

Chapter 15

Entry, Exit, and Long- Run Profitability

1. Revenues, Costs, and Economic Profits
2. Free Entry and Exit in the Long Run
3. Barriers to Entry

Chapter 15 (1 of 4)

Assess your business's economic profitability:

- Economic profit versus accounting profit
- Average revenue, average costs, and your profit margin



1. Revenues, Costs, and Economic Profits
2. Free Entry and Exit in the Long Run
3. Barriers to Entry

Scenario 1

Scenario: You are working as the manager of a coffee shop, and, after having gained a few years of experience, you are now considering opening your own coffee shop. You've made some forecasts as part of your business plan:

- You expect to earn **\$350,000** per year in **revenue**.
- You expect to incur **\$275,000** per year in business-related **expenses**.


Given this information, should you launch your startup?

The answer: *It depends!*

The best decision for you depends on your **opportunity costs!**

- For example, you will need to quit your current job and these **forgone wages** should be taken into consideration.

Only after considering **ALL the costs** (including your opportunity costs) can you determine whether it's worth starting a new business.



Pause for a moment and really think about this.

Economic Profit versus Accounting Profit (1 of 4)

Accounting profit: The total revenue a business receives, less its explicit financial costs.

Accounting profit = Total revenue – Explicit financial costs

Tracks all money that goes **in and out** of your business:

- **Total revenue** ☾ all income received from all sources
- **Explicit financial costs** ☾ all money that leaves your business
 - Rent, wages for employees, costs of your raw materials, electric bill, etc.

Answers the question, “Where did my money go last year?”

- It is the number at the bottom of your **profit-and-loss statement**.

Economic Profit versus Accounting Profit (2 of 4)

Economic profit: The total revenue a business receives, less **both explicit** financial costs and the entrepreneur's **implicit** opportunity costs.

Economic profit = Total revenue – Explicit financial costs – Entrepreneur's implicit opportunity costs

Key implicit opportunity costs:

- **Forgone wages:** If you don't launch this startup, how much will you earn pursuing your next best career option?
- **Forgone interest:** If you don't invest your funds in this startup, how much annual interest will you earn by investing it elsewhere?

The **sum of all your opportunity costs** can be thought of as the **annual payment you need** for it to be worth investing your time and money into starting a new business.

Answers questions such as, “**Is starting a business worth it?**” and “**Did I make the best decision?**”

Scenario 2

Coffee shop scenario:

- Expect to earn **\$350,000** per year in **revenue**.
- Expect to incur **\$275,000** per year in business-related **expenses**.
- **Current job** pays you **\$40,000** per year.
- **Invest \$30,000** into your coffee shop instead of keeping it in the bank where it's **earning 2% interest** per year.

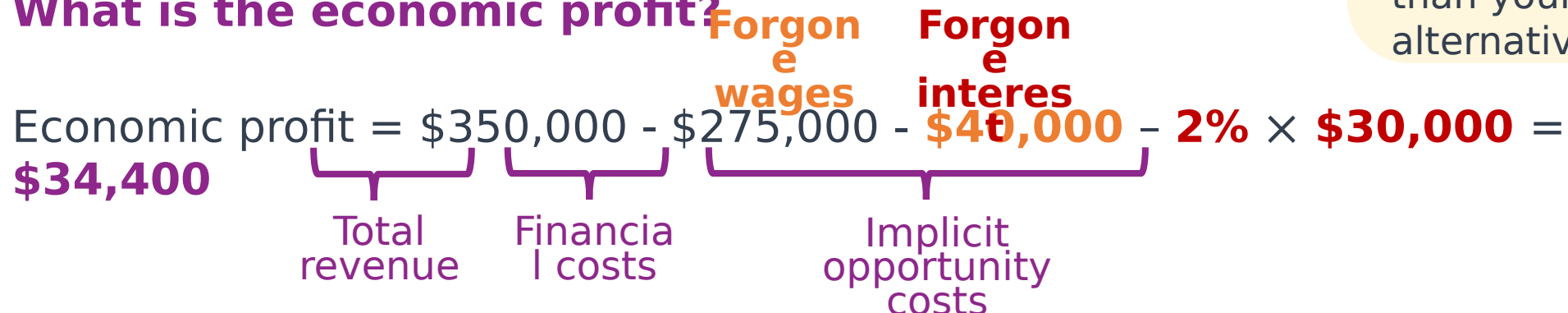
What is the accounting profit?

$$\text{Accounting profit} = \$350,000 - \$275,000 = \text{\textcolor{green}{\$75,000}}$$


Total revenue Financial costs

What is the economic profit?

$$\text{Economic profit} = \$350,000 - \$275,000 - \text{\textcolor{brown}{\$40,000}} - 2\% \times \text{\textcolor{red}{\$30,000}} = \text{\textcolor{purple}{\$34,400}}$$


Total revenue Financial costs Implicit opportunity costs
Forgone wages Forgone interest

Should you open your own coffee shop?

Yes! You will be **\$34,400** better off than your next best alternative.

Economic Profit versus Accounting Profit (4 of 4)

Accounting profit follows the money

Total revenue



Economic profit accounts for opportunity costs

Total revenue



Chart: © Worth Publishers

Concept Check: Economic Profit

Mariana is thinking of opening an ice cream shop. She forecasts revenues of **\$500,000** per year and explicit financial costs of **\$340,000**. She would need to quit her current job which pays **\$50,000** per year, plus an additional **\$10,000** worth of benefits. To get started, she needs to invest **\$50,000** in the store, forgoing **3%** bank interest per year.

- Calculate the **accounting profit**, **economic profit** and assess whether you would **advise** Mariana to launch this new business.

Accounting profit

0

$$\text{Economic Profit} = \$500,000 - \$340,000 - \$50,000 - \$10,000 - 3\% \times \$50,000$$

Advice: Yes, start the business.

Moving forward....

Chapter Goal: Evaluate when entrepreneurs should **enter** a market, or existing businesses should **exit**.

From this point forward...

“**Profit**” will always be referring to “**economic profit.**”

“**Costs**” will always include both **explicit** financial costs and **implicit** opportunity costs.

Up next...

Assess the profitability of a business based on two key metrics:

1. Average Revenue
2. Average Costs

Average Revenue

Your **average revenue** is your **revenue per unit**, calculated as the total revenue divided by the quantity supplied.

- Average revenue is **equal to the price** if you **charge everyone the same price**.

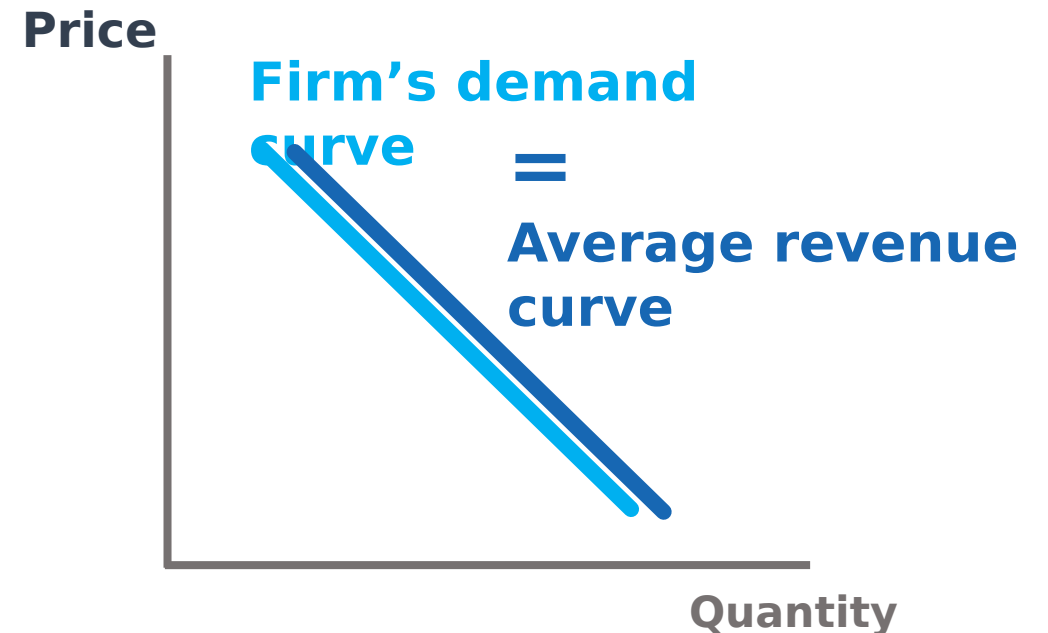
RECALL: Your **firm's demand curve** shows the price you can charge for any given quantity.

