Lecture 12: Entry, Exit and Long Run Profitability

November 19, 2024

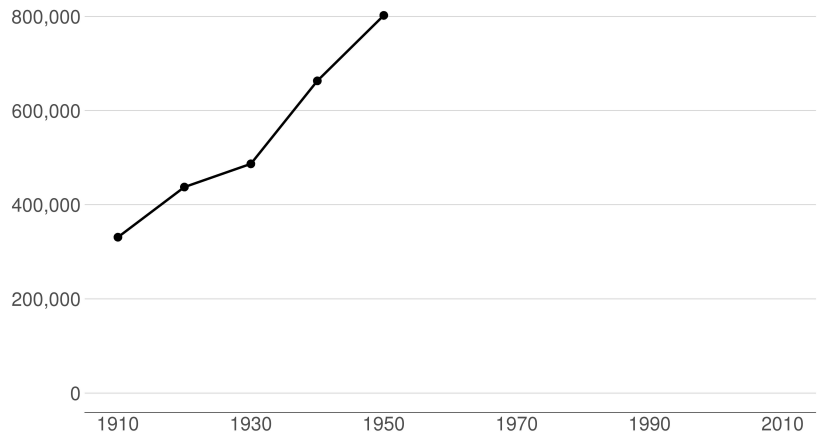
Overview

1. Administrative Notes
2. Ripped from headlines
3. Entry, Exit and Long Run Profitability

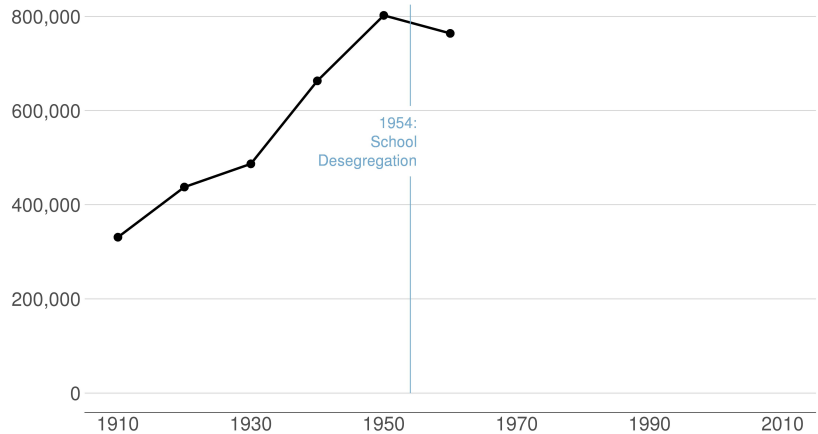
Course Administration

1. Please come to office hours
   - if you scored less than 50 on the midterm, I expect to see you
   - volunteers available for help
2. Lecture 13 summary assignment posted
   - Please don't use # in file names as it causes download problems
3. Problem Set 11 posted
4. Chapter 15 End-of-Chapter questions posted
5. Consider Data Visualization Using R – Mondays at 3:30, Spring 2025
6. Any other questions or outstanding issues?

