

International Economics

Modern Trade Theories

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Developed countries tend to be K-abundant and to produce more K-intensive products

Country's capital stock per person engaged (in USD) - 2017

	capital stock			GDP pc	Economic Complexity		capital stock			GDP pc	Economic Complexity
Italy	\$	521.596	\$	32.407	1.12	Turkey	\$	116.160	\$	10.514	0.18
France	\$	467.349	\$	38.812	1.39	Brazil	\$	104.339	\$	9.925	0.61
United Arab Em.	\$	459.116	\$	40.645	0.13	Russia	\$	98.768	\$	10.720	0.85
United States	\$	394.492	\$	59.958	1.76	China	\$	82.763	\$	8.879	0.69
Spain	\$	387.937	\$	28.170	0.78	Mexico	\$	77.331	\$	9.278	1.10
Singapore	\$	379.427	\$	60.914	1.87	South Africa	\$	77.069	\$	6.132	0.27
Germany	\$	368.282	\$	44.350	2.08	Argentina	\$	73.899	\$	14.592	0.23
Greece	\$	364.797	\$	18.930	0.13	Malaysia	\$	72.777	\$	10.254	0.97
United Kingdom	\$	362.958	\$	40.361	1.53	Congo	\$	50.411	\$	1.768	-0.90
Japan	\$	315.025	\$	38.387	2.31	Colombia	\$	47.205	\$	6.378	0.14
Korea	\$	260.794	\$	31.617	1.78	Peru	\$	38.111	\$	6.711	-0.60
						Sudan	\$	25.199	\$	1.112	-1.46
						India	\$	19.885	\$	1.982	0.36
						Bangladesh	\$	12.936	\$	1.564	-1.71

In 2019 the USA had a trade deficit with China in all product groups that are regarded high-technology and medium-technology intensive (OECD classification)

Given the previous table, US is more than for times capital abundant. But USA has a deficit in relationship to china in capital intense product.

Product Group	US exports to China (in billion USD)	US imports from China (in billion USD)	US trade deficit with China
MANUFACTURE OF CHEMICALS AND CHEMIC	14.3	18.4	28%
MANUFACTURE OF MACHINERY AND EQUIPM	10.4	52.0	400%
MANUFACTURE OF OFFICE, ACCOUNTING A	0.6	54.1	9387%
MANUFACTURE OF RADIO, TELEVISION AN	7.8	86.6	1005%
MANUFACTURE OF MEDICAL, PRECISION A	8.1	13.2	64%
MANUFACTURE OF MOTOR VEHICLES, TRAI	8.9	13.9	57%
MANUFACTURE OF OTHER TRANSPORT EQUI	0.1	3.7	3838%

Data Source: WITS (2020)

Leontief paradox – US imports tend to be more capital intensive than exports

Leontief Paradox that do not support the HO model.

TABLE 5-2

Factor Content of U.S. Exports and Imports for 1962

	Imports	Exports
Capital per million dollars	\$2,132,000	\$1,876,000
Labor (person-years) per million dollars	119	131
Capital-labor ratio (dollars per worker)	\$17,916	\$14,321
Average years of education per worker	9.9	10.1
Proportion of engineers and scientists in work force	0.0189	0.0255

Source: Krugman (2018)

Comparative International Wage Rates (United States = 100)

US has importation with MEX and China but the difference is high in terms of wages, something that we don't expected according to the HO model.