- **IMPLICATION:** Your **firm's demand curve** is also your **average revenue curve**.

$$\text{Average revenue} = \frac{\text{Total revenue}}{\text{Quantity}} = \text{Price}$$

Lemonade stand example: You charge \$0.50 per cup of lemonade. You sell 20 cups.

$$\text{Average revenue} = \frac{\$10}{20 \text{ cups}} = \$0.50$$



Average Cost

Your **average cost** is your **cost per unit**, calculated as your total costs (including fixed and variable costs) divided by the quantity produced.

$$\text{Average cost} = \frac{\text{Total cost}}{\text{Quantity}} = \frac{\text{Fixed cost}}{\text{Quantity}} + \frac{\text{Variable cost}}{\text{Quantity}}$$

Your **fixed cost** are the expenses that do NOT vary with the quantity you produce (hence, they are *fixed*).

- Includes the opportunity cost of entrepreneur's time and money.

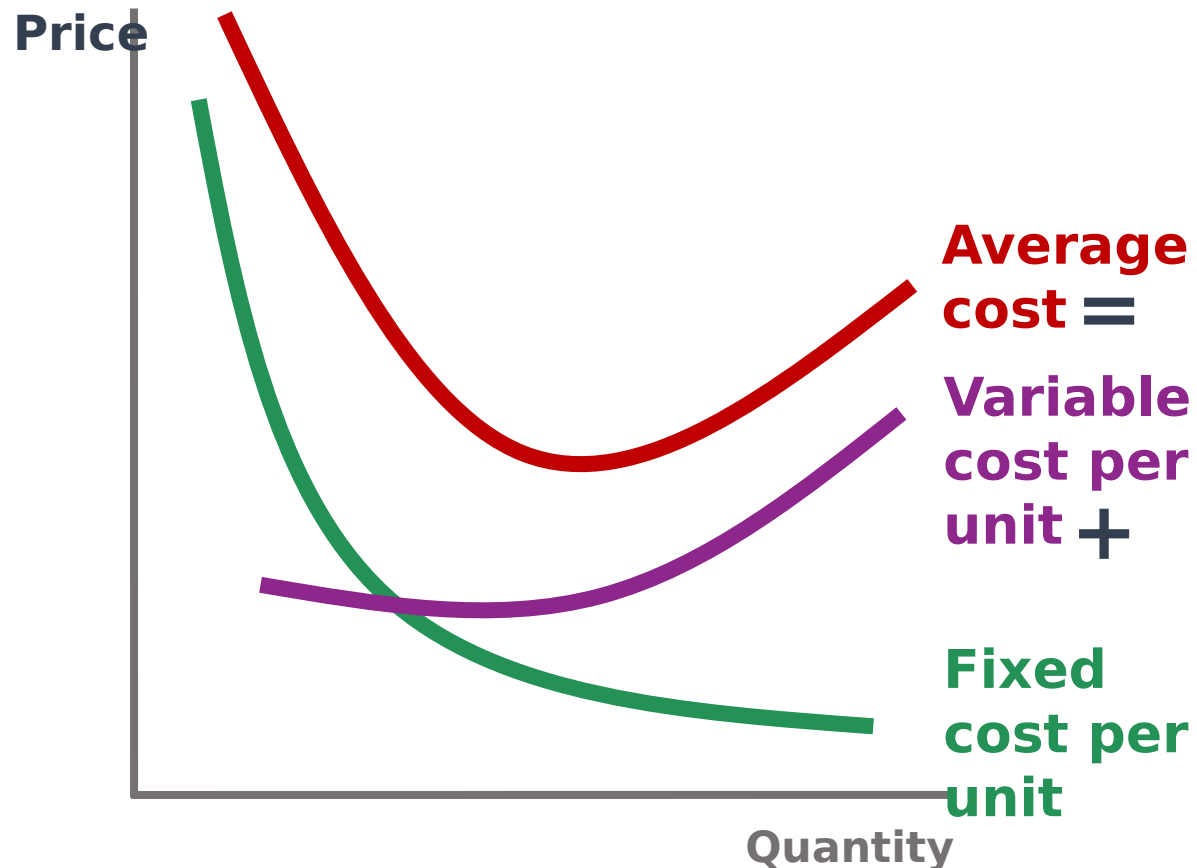
Examples: Cost of land, capital equipment, rent for your store front

Your **variable cost** are the expenses that do vary with the quantity you produce.

- Tracks the cost of variable inputs.

Examples: Raw materials and ingredients, electricity, worker time

Understanding the shape of the **average cost** curve (1 of 3)



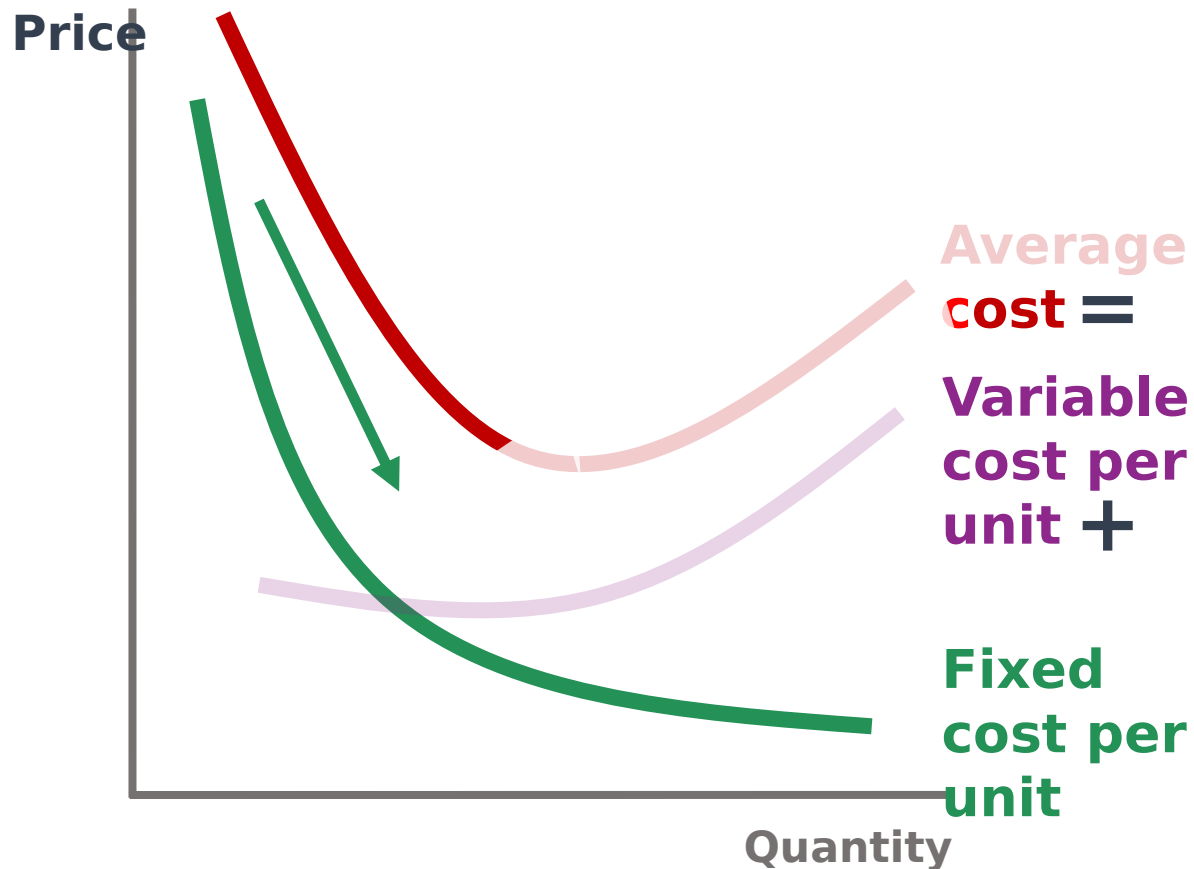
RECALL: The **average cost** is the sum of **fixed cost per unit** and **variable cost per unit**.