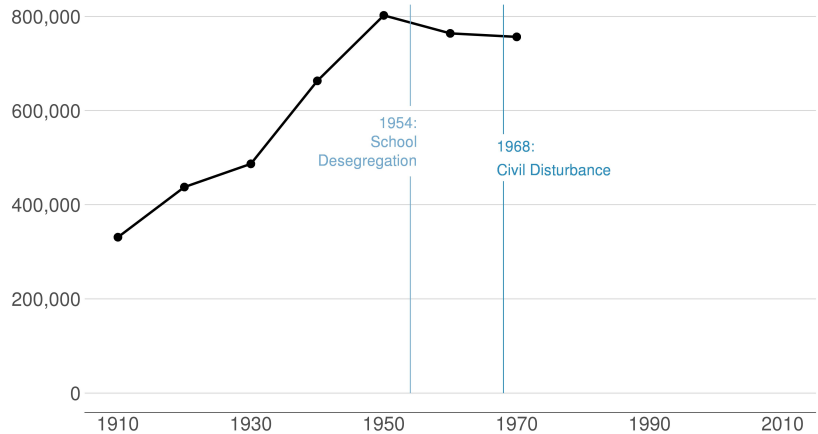
DC Gains Population Through 1950



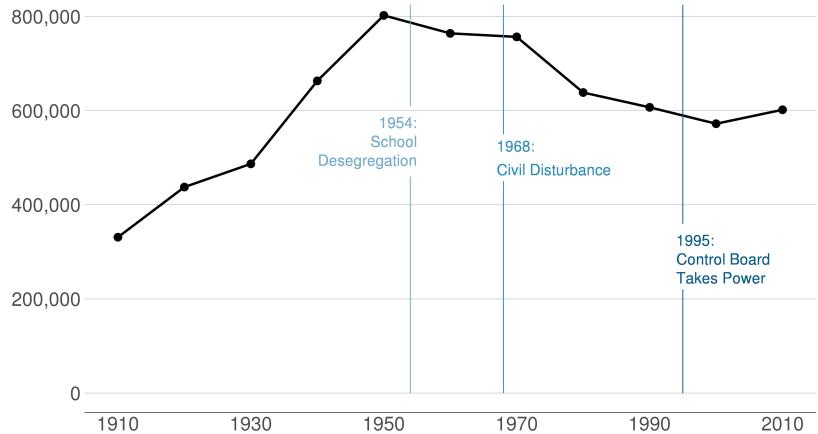
Population Loses Start with Desegregation



Continue After Civil Disturbance



Population Turns Up After 2000



Profound Changes: Share African American by Neighborhood

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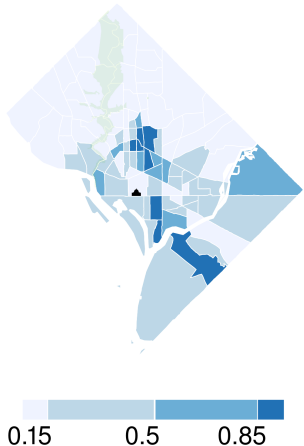
2010



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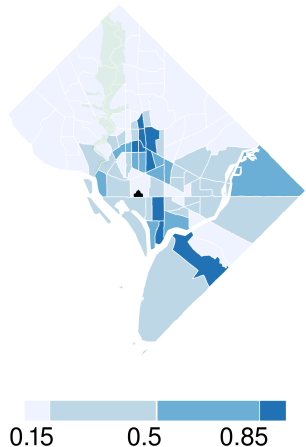

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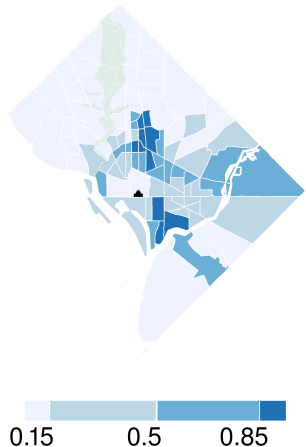

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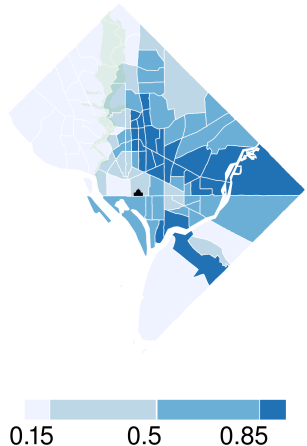

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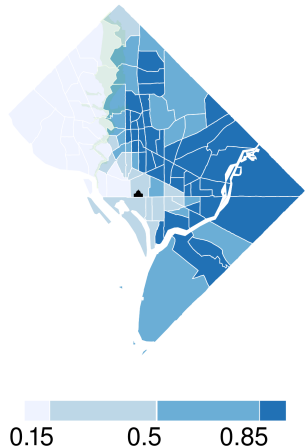

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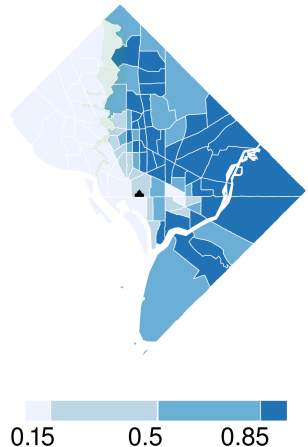

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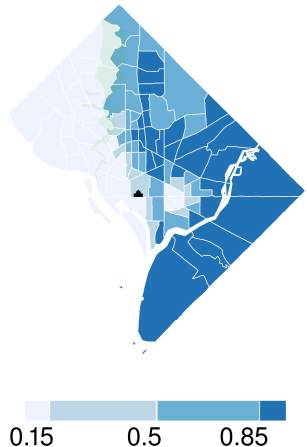