**Hourly Compensation of Manufacturing Workers,
2015 (United States = 100)**

Country	
United States	100
Germany	112
Japan	63
Spain	63
South Korea	60
Brazil	31
Mexico	16
China*	11.3
India**	4.5

*Data for 2013

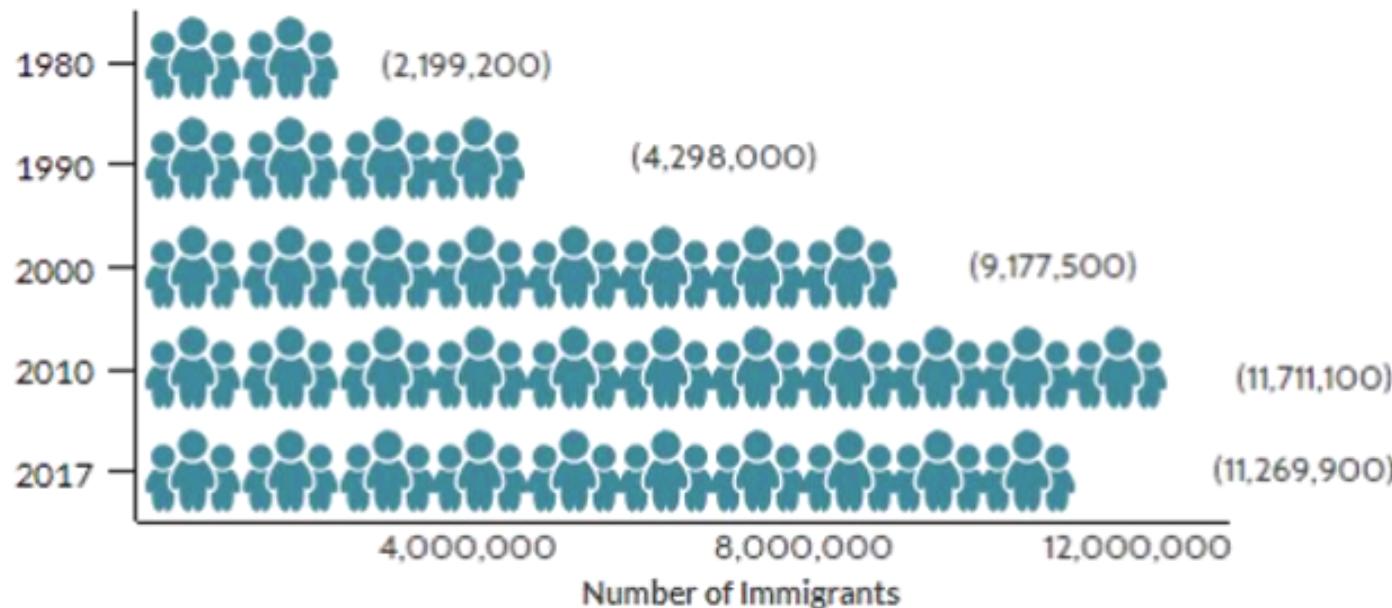
**Data for 2012

Source: The Conference Board, International Labor Comparisons.

Migration flows are not necessarily diminishing with trade

Trade is a substitute to trade, so the NAFTA should decrease the migration, but this does not occur, so the HO do not apply.

Mexican Immigrant Population in the United States, 1980–2017



Source: Migration Policy Institute (2018)

Agenda

Inter industrial trade

↳ cars vs cars

HO & Ricardian
?Heterogeneous
Products?

Intra industrial trade

↳ cars vs cars

X Do not apply

Introduction

Linder's hypothesis

Competitive Advantage (Porter)

External Economies of Scale

Internal Economies of Scale

(Neo)classical trade models do not predict intra-industry trade

- (Neo)classical models predict extreme degrees of specialization, which are not observed in the real world
- (Neo)classical models have problems to explain existing trade flows between relatively similar countries
- (Neo)classical models cannot explain intra-industrial trade
 - Intra-industry trade is a two-way trade in the same good, and is often measured with the Grubel-Lloyd Index:

$$= 1 - \frac{|X - M|}{X + M} \in [0, 1]$$

O : Total intra industrial trade

1. , No intra industrial trade

Indexes of Intra-Industry Trade for U.S. Industries (2009)

We can't know the amount of the trades.

Metalworking Machinery	0.97
Inorganic Chemicals	0.97
Power-Generating Machines	0.86
Medical and Pharmaceutical Products	0.85
Scientific Equipment	0.84
Organic Chemicals	0.79
Iron and Steel	0.76
Road Vehicles	0.70
Office Machines	0.58
Telecommunications Equipment	0.46
Furniture	0.30
Clothing and Apparel	0.11
Footwear	0.10

Source: Krugman (2018)

Importing shoes and do
not exporting shoes.