The **U-shape** of the **average cost** curve is a result of each component exerting its influence. Specifically:

1. The spreading of **fixed costs**
2. Rising **variable costs**

Let's discuss each influence in turn!

Understanding the shape of the **average cost curve** (2 of 3)



1. The spreading of **fixed costs**

Recall, **fixed costs** (like rent for your store) do NOT vary with output.

➤ **Example:** Monthly rent for store is \$6,000 regardless of how much you produce.

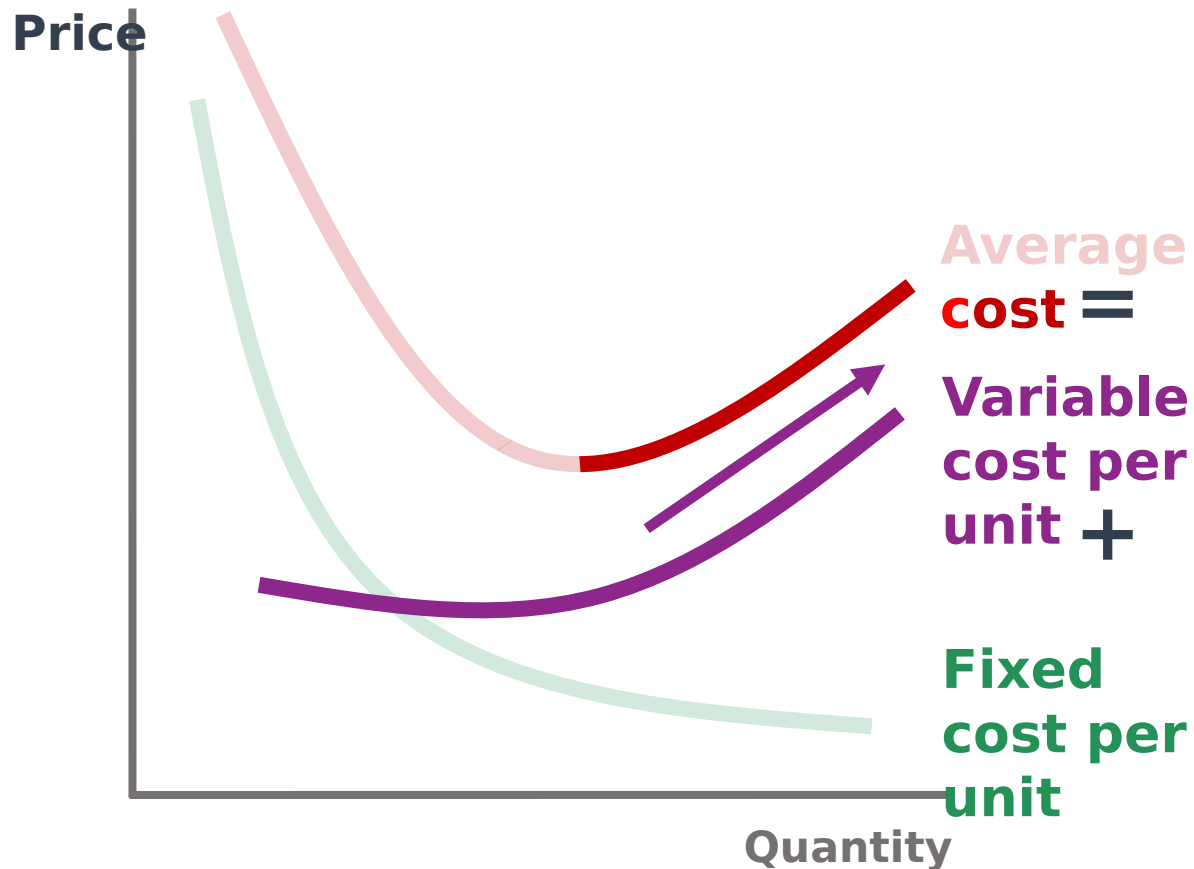
As you produce more and more, these **fixed costs** get “**spread**” over more and more units, so it becomes smaller on a per-unit basis.

Fixed cost per unit trend:

$$\begin{aligned}\frac{\$6,000 \text{ rent}}{1 \text{ unit}} &= \$6,000 \\ \frac{\$6,000 \text{ rent}}{2 \text{ units}} &= \$3,000 \\ \frac{\$6,000 \text{ rent}}{3 \text{ units}} &= \$2,000\end{aligned}$$

This continual decline in **fixed costs** per unit leads **average costs** to fall.

Understanding the shape of the **average cost curve** (3 of 3)



2. Rising **variable costs**

Rising variable costs reflect emerging inefficiencies:

- **Diminishing marginal product** reducing the productivity of your workers
 - Crowding
 - Coordination problems
 - Other inefficiencies
- **Rising input costs** per unit
 - Paying workers overtime

These rising **variable costs** lead your **average costs** to rise.

Profit Margins

Your **profit margin** per unit is the price less the average cost:

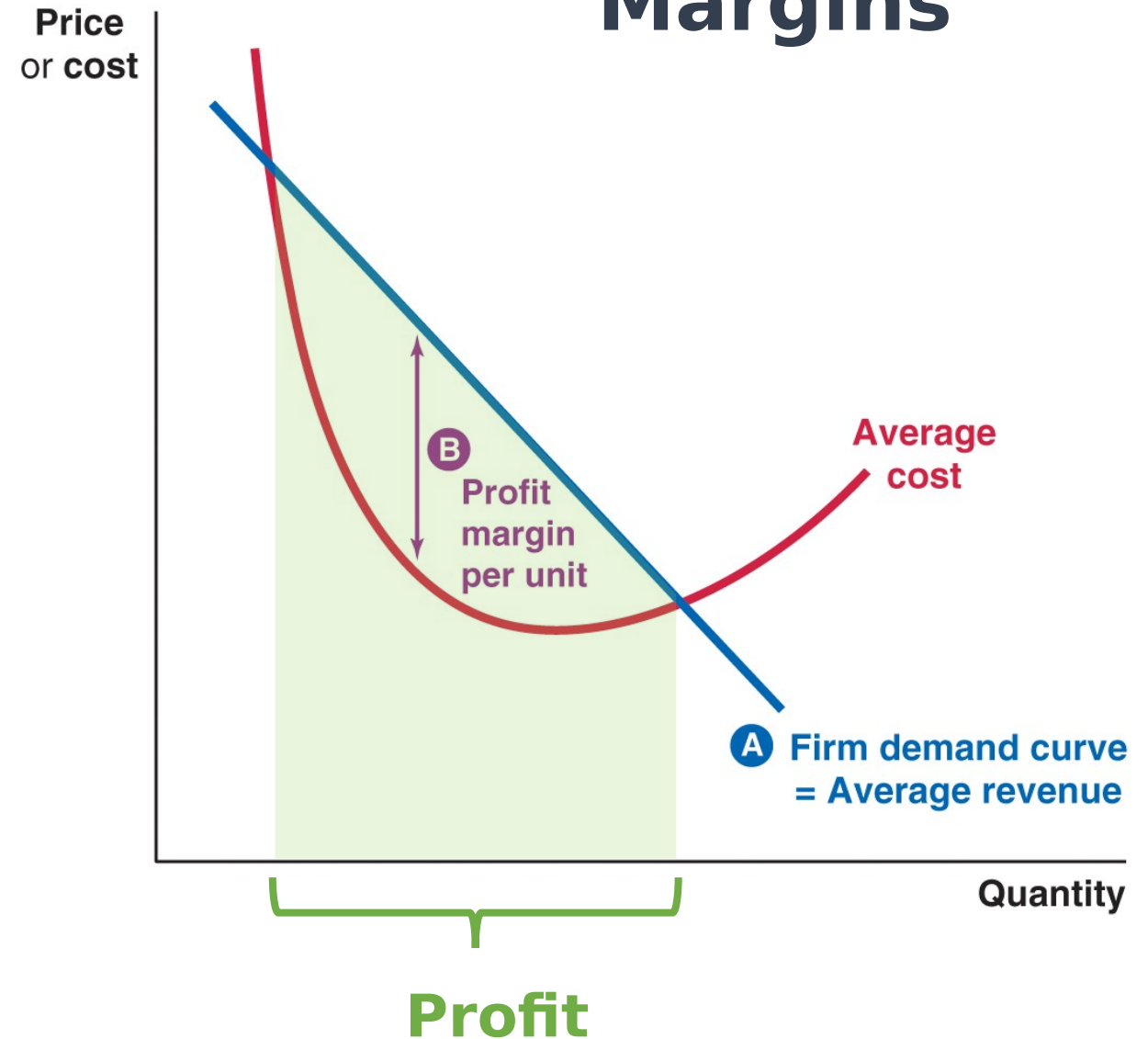
Profit margin = **Price** - Average cost

Profit margin = **Average revenue** - Average cost

- Recall your average revenue and your price are the same.