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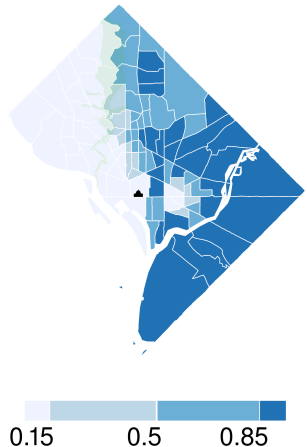

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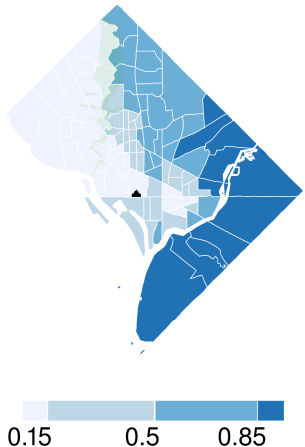

PS 8: Comparative Advantage and Babe Ruth

"... At the beginning of his career for the Boston Red Sox, Babe Ruth, became the best left-handed pitcher.... But during ... his transition to New York it became apparent that Ruth's batting skills were comparatively more advantageous for the team than his pitching skills. Since pitchers cannot really hit in the same games they pitch it ultimately became a decision between Ruth pitching or hitting. He was the absolute best at both, but his comparative advantage was in hitting rather than pitching. He went on to be the greatest hitter to have ever played. .... "

How What You're Learning is Policy-Relevant

Ripped from Headlines presentation(s)

As a reminder, next week
Send the article by Wednesday midnight for approval

Afternoon, joint presentation – last one!

Finder	Presenter
Michael J.	Elly H.
	Corey D.

Evening, individual presentation

Finder	Presenter
Ramadan A.-A.	Katelyn H.

Today's Ripped from the Headlines

Afternoon, joint presentation

Finder	Presenter
Jenna A.	Rimsha A.
Corey D.	Rachel L.
Tosha S.	Michael J.

Evening, individual presentation

Finder	Presenter
Abimbola O.	Ramadan A.-A.
	Saumya Mutakar (use article from afternoon of your choice)

Today: 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

1. Revenues, Costs, and Economic Profits

Economic Profit vs Accounting Profit

$$\text{profit} = \text{revenue} - \text{costs}$$

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- composting service brings in \$500,000 per year
- costs are \$420,000 per year
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- what are the entrepreneur's opportunity costs?
  - foregone wages
  - money your money could have otherwise earned

Does the composting business make economic profits?

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Assume

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- What if interest rates were 30%?
  - Econ profits $= 0 \rightarrow$ Maybe don't bother with the hassle

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- are you making profits in excess of doing something else?
- what should drive decisionmaking

Profit Margin = Profit per Unit

We defined

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Divide each side by quantity Q:

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Note: Average revenue = P

A Little More on Costs

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&= \text{average fixed costs} + \text{average variable costs}
\end{aligned}
$$

Cost Reminder

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- Fixed costs $\equiv$ costs required to produce any units at all
- Variable costs $\equiv$ costs that vary with production
- We assume
  - at some point variable costs per unit increase
  - may be due to rising input costs
  - may be due to diminishing marginal product
- $\rightarrow$ U-shaped average cost curve

Fixed Costs

- Fixed costs don't change with Q
- What does fixed cost look like for any Q?

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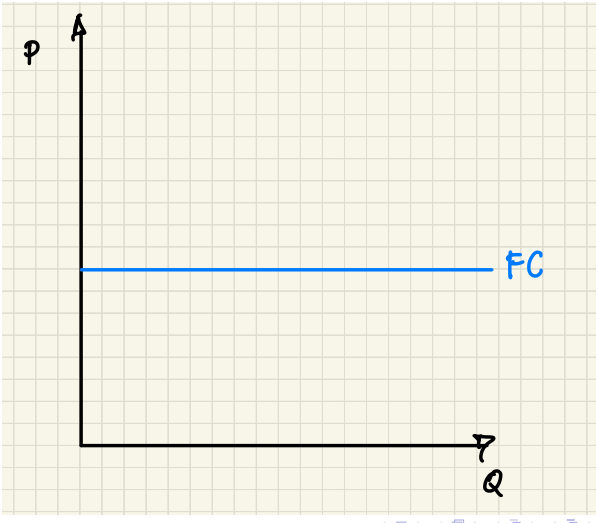

