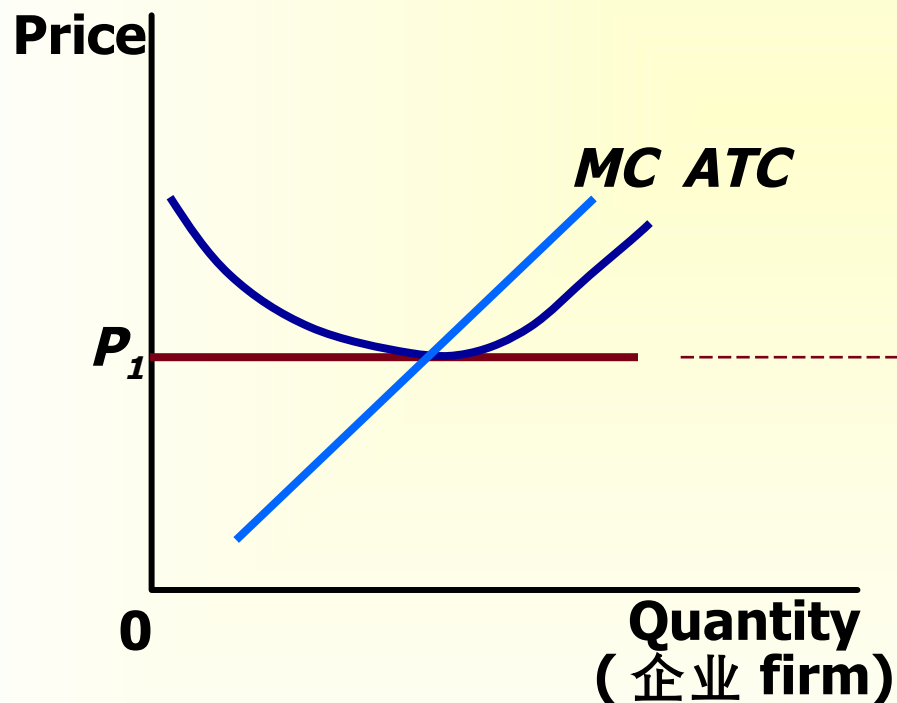
## *Increase in Demand in the Short Run and in the Long Run*

(a) 初始条件

Initial Condition

企业 Firm

市场 Market



# 而求的增加在短期内和长期内的影响

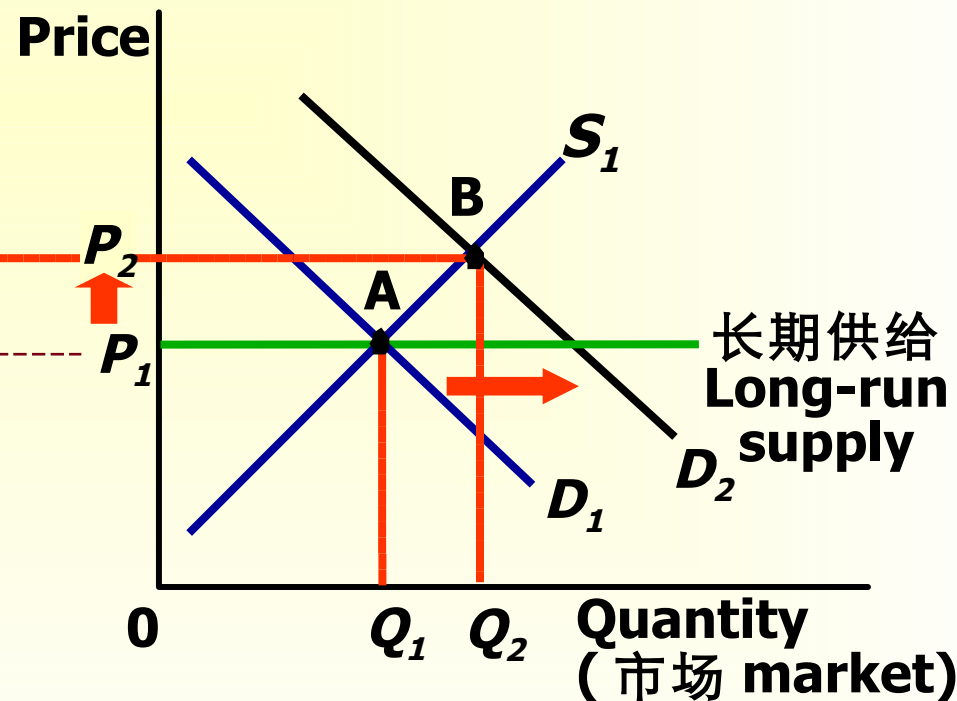
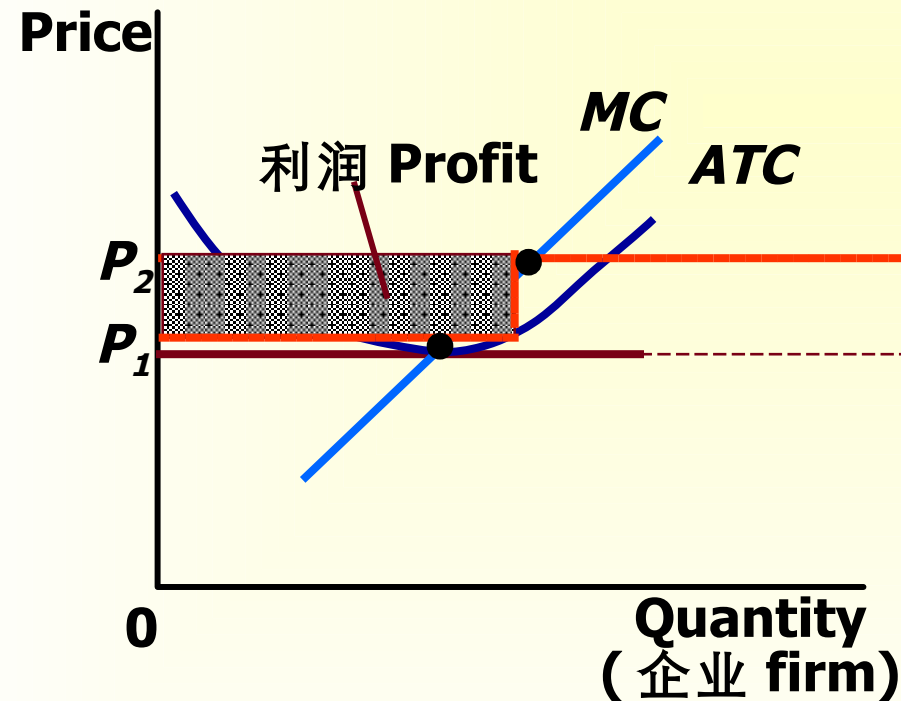
## *Increase in Demand in the Short Run and in the Long Run*