Nowadays most trade is intra-industry trade

Higher > 0.4

Economic Group/Country (Number of Countries)	Average Intra-industry Trade Index		avg. 2007-2009
	1970	2000	
Developed Economies (22)	0.351	0.620	Belgium 92%
Six Major Exporters	0.411	0.617	France 88%
France	0.519	0.767	Hungary 88%
Germany	0.510	0.692	Austria 87%
Italy	0.443	0.581	Netherlands 86%
Japan	0.177	0.410	Czech Republic 83%
United Kingdom	0.453	0.736	Spain 83%
United States	0.360	0.596	United Kingdom 80%
Other Developed Economies (16)	0.328	0.628	Sweden 80%
Developing Countries (25) <i>Low agriculture</i>	0.081	0.465	Poland 80%
New Industrialized Economies (6)	0.139	0.512	Mexico 78%
Second Generation NIEs (9)	0.034	0.408	Germany 77%
Other Developing Countries (10)	0.089	0.285	Canada 76%
Weighted average.			United States 74%
			Italy 74%
			Korea 70%
			Turkey 65%
			Norway 65%
			Japan 54%
			Ireland 50%
			Greece 46%
			Australia 42%
			New Zealand 41%
			average 72%

Source: Thirlwall (2011); OECD STAN Indicators (2015)

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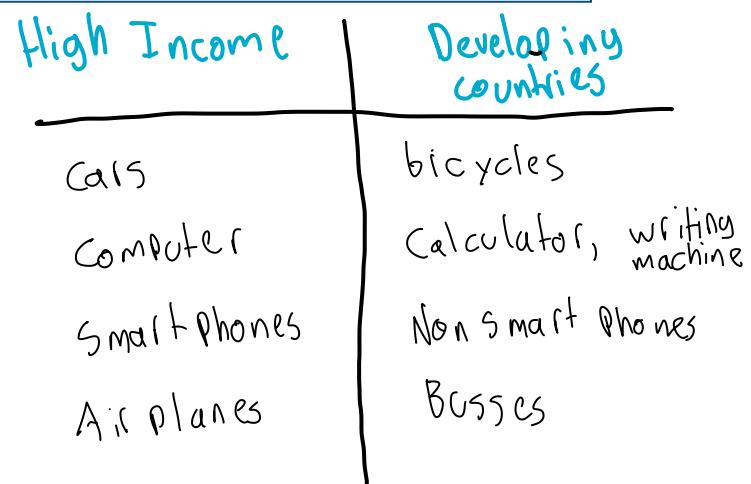
Linder's hypothesis

Intraindustrial trade can be explained with the income of the countries.

Competitive Advantage (Porter)

External Economies of Scale

Internal Economies of Scale



Linder's (1961) theory of overlapping demand

- Domestic **demand** for manufactures depends on **per capita income**
- Demand patterns in rich countries are similar and demand patterns in poor countries are similar
 - Nations with high per capita income will demand high quality manufactured goods
 - Nations with low per capita income will demand low quality manufactured goods