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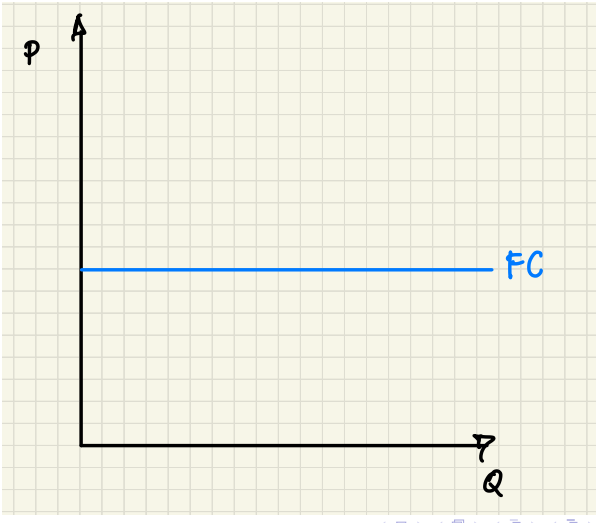

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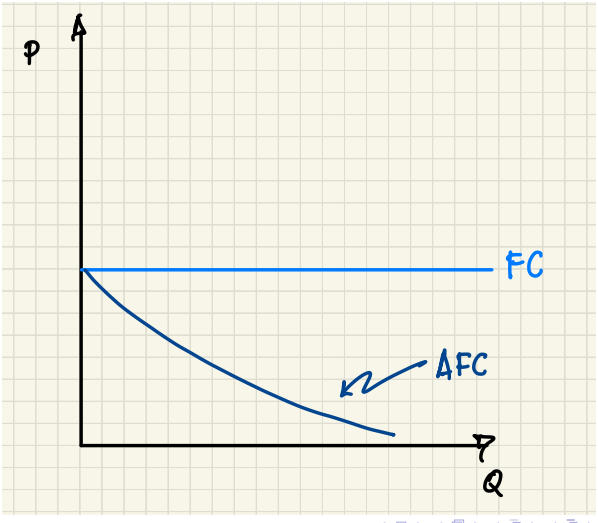
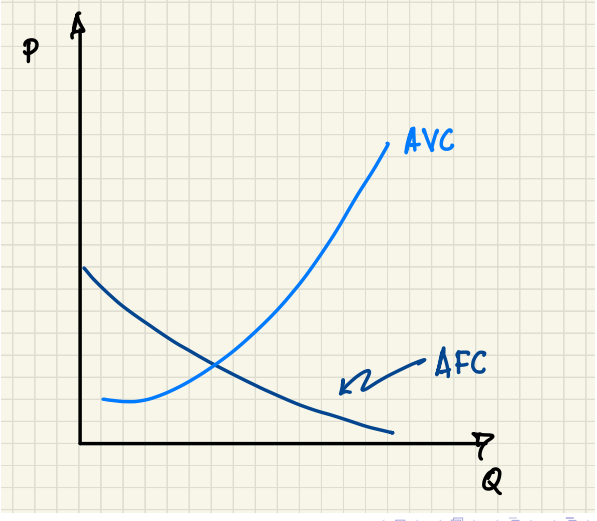


Cost Curves

- Average fixed costs decline
- We assume average variable costs increase at some Q
- Add together for average total costs



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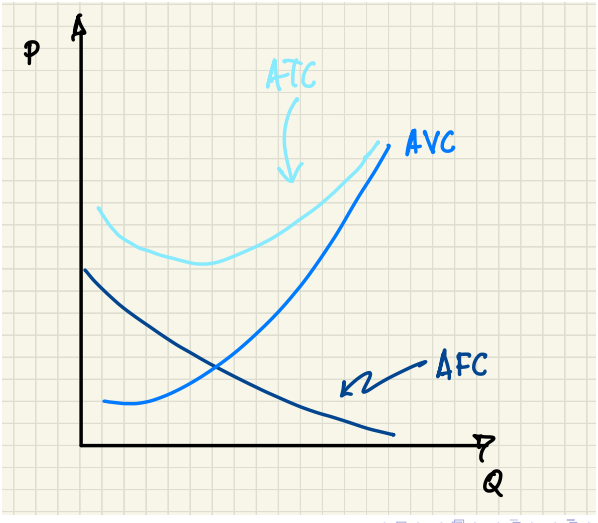

