



# German Industrialization

The case study focuses on Werner von Siemens and his inventions and company.

- His brothers is also heavily involved in the company (Siemens AG)

- Most important: They went abroad

- Sending family → Been this way for 1000 years in European Business

↳ They marry local girls, maybe lac? maybe connections?

1) Importance of family and friends: founding and growing the business

Brothers:

Carl → Russia 🇷🇺

Wilhelm & Friedrich → England 🇬🇧

English branch:

- Engineering Centre

- Financial Centre (Patents, investors)

Some disagreement → This branch want to lay telegraph cables on the seas

↳ They want to run the businesses independently of each other

Russian branch:

- Want to build telegraph lines all over Russia

↳ need a lot of copper

- They buy a copper mine to sell copper to Siemens in Russia

Important engineer: Halske

Sources of friction → Halske doesn't like the sea cables

→ Doesn't get invited to invest in the copper mine

↳ Halske wants to dissolve the partnership

≈ Siemens start to life ≈

2) Early economic theorists: (of economic growth and industrialization)

Geschenbren → Relative backwardness. Gov't plays a bigger role for countries with further to catch up

W.W. Rostov → Mechanistic model of economic growth

Railways important to Germany for Military reasons



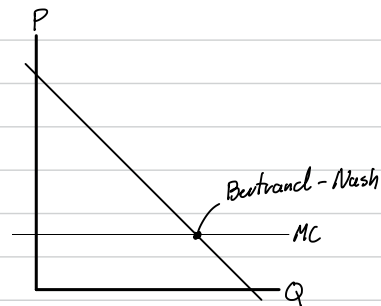
(surrounded)

The German Gov.t. invests in:

- Telegraph
- Railways
- Battleships
- Artillery

The transatlantic cable gets built by Siemens  
BUT: Another company builds another cable  
↳ DUOPOLY

↳ **BERTRAND COMPETITION** (P)

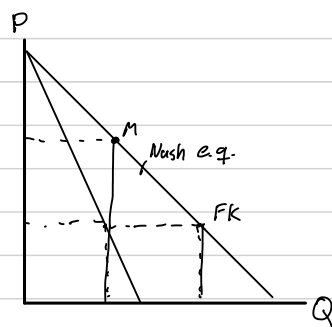


Price is the variable

- Identical products
- Unlimited capacity
- Identical marginal cost

↳  $P = MC$

↳ **COURNOT COMPETITION** (Q)



Quantity is the variable

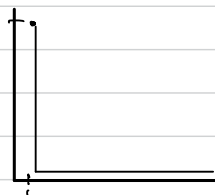
- Identical products
- Choose Q simultaneously

↳ Used when capacity is limited

The telegraph lin. market:  
Huge fixed costs  
Very small marginal costs

IF:  $P = MC$ , then profit would be zero

Marginal cost curve



This implies: Collusion, creating a cartel

## Part 2

Generally, economists love free trade ❤

↳ This depends on a lot of things

Assumes:

- Perfect competition
  - Homogenous products
  - Fully informed consumers
- ↳ Not fulfilled

### "The Washington Consensus"

If a country needs a bailout by the IMF (based in Washington D.C.) they need to take the "IMF Medicine"

- Liberalize markets
- Open economy
- Small Govt.

Is this medicine good?

+ Countries with low tariffs grow faster

? Do you grow faster after an IMF bailout? Hard question

Let's create a simple regression (OLS)

$$\frac{\Delta \text{GDP}}{\text{Capita}} = a + b \cdot \text{Bailout} + \epsilon$$

←  
OLS: Causation

Do we know it runs this way

Even if we correct for this:

- The Washington Consensus **lowers** growth which suggests that it's not very good medicine

If we isolate tariffs:

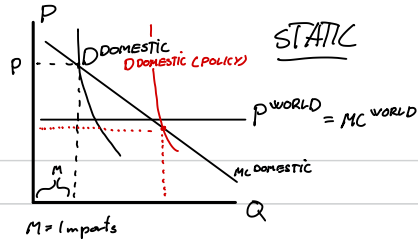
$$\Delta \text{GDP} = a + b \cdot \text{Tariffs} + \epsilon$$

↳ We see that the countries with **high tariffs** grew faster

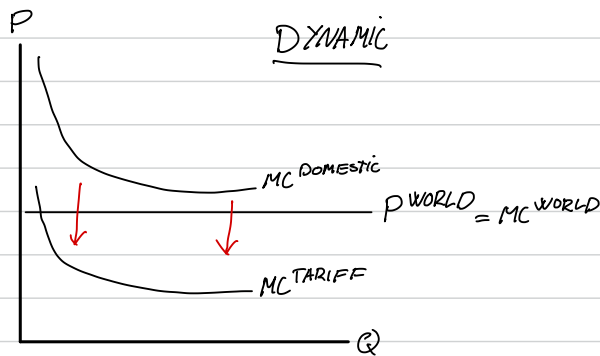
3) Heckscher-Ohlin, etc. - say that free trade is best for growth  
But! Depends on strong assumptions, e.g. perfect competition  
Side note: There was probably more competition in the 1700s than today

O'Rourke looks at the 1800s countries, and finds that  
 $\uparrow \text{Tariff} = \uparrow \text{Growth}$

↳ Runs regression analyses



How to increase domestic Demand  
- Domestic policy



#### 4) Rainer Fremdling

US: Put tariffs on all iron products

↳ Per ton

↳ More sophisticated products gets a lower comparative tariff rate than the "raw" materials

Example:

	Price	Weight	Tariff	Tariff rate
Railway	10 \$	1 ton	10 \$	100%
Engine	1000 \$	1 ton	10 \$	1%

Germany: Put high tariff on advanced products

↳ Tariff on value of the product