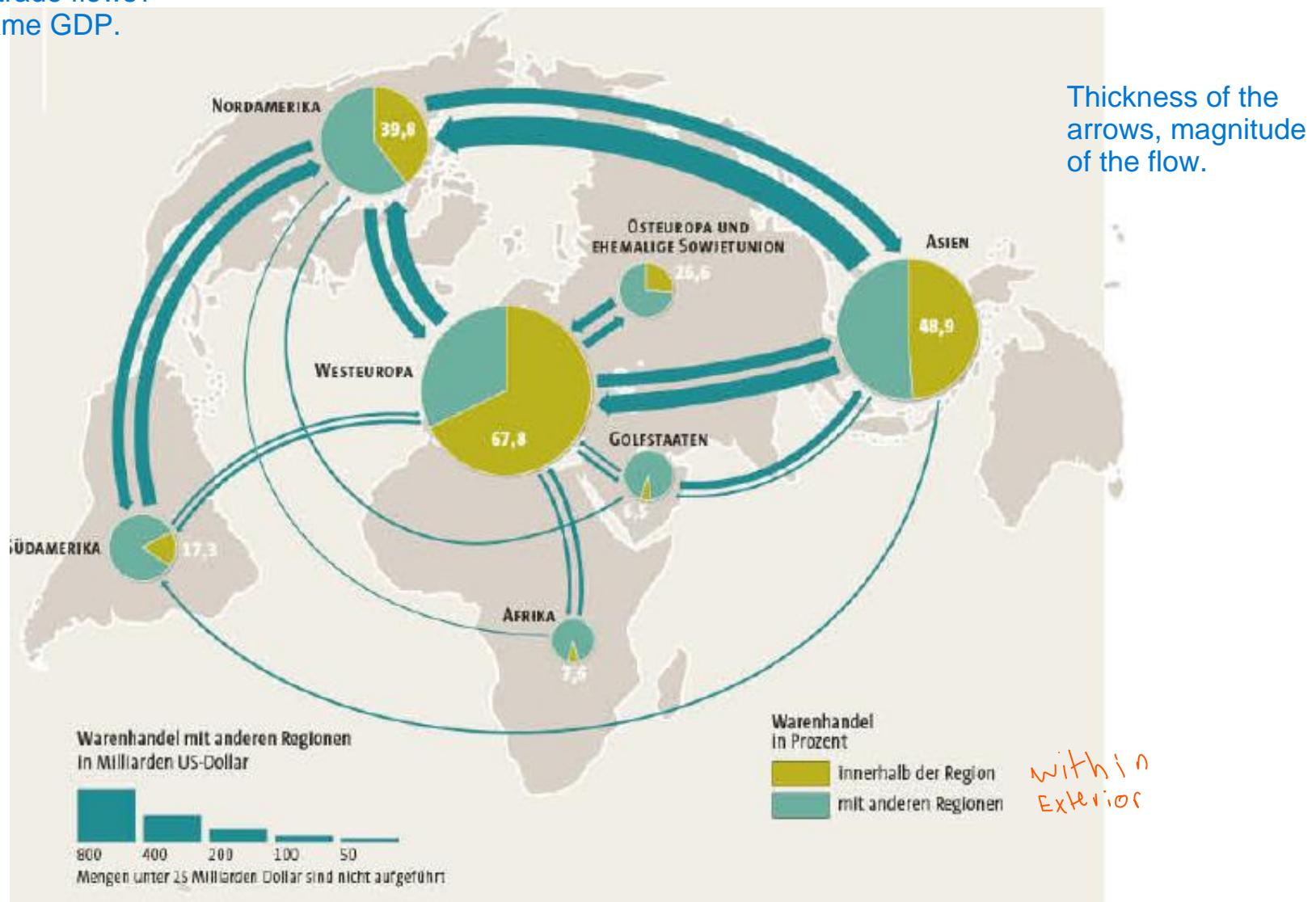
- Rich nations trade mainly with rich nations
 - Poor nations trade mainly with poor nations
 - Unequal income distribution will lead to some overlapping trade

World trade flows

Exists world trade flows?

- EU have same GDP.

Theory that says that the trade depends on the similar income countries.