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- $ATC = AVC + AFC$

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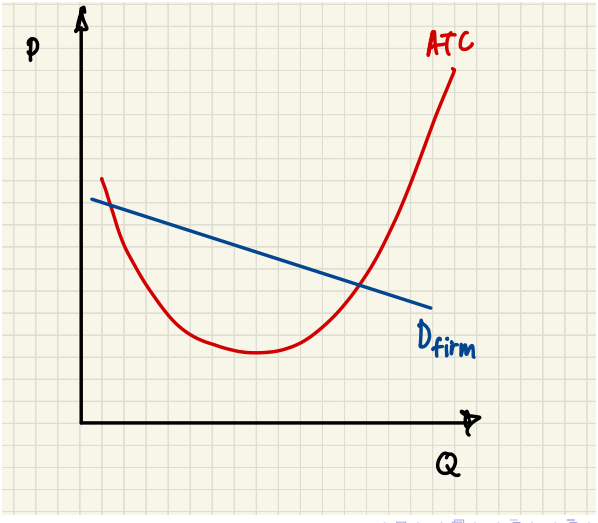

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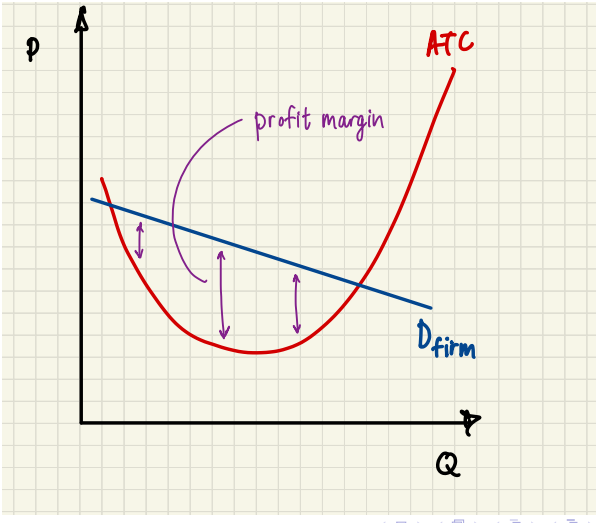

Long Run vs Short Run Decisions

Short Run

- Market conditions relatively fixed
- How much should the firm produce?
- Choose Q^* where $MR = MC$
- Marginal decision is how much to produce

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Long Run

- Market conditions can change
- Should the firm exit the market? or
- Should a new firm enter the market?
- Enter if expected economic profits > 0
- Marginal decision is whether to enter or exit

2. Entry and Exit in the Long Run

The Power of Competition

1. Entry decreases demand and profits
2. Exit increases firm demand and profits
3. Economic profits tend to zero
4. Price equals average cost

Entry Decreases Demand and Profits

- Entrants start firms in profitable markets
- Entry decreases profits for incumbent firms

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- Entrants start firms in profitable markets
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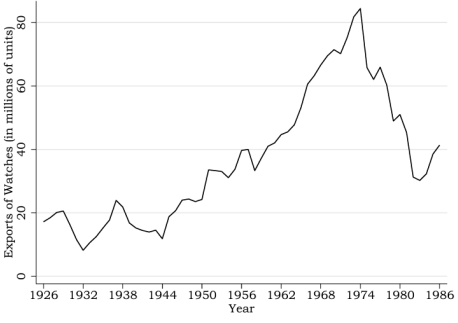
- Case of Swiss watches
- World leader in watches for centuries
- Account for half of global watch exports in 1950s

See paper here

Guess what happened in the watch market

Swiss watch exports

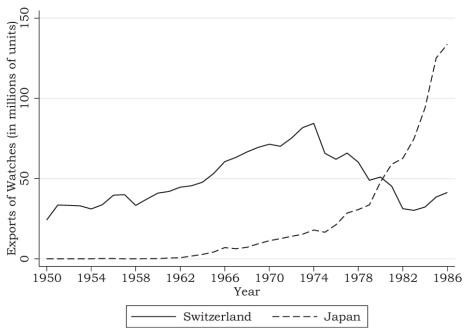


The Rise of Quartz Mechanisms

- 1960s: invention of quartz watches
- allows production of cheaper mechanical watches
- what happens to profitability of Swiss watch firms?

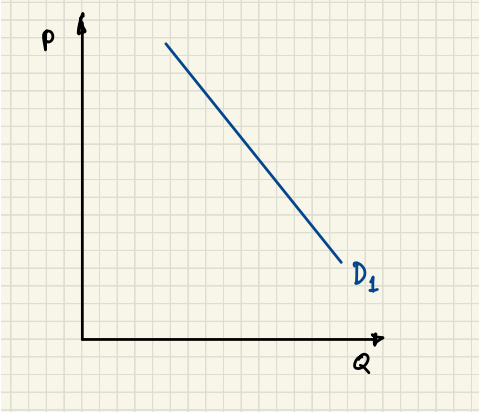
See paper here

Watch Exports from Market Leaders



From Swiss Watchmaker Perspective, What Happens to Firm Demand?