(b) 短期反应

Short-Run Response

Firm 企业

市场 Market





# 需求的增加在短期内和长期内的影响

## Increase in Demand in the Short Run and in the Long Run

需求的增加在短期内提高价格并增加数量。

An increase in demand raises price and quantity in the short run.

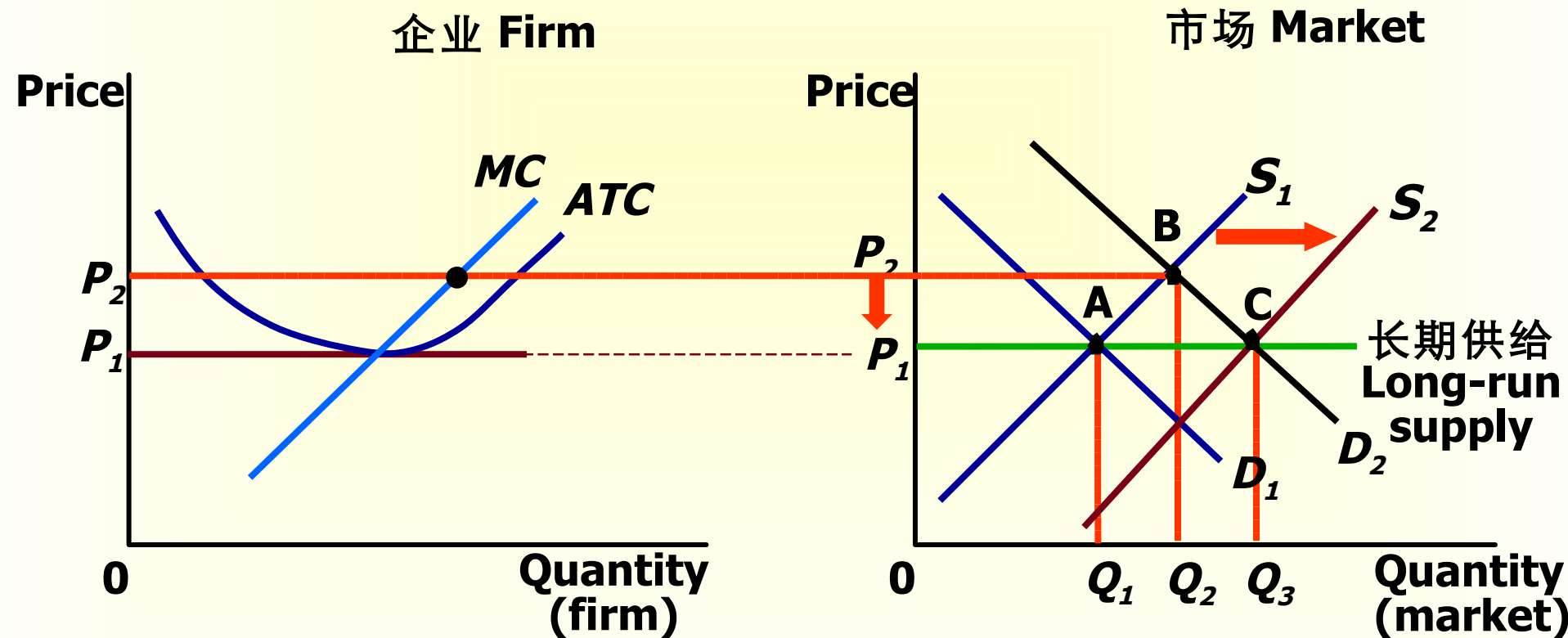
企业赚到正利润，因为价格现在高于平均总成本。

Firms earn profits because price now exceeds average total cost.

# 需求的增加在短期内和长期内的影响

## *Increase in Demand in the Short Run and in the Long Run*

### (c) 长期反应 Long-Run Response



# 需求的增加在短期内和长期内的影响

## Increase in Demand in the Short Run and in the Long Run

ㄣ 随着时间的推移，这个市场的利润鼓励新企业进入。 Over time, the profit in this market encourages new firms to enter.

ㄣ 随着企业数量和供给的增加，市场价格下降。 As the number of firms grows, the price falls.

ㄣ 最后，价格又向下回到最低平均总成本，利润是零，而且，企业停止进入。

Eventually, the price is driven back down to the minimum of average total cost, profits are zero, and firms stop entering.

ㄣ 每个企业仍然在其有效率规模处生产，但是，企业的数目、市场的产量和销售量都提高了。

Each firm is again producing at its efficient scale, but the number of firms, the quantity produced and sold are both higher.

# 为什么企业获得零利润还在经营？ Why Firms Stay in Business with Zero Profit?

📖 利润等于总收益减总成本。

Profit equals total revenue minus total cost.

📖 总成本包括企业的所有机会成本。

Total cost includes all the opportunity costs of the firm.

📖 在零利润均衡时，企业的收益应该补偿所有者维持经营的时间和金钱。

In the zero-profit equilibrium, the firm's revenue compensates the owners for the time and money they expend to keep the business going.

📖 经济利润不同于会计利润。

Economic profits differ from accounting profits.

# 为什么长期供给曲线可能向右上方倾斜

## Why the Long-Run Supply Curve Might Slope Upward

✎ 一些用于生产的资源数量可能是有限的。