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Linder's hypothesis

Competitive Advantage (Porter)

External Economies of Scale

Internal Economies of Scale

Porter claims that trade depends on the competitive advantage of countries

Chance	Firm Strategy, Structure and Rivalry	Factor Conditions	Demand Conditions	Related and Supporting Industries	Government
<ul style="list-style-type: none"> - Random events - Natural disasters - Scientific breakthroughs - Terrorist attacks 	<ul style="list-style-type: none"> - Company strategies - Structure of the organization - Managerial system - Intense competition between local rivals 	<ul style="list-style-type: none"> - Natural resources - Human resources - Capital resources - Infrastructure - Scientific knowledge - Technological innovation 	<ul style="list-style-type: none"> - Size of the domestic market - Sophisticated and demanding domestic customers - Customer needs that anticipate those elsewhere 	<ul style="list-style-type: none"> - Presence of competitive related and supporting industries - Domestic suppliers that are strong global players themselves 	<ul style="list-style-type: none"> - Government policies - Industry regulation - Government role as a catalyst and a challenger

Source: B2U (2020)

Government /
institutions

• Education

- b) Education (Primary)
- c) Credit
 - ↳ Saving (cash flow)
 - ↳ Financial market
- d) Government
- e) Education

b) Regulation
Guarantee
Education
(demand right)

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Linder's hypothesis

Competitive Advantage (Porter)

External Economies of Scale

Marginal decreasing cost.

Internal Economies of Scale

- Ricardian. Constant production cost.
- HO. Increasing cost.

External

- Assume perfect competition a lot of small companies
 - ↳ Silicon Valley. X
 - Wall Street. X
 - London X
 - Hong Kong X
 - Eje cafetero X
 - Moda medellín X two small

Different perspectives of the effect of specialization on production costs

- The Ricardian Model assume constant returns to scale
 - Specialization in one product has not impact on unit costs
- Heckscher-Ohlin assume increasing marginal costs
 - Specialization in one product has a negative impact on unit costs
- It is more likely that firms or industries have decreasing marginal costs (**increasing returns to scale**)
 - Specialization in one product has a positive impact on unit costs
- This is especially true for complex manufactured products which require huge amounts of capital and have high R&D costs (e.g. airplanes, cars, computer)

External economies of scale: the cost per unit depends on size of industry

- Many firms are clustered together and form one large industry within a country
- In theory, the cluster consist of many small companies (e.g. textile industry in Northern Italy and in Itagüí)
- Please note, that in the “real world” it rather consists of few large companies as main players: *Silicon Valley, Wall Street, Hollywood*, car industry in Detroit and Baden-Wurtemberg, etc.
- These clusters often form due to historical accidents or due to state intervention (e.g. Volkswagen or Airbus)
- The whole geographically concentrated industry will exhibit economies of scale

External economies of scale emerge due to three main reasons

Suposing perfect competition

- **Specialized Suppliers**

An industrial cluster brings together many firms that collectively provide a large enough market to support a wide range of specialized suppliers.