Before invention of quartz movements



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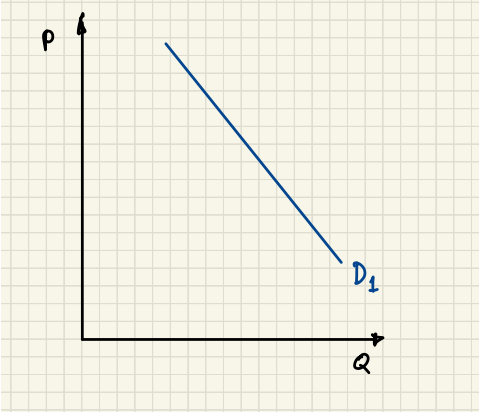
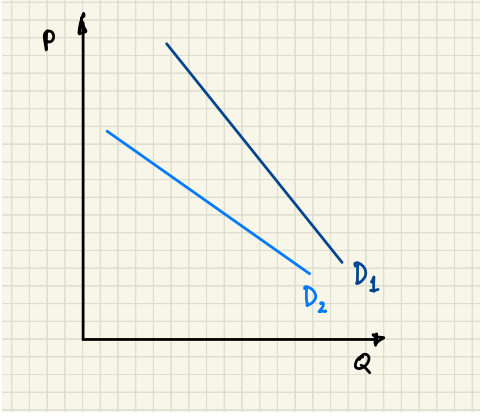


After invention of new technology



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- More demand for remaining firms

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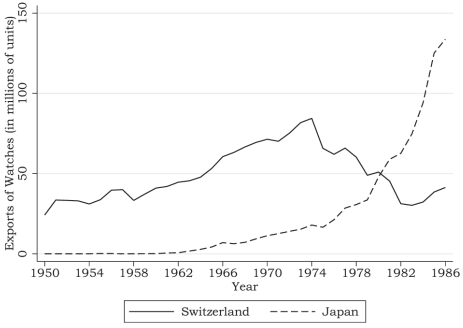
- Exit $\equiv$ departure of firms from industry
- More demand for remaining firms
- 1970: 1618 Swiss watchmakers
- 1980: 861
- 1992: 572
- Remaining watchmakers in ok financial shape

See paper here

Watch Exports from Market Leaders

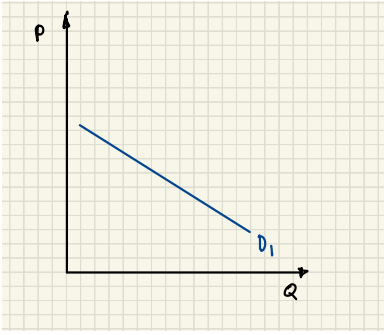


For Remaining Swiss Watchmakers 1990s, What Happens to Firm Demand?

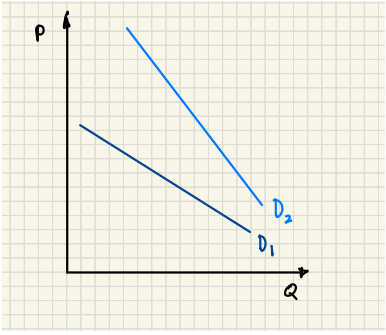
Customers no longer leaving in droves

thanks, Swatch

With $>$ 1500 Swiss Firms

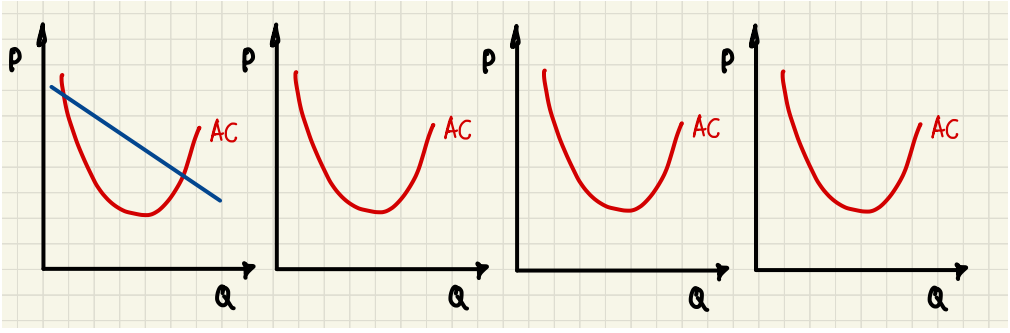


With $<$ 600 Swiss Firms



Long Run: Economic Profits Tend to Zero

What does entry do to firm demand? And why does this case draw entry?