Some resources used in production may be available only in limited quantities.

✎ 企业可能有不同的成本。

Firms may have different costs.

# 边际企业

## Marginal Firm

**边际企业**是如果价格稍有下降就退出市场的企业。

The **marginal firm** is the firm that would exit the market if the price were any lower.

# 总结

## Summary

由于竞争企业是价格接受者，所以它的收益与产量是同比例的。

Because a competitive firm is a price taker, its revenue is proportional to the amount of output it produces.

物品的价格等于企业的平均收益和边际收益。

The price of the good equals both the firm's average revenue and its marginal revenue.

# 总结

## Summary

为了利润最大化，企业选择使边际收益等于边际成本的产量。

To maximize profit a firm chooses the quantity of output such that marginal revenue equals marginal cost.

这也是使价格等于边际成本的产量。

This is also the quantity at which price equals marginal cost.

因此，企业的边际成本曲线是它的供给曲线。 Therefore, the firm's marginal cost curve is its supply curve.



# 总结

## Summary

✎ 在短期中，企业不能回收其固定成本，如果物品价格小于平均可变成本，企业将选择停止营业。

In the short run when a firm cannot recover its fixed costs, the firm will choose to shut down temporarily if the price of the good is less than average variable cost.

✎ 在长期中，企业能够回收其固定和可变成本，如果价格小于平均总成本，企业将选择退出。

In the long run when the firm can recover both fixed and variable costs, it will choose to exit if the price is less than average total cost.

# 总结

## Summary

- 在有自由进入与退出的市场上，长期中企业利润为零，所有企业在有效规模点生产。  
In a market with free entry and exit, profits are driven to zero in the long run and all firms produce at the efficient scale.
- 需求变动在不同时间范围之内有不同影响。  
Changes in demand have different effects over different time horizons.