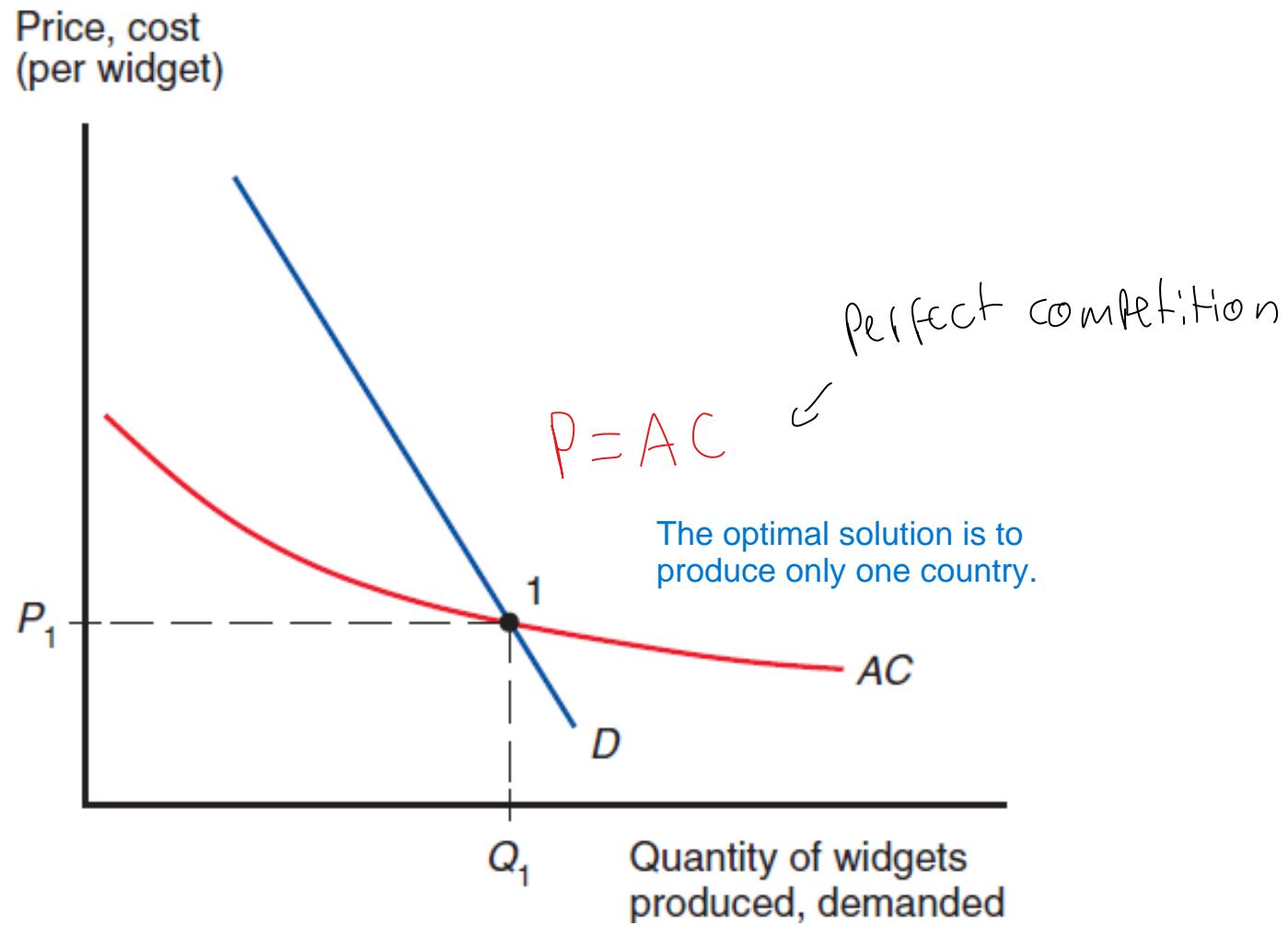
- **Labour Market Pooling**

Workers with highly specialized skills will move to the region as job opportunities are good (low risk of unemployment, higher salary due to competition between firms). Moreover, the universities of the region will specialize in areas that are important for the companies that form the cluster.