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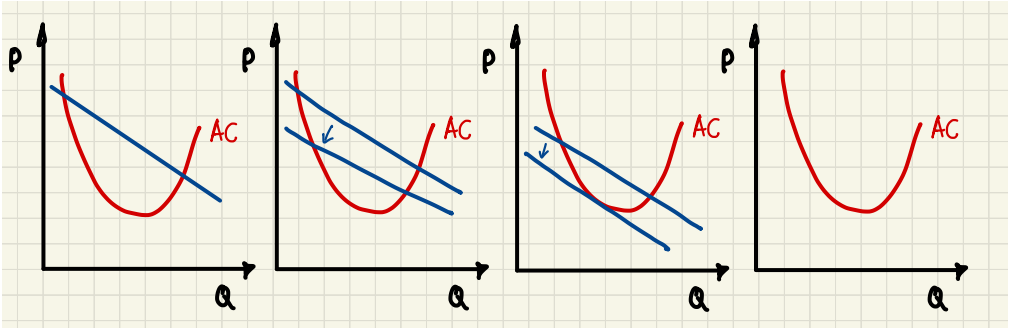

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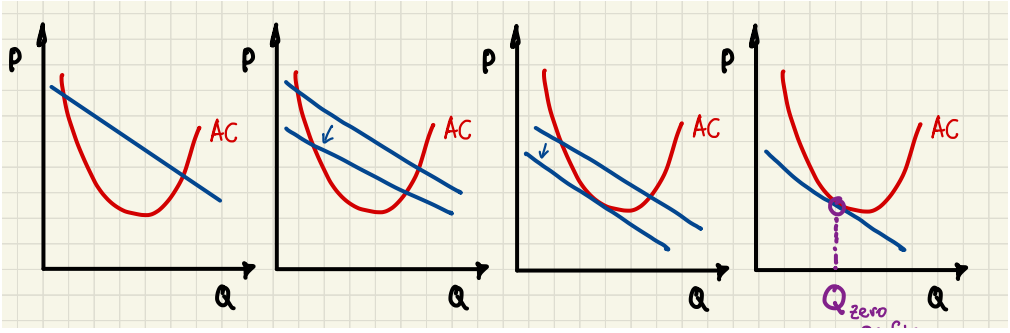

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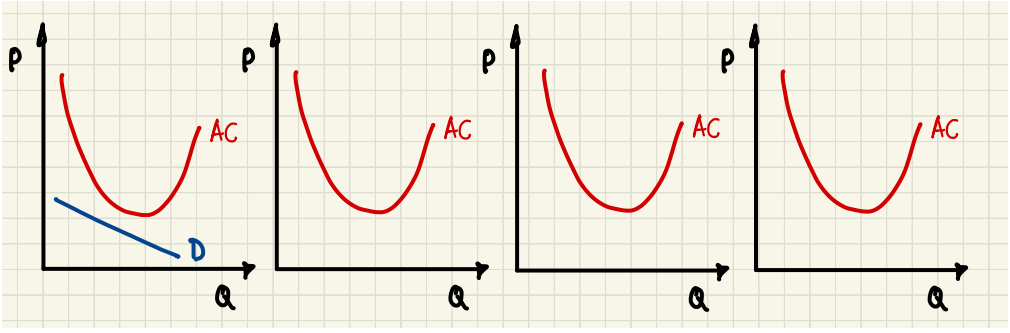
What does exit do to firm demand? And why does this case cause exit?