Visually, for any given quantity, your **profit margin** per unit is the **gap** between your **firm's demand curve** and its **average cost curve**.

HELPFUL HINT: There is **profit** anytime **demand** lies **above** the **average cost** curve!



Short run versus long run

How long is the long run? ☾ no simple answer.

Change plays out on different timelines in different industries.

Short run: The horizon over which...

1. production capacity cannot change.
2. the number and type of competitors you face cannot change.

Long run: The horizon over which...

1. you or your rivals may expand or shrink your production.
2. new suppliers may enter the market or existing suppliers may exit.

Short-run analysis ☾ deciding quantity given today's market price.

Long-run analysis ☾ planning how much to invest for a business expansion; launch decisions.

Key take-aways: Revenues, costs, and economic profits

Accounting profit

- Useful for tracking all money flowing in and out of your business
- Only includes explicit costs

Economic profit ☾ **USE THIS ONE!**

- Useful for deciding whether starting a new business is a good idea
- Included both explicit and implicit costs

Average revenue = Total revenue/Quantity = Price = Firm's demand curve

Average costs = Total costs/Quantity = (Fixed + Variable)/Quantity

You have **profit** when average revenue (i.e., demand) is **above** average costs.

Chapter 15 (2 of 4)

Forecast how new entrants will change long-run prices and profitability in your market:

- Entry and exit analysis
- Zero economic profit
- Price equals average cost



1. Revenues, Costs, and Economic Profits
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What would lead you to ENTER a specific market?

Cost-benefit principle: It's worth entering a new market if the **benefits exceed the costs.**

- **Benefits:** The *revenue* you will earn.
- **Costs:** *Explicit* financial costs and *implicit* opportunity costs (i.e., forgone wages and interest).
- **Economic profit** measures the difference between these benefits and costs!

Rational Rule for Entry: Enter a market if you expect to earn a **positive economic profit**, which occurs when the **price exceeds** your **average cost.**

- If there's an opportunity to earn an economic profit, then take it!

What would lead you to EXIT a specific market?

Cost-benefit principle: It's worth exiting a market if the **costs exceed the benefits**.

- **Benefits:** The *revenue* you will earn.
- **Costs:** *Explicit* financial costs, and *implicit* opportunity costs (i.e., forgone wages and interest).
- **Economic profit** measures the difference between these benefits and costs!

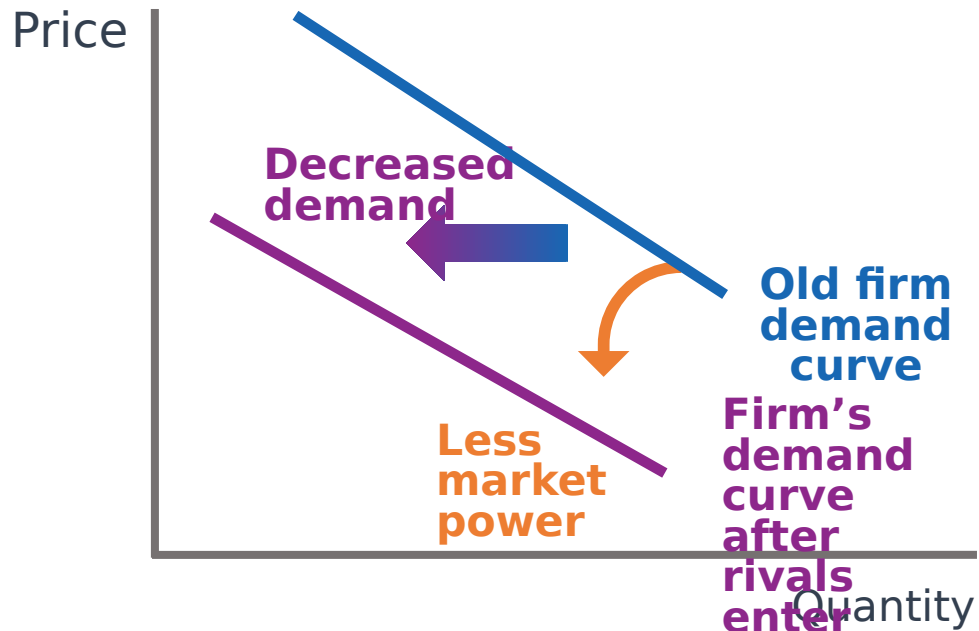
Rational Rule for Exit: Exit a market if you expect to earn a **negative economic profit**, which occurs when the **price** is **less than** your **average cost**.

- Exit any unprofitable markets.

Entering and Exiting (1 of 2)

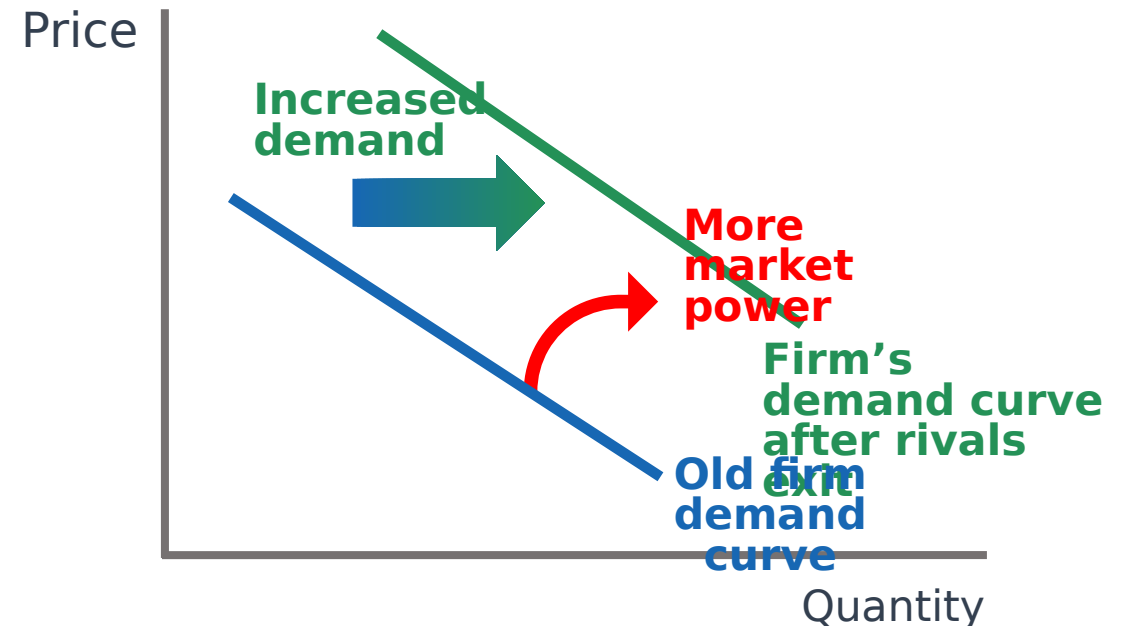
When a new competitor ENTERS...

- A. you'll lose customers. This **decrease in demand** shifts your **firm's demand curve left**.
 - **Result:** You sell a smaller quantity.
- B. you'll **lose market power**. This loss **flattens** your **firm's demand curve** (i.e., becomes more elastic).
 - **Result:** You sell at a lower price.



When an existing competitor EXITS...