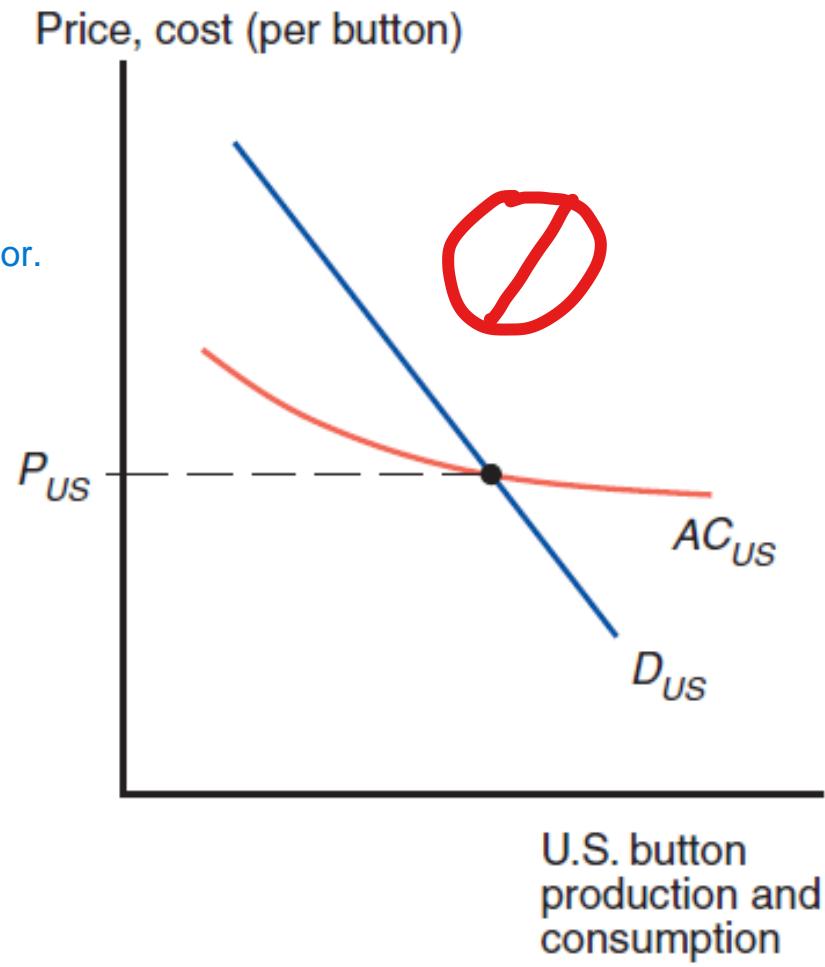
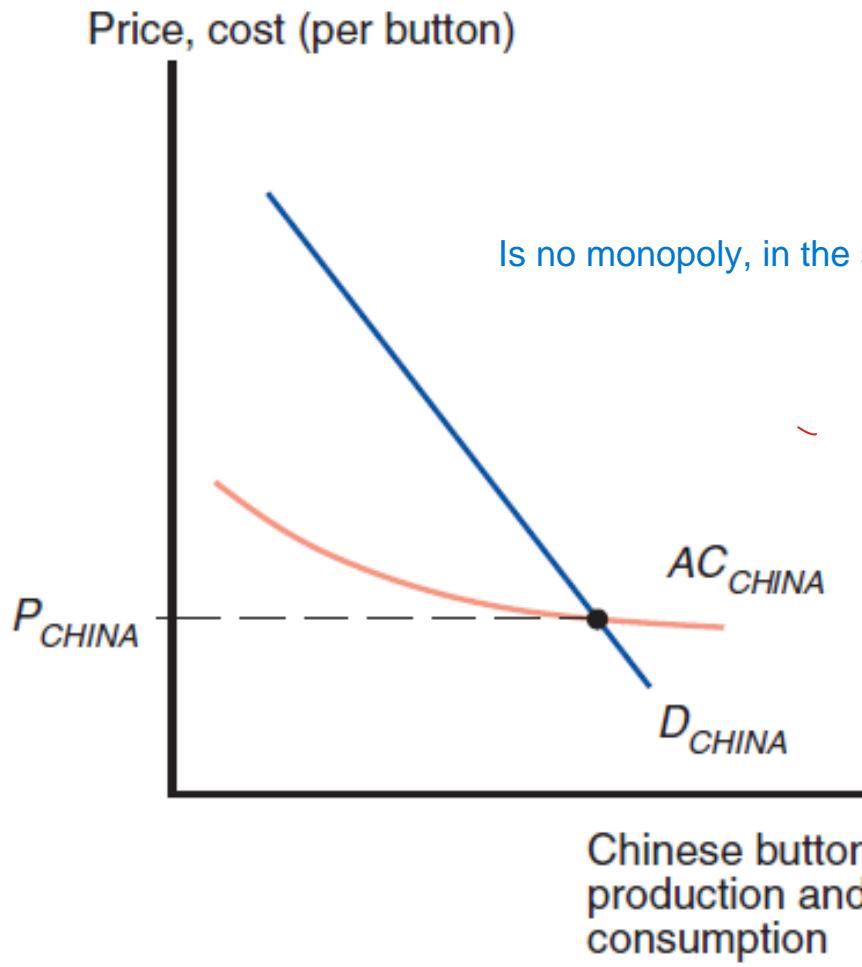
- **Knowledge Spillovers**

The companies that are part of the cluster learn from each other. They study the product and production processes of their competitors. Moreover, the workers of the firms will have social interaction (they will meet in bars etc.) and workers will switch between the different firms and take their knowledge with them.