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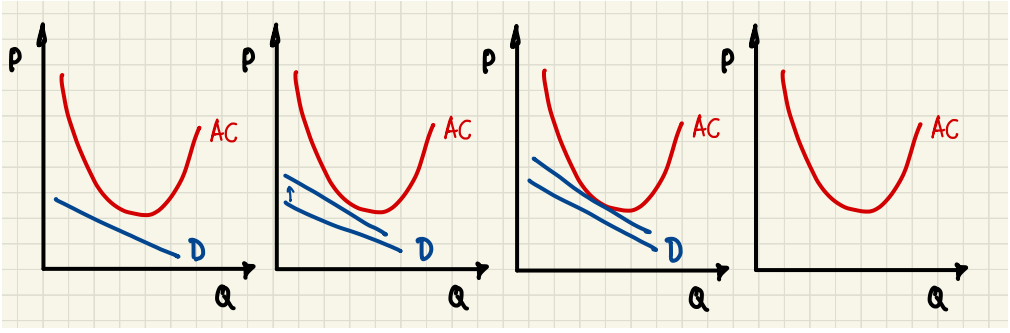

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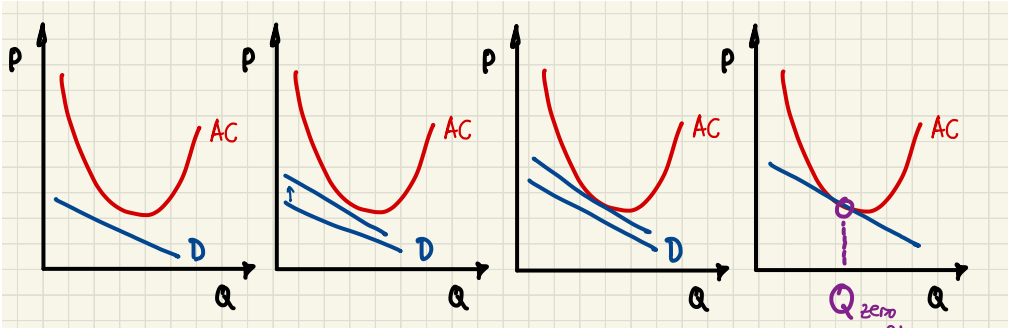

All Profits Disappear in the Long Run

- Long run can be quite long
- Desireable opportunities disappear
- Bell Labs used to be the Apple of its day
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- In the long run, congested driving routes tend to the same driving time

Long Run: Price = Average Cost

- Only equilibrium outcome is where profits are zero
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  - we expect higher cost firms to drop out first
  - think back to which firms died during covid
- $\rightarrow$ Free entry and exit drive price = average cost

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- $\rightarrow$ Free entry and exit drive price = average cost
- Persistent profits therefore require... barriers to entry

3. Barriers to Entry

Categorizing Barriers to Entry

1. Find ways to create customer lock-in
2. Develop unique cost advantages
3. Enlist government policy to prevent entry
4. Scare off potential entrants

1. Demand-Side Strategies: Create Customer Lock-in

- Make it costly for customers to switch from your product

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- Make your product more useful as more people use it
  - "network effect" – product becomes more valuable as more people use it
  - non-internet examples?

2. Supply-Side Strategies: Develop Cost Advantages

Goal: Firm should keep costs lower than competitors

- Produce more cheaply via "learning by doing"
  - production becomes cheaper the more experience you bring

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- Use mass production may give cost advantage
  - economies of scale: ability to produce more cheaply as production increases
- Create cost advantages through research and development
- Leverage relationships with suppliers to get better deals
- Try to buy up all the key inputs to limit competitors
  - why firms make workers sign non-compete agreements

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  - grazing licenses
  - satellite launch licenses
- Businesses lobby to create regulatory barriers

Ketchup and Lobbying

1910

- Pre-Heinz, ketchup has mold and bacteria
- So vendors add anti-microbial sodium benzoate
- But.. a carninogen in too-large quantities

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- So vendors add anti-microbial sodium benzoate
- But.. a carninogen in too-large quantities
- H. J. Heinz invents ketchup that does not require preservatives
  - requires high-quality tomatoes
  - and a refrigeration transport network
  - higher quality and higher prices
- Heinz becomes ardent lobbyist for Pure Food Act of 1906

Longer story here, here and here.

4. Deterrence Strategies: Ward Off Potential Rivals

- Build excess capacity to be able to respond
- Keep cash on hand to be able to respond
- Cover all consumer preferences to keep out competitors
- Make a reputation for fighting

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- Get the government to protect your industry
  - Boeing?

In Sum: Pro Market $\neq$ Pro Business

- Long run: Entry and exit get rid of profits
- Prices converge to average costs
- Strategies and policies that improve market functioning help consumers
- Market interference may harm consumers and helps firms

For Next Class

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- Do problem set, due Dec. 3
- Read Chapter 10, sections as outlined on lectures tab
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I will

- post these lecture notes on my webpage
- post link to lecture recording on Blackboard
- anything else?