- A. you'll gain customers. This **increase in demand** shifts your **firm's demand curve right**.
 - **Result:** You sell a larger quantity.
- B. you'll **gain market power**. This gain **steepens** your **firm's demand curve** (i.e., becomes more inelastic).
 - **Result:** You sell at a higher price.





Is the mere threat of entry sufficient to lower prices?

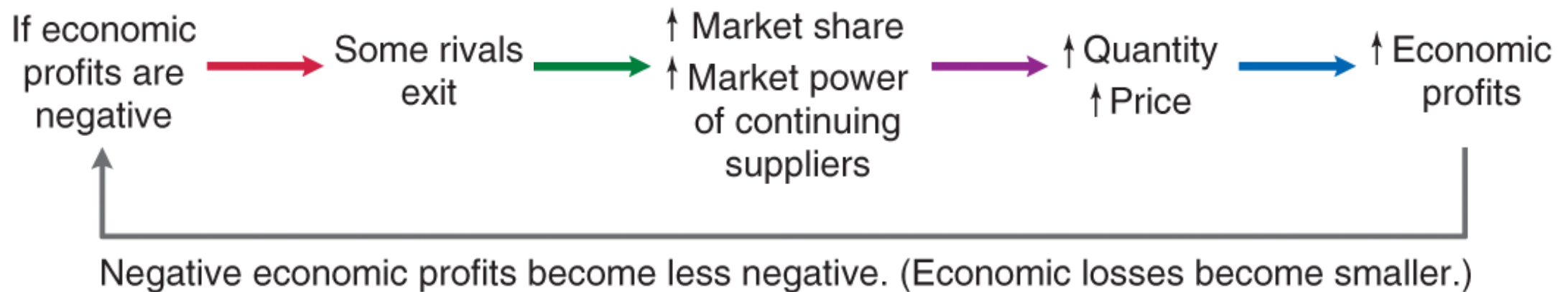
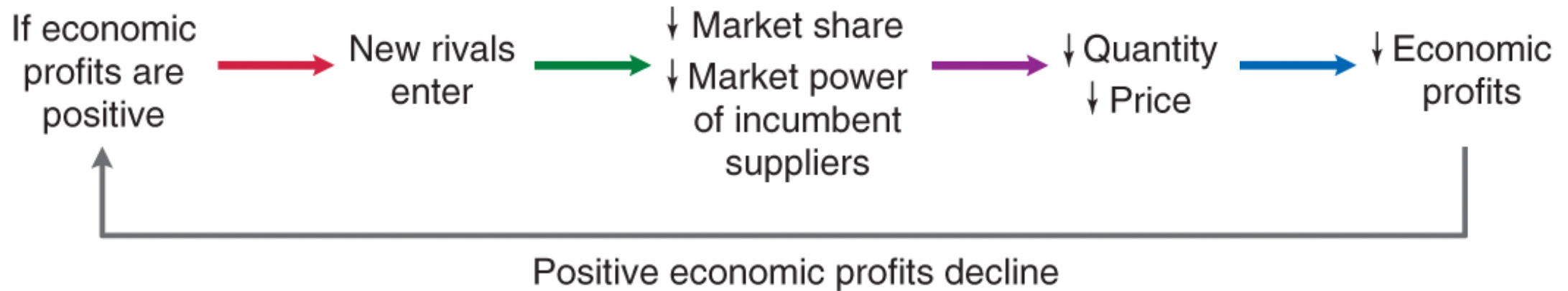
Southwest is an **aggressive discounter**. If Southwest enters a new market, then incumbent airlines like American, Delta, or United ultimately **cut their prices to compete**.

- On Southwest routes, incumbent airlines typically cut their prices by about **30%!**

Economists analyzed the prices of flights between any two cities where Southwest has base:

- Even if Southwest didn't offer service between two particular cities, rivals offered **large discounts on those routes**.
- **Just the threat** that Southwest will fly a route **causes prices to fall!**

Entry, exit, and your firm's profit



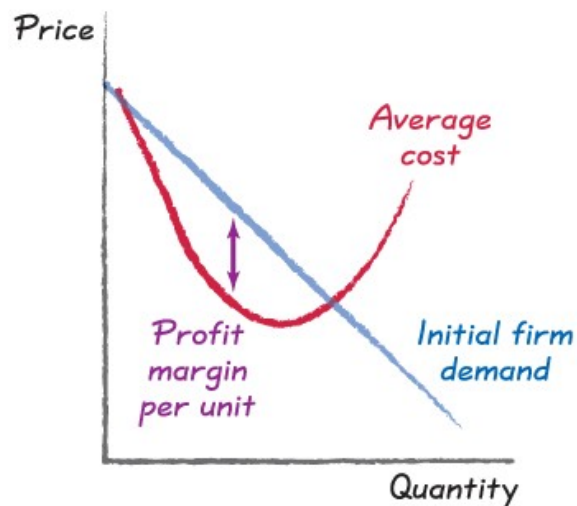
Entry and long-run profits:

New rivals will **enter** the market as long as economic **profits are positive**.

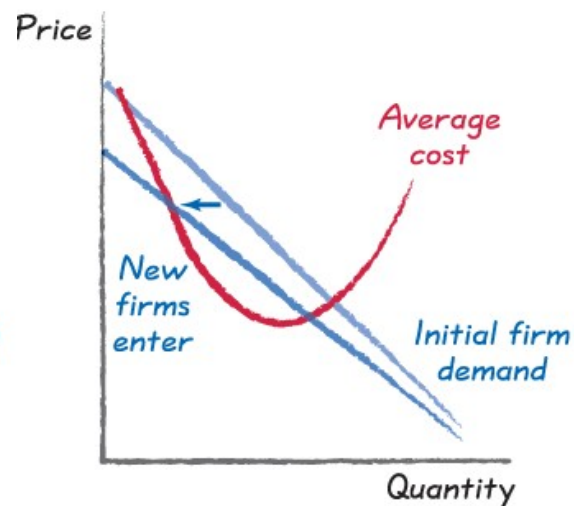
Each additional competitor **pushes profits down a bit** further.

Entry STOPS when there's no longer an incentive to enter ☾ when economic **profits are ZERO**.

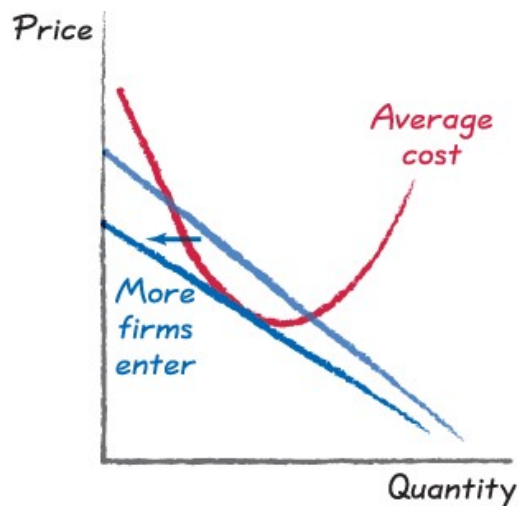
Short-run profits...



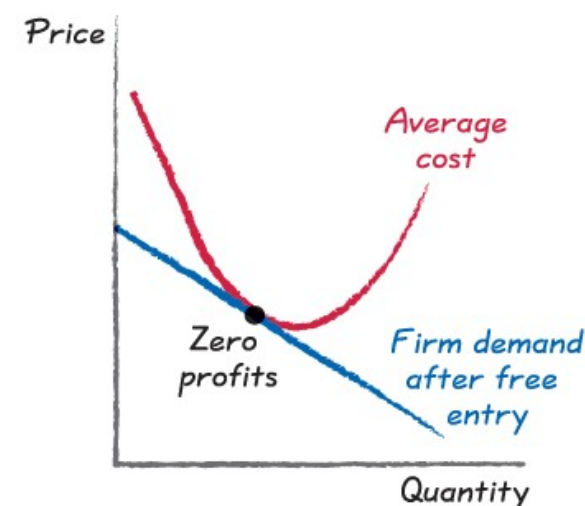
...lead new firms to enter...



...and they'll keep entering...



...until profits are zero.



Exit and long-run profits:

Incumbent firms will **exit** the market as long as economic **profits are negative**. Each additional exit will **bolster the profitability** of the **businesses that remain**. **Exit STOPS** when the market is no longer unprofitable ☾ when economic **profits are ZERO**.

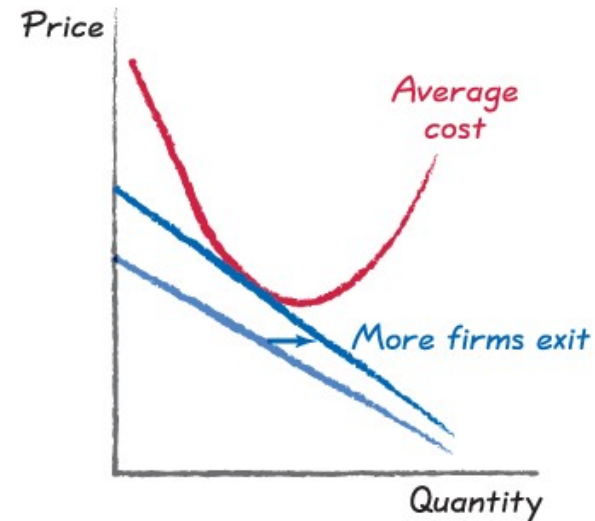
Short-run losses...



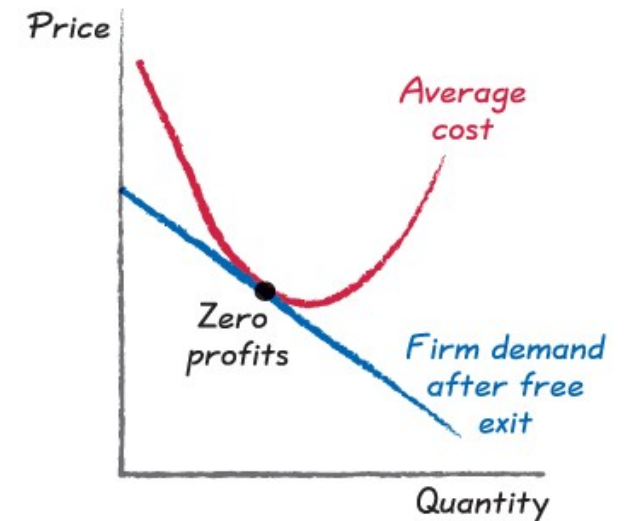
...lead incumbent firms to exit...



...and they'll keep leaving...



...until profits are zero.



Economic profits tend toward zero in the long run

RECAP:

- Free **entry** pushes economic profits down to zero in the long run.
- Free **exit** ensures your market won't remain unprofitable in the long run.

Altogether, the dynamics of free entry and exit push economic profits to **zero in the long run**.

- Zero economic profits **aren't bad** (just not great).
- You're **doing just as well** running this business as in your **next best alternative**.

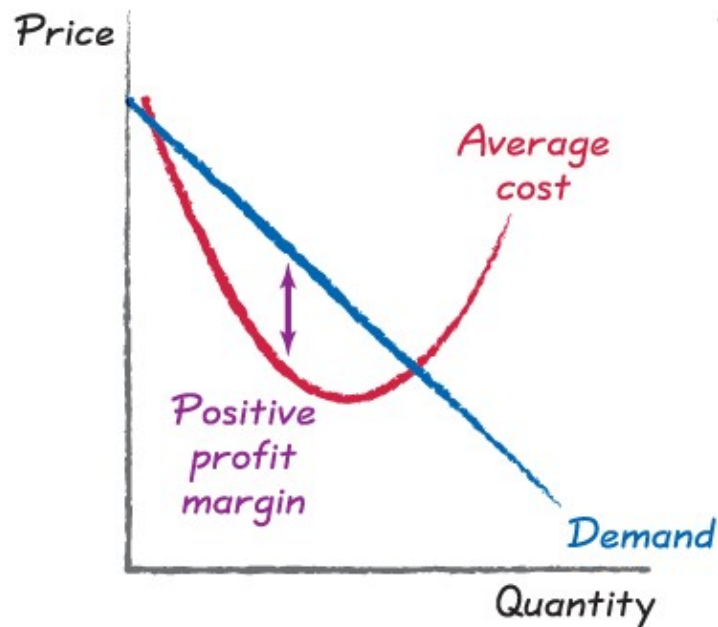
Big Picture: Free entry tends to eliminate especially desirable opportunities.

- Checkout lines at the grocery store; discovery of a great restaurant; real estate and neighborhoods

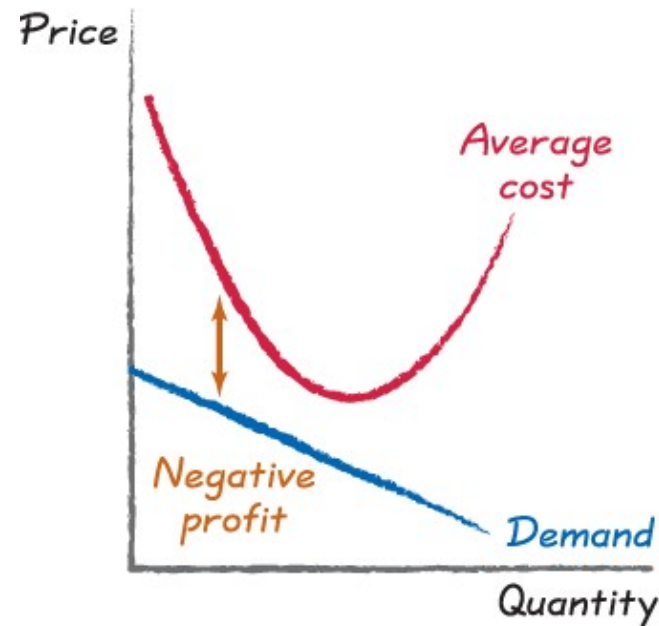
In the long run, price equals average cost. (1 of 2)

Free entry and exit push economic profits to zero in the long run.

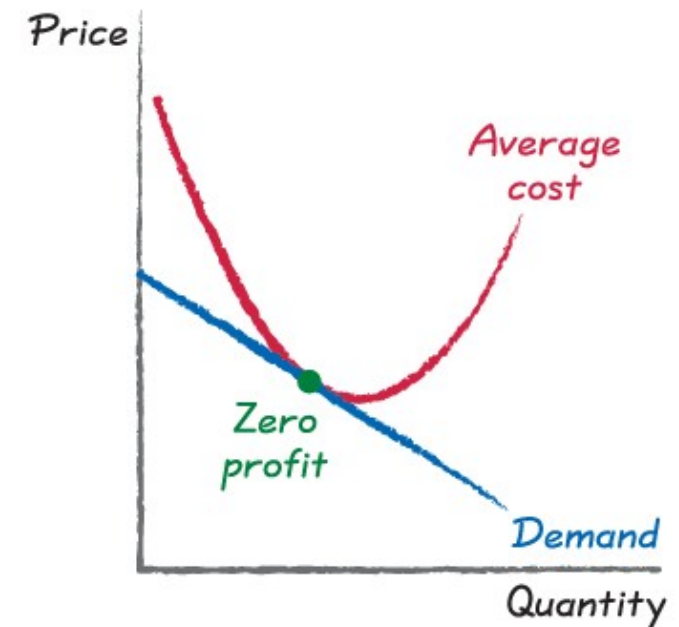
If demand **crosses** average cost, economic profit will induce **entry**.



When demand **lies entirely below** average cost, the negative profits will induce **exit**.



Zero profit occurs at the point where demand **just touches** average costs — long-run equilibrium!



In the long run, price equals average cost. (2 of 2)

Free entry and exit push economic profits to zero in the long run.

RECALL: Your firm's **demand** curve is also your **average revenue** curve, which is equal to the **price**.

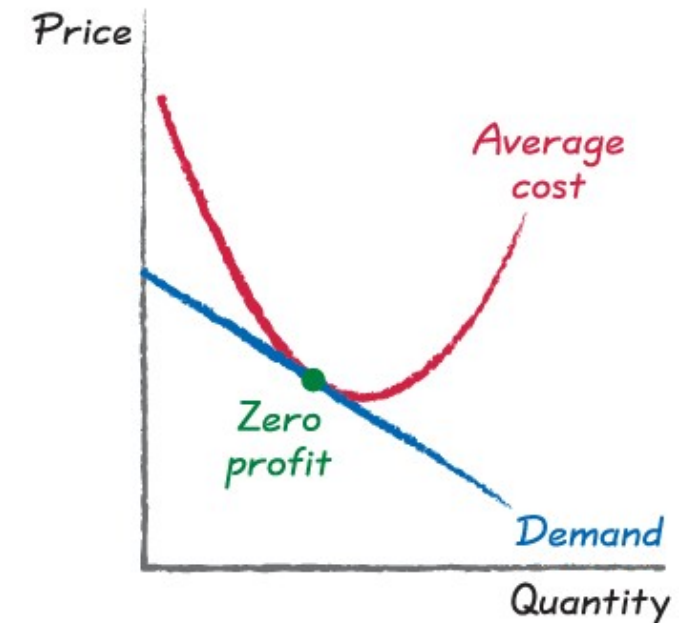
➤ Demand = Average revenue = Price

Zero profit point: Where **demand** just touches **average cost**.
↓
equivalent statement

Zero profit point: Where **price** just touches **average cost**.

➤ In the long run, **price** = **average cost**.

Zero profit occurs at the point where **demand just touches average costs** — long-run equilibrium!



Big Picture: Average costs are the dominant factor determining prices in the long run

Summarizing!

If there is free entry and exit, then in the long run:

1. economic profit will be eliminated.
2. price will equal average cost.

What **if** new rivals **don't** enter?

- Perhaps your profits won't be competed away.

Your long-run profitability **depends on barriers** to entry.

- *Explore this topic next!*

Key take-aways: Free entry and exit in the long run

Enter when there is **positive** profit

- Long run: Entry continues until zero economic profit.

Exit when there is **negative** profit

- Long run: Exit continues until zero economic profit.

Entry of new competitors:

- Your firm's demand curve shifts **left** and **flattens**.
- You sell less at a lower price.

Exit of incumbent firms:

- Your firm's demand curve shifts **right** and **steepens**.
- You sell more at a higher price.

If there is free entry and exit, then in the long run, **economic profit will be zero** and **price will equal average cost**.

Chapter 15 (3 of 4)

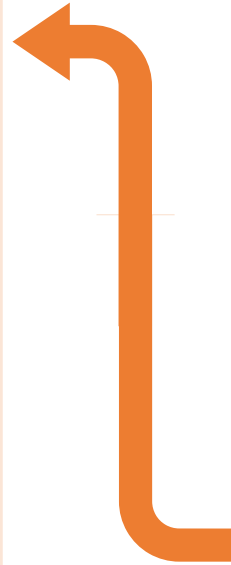
Apply strategies to deter new entrants from competing away your profits:

- Barriers #1-4
- Overcoming barriers to entry

1. Revenues, Costs, and Economic Profits

2. Free Entry and Exit in the Long Run

3. Barriers to Entry



Barriers to entry

Barriers to entry: Obstacles that make it **difficult for new suppliers to enter** a market.

- Can prevent new entrants from competing away profits of incumbent firms

Four strategies for creating barriers to entry:

- 1. Demand-side strategies** that create customer lock-in
- 2. Supply-side strategies** to develop unique cost advantages
- 3. Regulatory strategies** that enlist government policy to prevent entry
- 4. Entry deterrence strategies** to scare off potential rivals

Barrier 1: Demand-side strategies

Big Picture Goal: Prevent new entrants from winning over your existing customers by creating customer lock-in.

iPhone switching costs:

Specific charger; data transfer; new operating system; cross-device compatibility, etc.

Use *switching costs* to lock your customers in:

- **Switching costs:** An impediment that makes it costly for customers to switch to buying from another business.

Doctor loyalty: You are more likely to visit a doctor with whom you've built a long-time relationship, than shop around for the best deal.

Earn *goodwill* to keep your customers loyal:

- If you have a good reputation with your clients, this relationship helps lock in your customers.

WhatsApp: You use WhatsApp because all your friends use it. New entrants struggle not because they have an inferior product, but because of their lack of network.

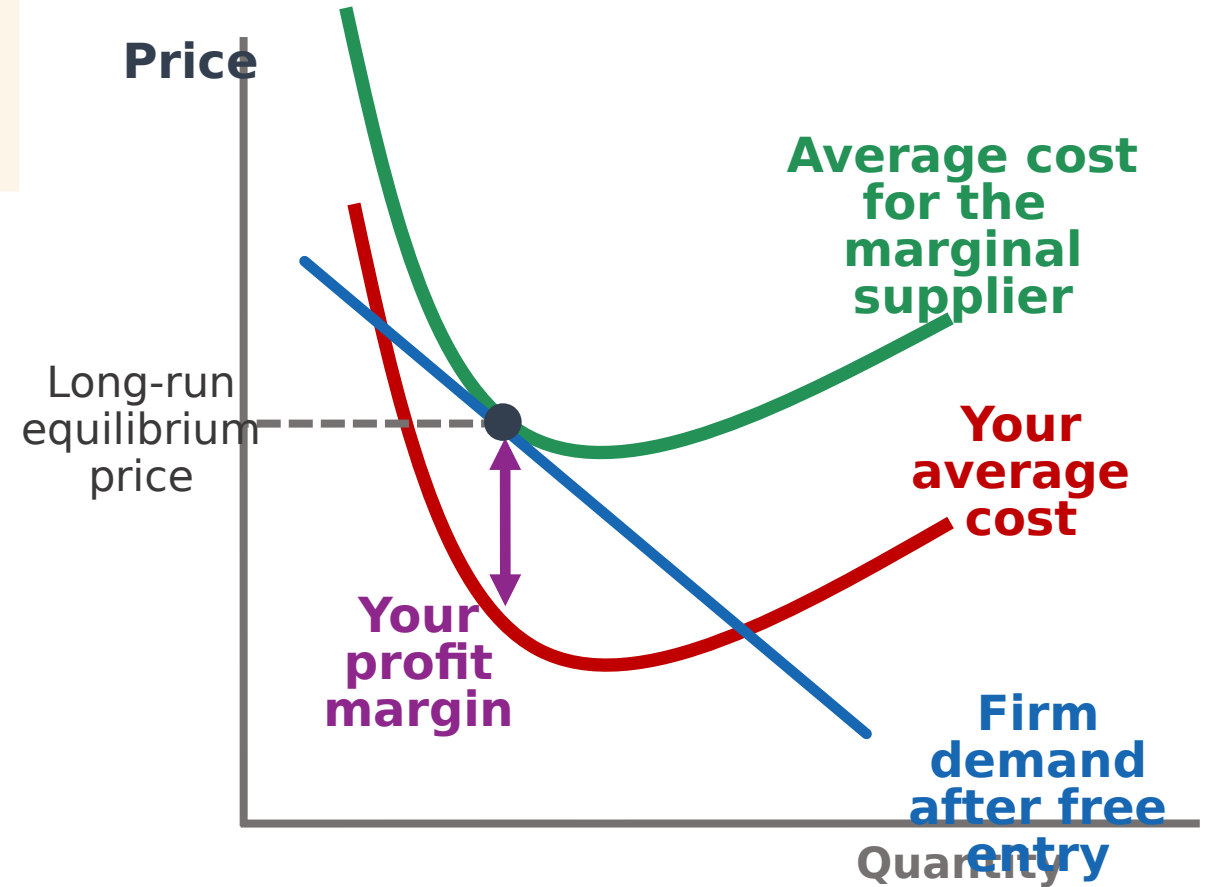
Barrier 2: Supply-side strategies (1 of 4)

Big Picture Goal: Deter the entry of new rivals by gaining cost advantages that newcomers cannot easily replicate.

RECALL: Entry into a market continues **until** the last competitor that enters expects their **economic profit to be zero**.

BUT, you continue to earn economic profits if...

- **your business has lower costs** than that of the marginal supplier!



Barrier 2: Supply-side strategies (2 of 4)

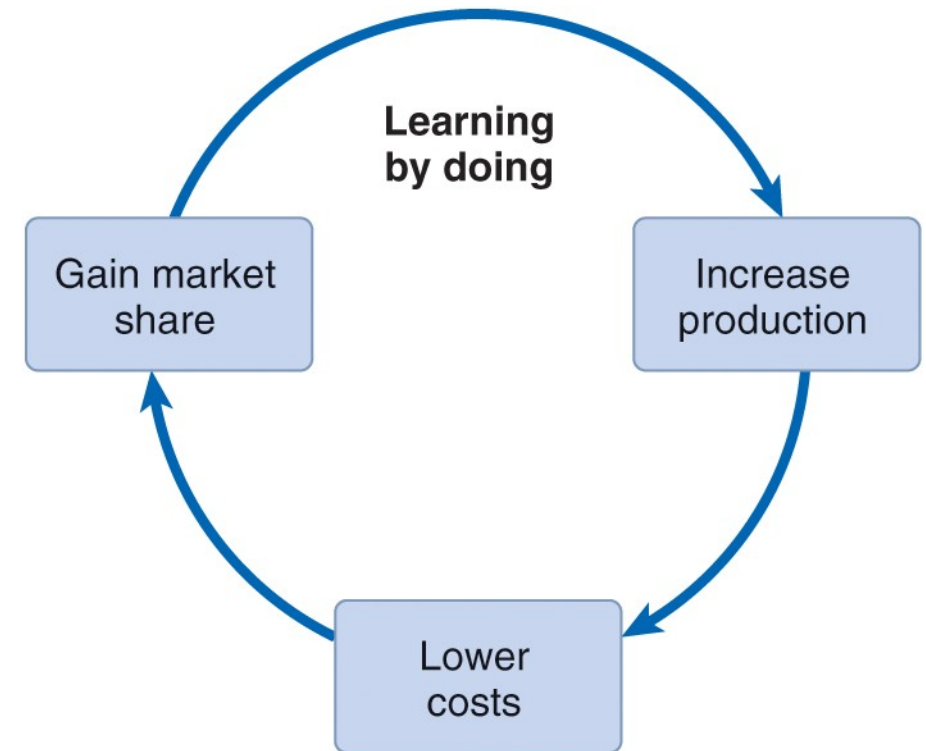
Strategies for developing unique cost advantages:

Your experience can yield efficiency gains through “learning by doing.”

- Newcomers’ inexperience means they have higher costs.

Virtuous cycle:

1. As market leader, you produce the most.
2. More production means more opportunities for “learning by doing.”
3. More “learning by doing” lowers your costs.



Barrier 2: Supply-side strategies (3 of 4)

Strategies for developing unique cost advantages:

Benefits of mass production:

- New entrants typically start small, hoping to grow.
 - Small production puts them at a cost disadvantage.
- Larger incumbents use giant production lines that are more efficient.
 - Mass production gives them a cost advantage.

Etsy versus H&M: Sewing a shirt **by hand** on a sewing machine is much less efficient than using giant **production lines** that churn out thousands of shirts.

- Etsy designers are not a serious threat to H&M.

Amazon: Research into **cloud computing** allows Amazon to manage its enormous website more effectively than rival online retailers.

Create cost advantages through research and development:

Research and development to:

Barrier 2: Supply-side strategies (4 of 4)

Strategies for developing unique cost advantages:

Leverage your relationship with suppliers to get a better deal:

- Use your buying power to demand discounts on your raw materials, wholesale goods, and other inputs.

Walmart: Walmart is a huge player and uses its buying power to negotiate lower prices from its suppliers.

- These lower prices give them a cost advantage.

Limiting access to key inputs:

- Tying up key inputs make it difficult for

Silicon Valley startups: Trouble getting good software engineers and programmers because the best workers are all hired by Google or Facebook.

US Airways: Signed a **32-year lease** on airport gates at Philadelphia International Airport.

Effectively locked new airlines out of the market because they couldn't get access to a gate.

Barrier 3: Regulatory Strategies

Big Picture: Government regulates who can enter a market for two main reasons: (1) to counter a market failure, (2) because politicians are swayed by corporate lobbyists.

Pharmaceutical companies:

Incentive to invest billions into research and development of new drugs, because the patent protects their profit margin for many years.

Patents, Copyrights, and Trademarks:

- The government gives you a monopoly over selling your intellectual property in order to **incentivize innovation.**

Regulatory burden:

Opening a child care center, hospital, or marijuana dispensary comes with many regulatory burdens.

Regulations make it difficult for new businesses to enter your market:

- Many separate procedures are required to register a new business.

Government license: If you manufacture, wholesale, import, or sell alcoholic beverages at a retail location, you need a license.

Compulsory government licenses can limit competition:

- Government directly regulates entry into some markets.

Barrier 4: Entry deterrence strategies

Big Picture Goal: Convince your potential rivals that if they enter your market, you will CRUSH THEM. These are some strategies that make your **threat seem credible:**

Build excess capacity to signal you're ready for a fight:

- Flood the market if new rivals enter.
- Investment in excess capacity today enables future cost-cutting.
- Irreversible sunk costs signal you're committed to staying.

Financial resources signal that you can survive a fight:

- You have the resources to survive a long and costly fight.

Apple: Mid-2021 Apple had **\$194 billions of cash** on hand. Rather than invest or pay shareholders, Apple held the cash to signal they had the financial resources to maintain their market share.

Cereal: Dozens of different cereals are made by only a handful of companies. This **brand proliferation** eliminates any profitable niche in the cereal market.

Amazon: Amazon **crushed Diapers.com through a price war** costing Amazon over \$100 million in three months. The destruction of one rival deters others from even trying to compete.

Overcoming barriers: Tesla case study (1 of 4)

Combating barriers to entry:

1. Demand-side strategies that create customer lock in

Combatting customer lock-in and the network effects of gasoline-powered vehicles:

- Tesla **subsidized the installation** of thousands of electric car chargers in parking lots, hotels, and restaurants.
- Allowed other companies to **use Tesla's patents** in order to build a thriving electric-car industry, which in turn helps build a vibrant network of charging stations and repair shops.

2. Supply-side strategies to develop unique cost advantages

3. Regulatory strategies that enlist government policy to prevent entry

4. Entry deterrence strategies to scare off potential rivals

Overcoming barriers: Tesla case study (2 of 4)

Combating barriers to entry:

1. **Demand-side strategies** that create customer lock in
2. **Supply-side strategies** to develop unique cost advantages

Supply-side strategies to overcome cost disadvantages:

- Tesla **partnered** with experienced British car manufacturer Lotus to reduce up-front manufacturing costs.
- Used a **low-volume** car model as an opportunity for “learning by doing” and refining technology to reduce costs before trying to scale up.

3. **Regulatory strategies** that enlist government policy to prevent entry
4. **Entry deterrence strategies** to scare off potential rivals

Overcoming barriers: Tesla case study (3 of 4)

Combating barriers to entry:

1. **Demand-side strategies** that create customer lock in
2. **Supply-side strategies** to develop unique cost advantages
3. **Regulatory strategies** that enlist government policy to prevent entry

Using regulatory strategies to secure government help:

- Received \$465 million loan from an Energy Department program
- Buyers of electric cars got subsidies of up to \$7,500
- Built new factories in states that offer the most attractive tax breaks

4. **Entry deterrence strategies** to scare off potential rivals

Overcoming barriers: Tesla case study (4 of 4)

Combating barriers to entry:

1. **Demand-side strategies** that create customer lock in
2. **Supply-side strategies** to develop unique cost advantages
3. **Regulatory strategies** that enlist government policy to prevent entry
4. **Entry deterrence strategies** to scare off potential rivals

Overcoming deterrence strategies to fight the big guys:

- Elon Musk had made hundreds of millions in previous ventures.
- Already had strong connections to Silicon Valley investors.

Chapter 15 (4 of 4)

1. Your economic profit is positive anytime **demand** lies above your **average cost** curve.

2. If there is **free entry and exit**, then in the long run, economic profit will be **zero**, and the **price = average cost**.

3. You can use business strategies to shape (or overcome) barriers to market entry.

1. Revenues, Costs, and Economic Profits

2. Free Entry and Exit in the Long Run

3. Barriers to Entry