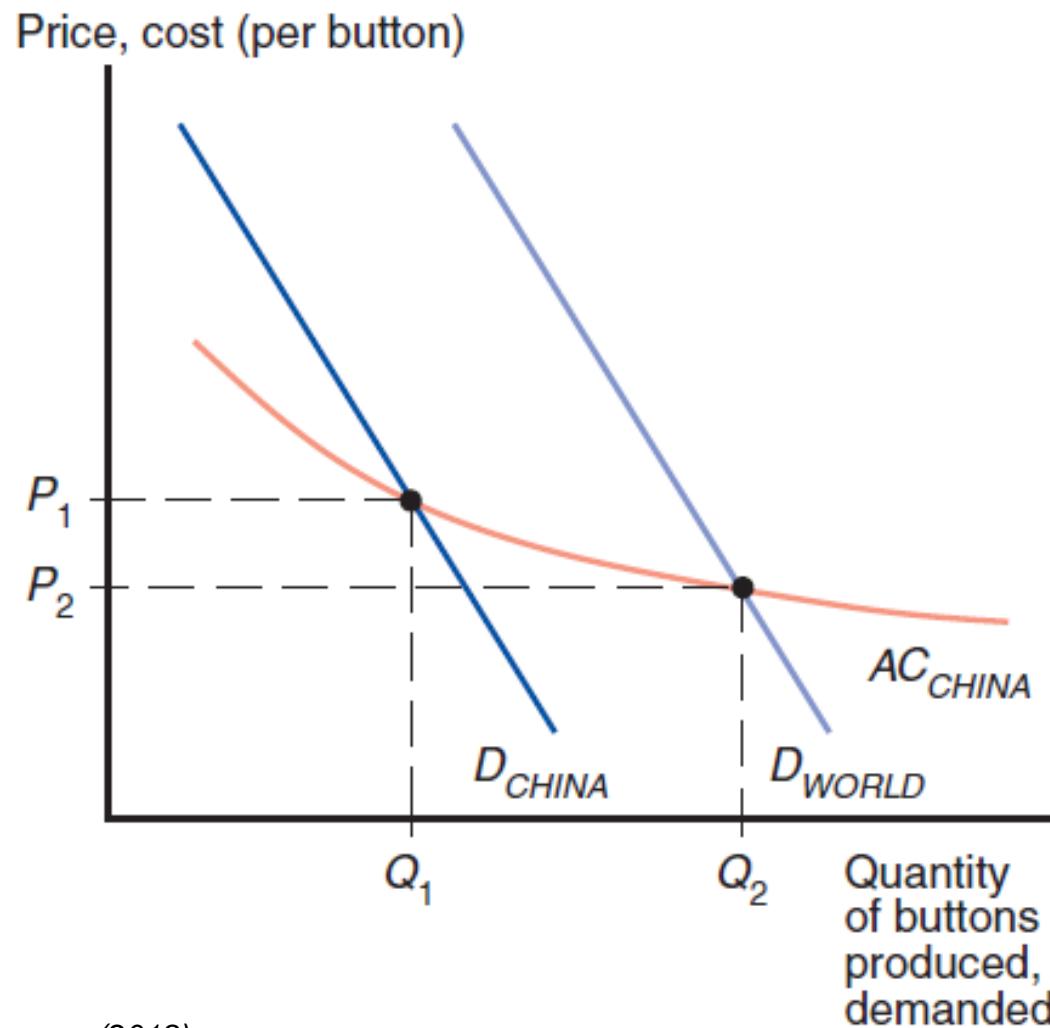
The larger the industries output, the lower the average cost (AC) of production



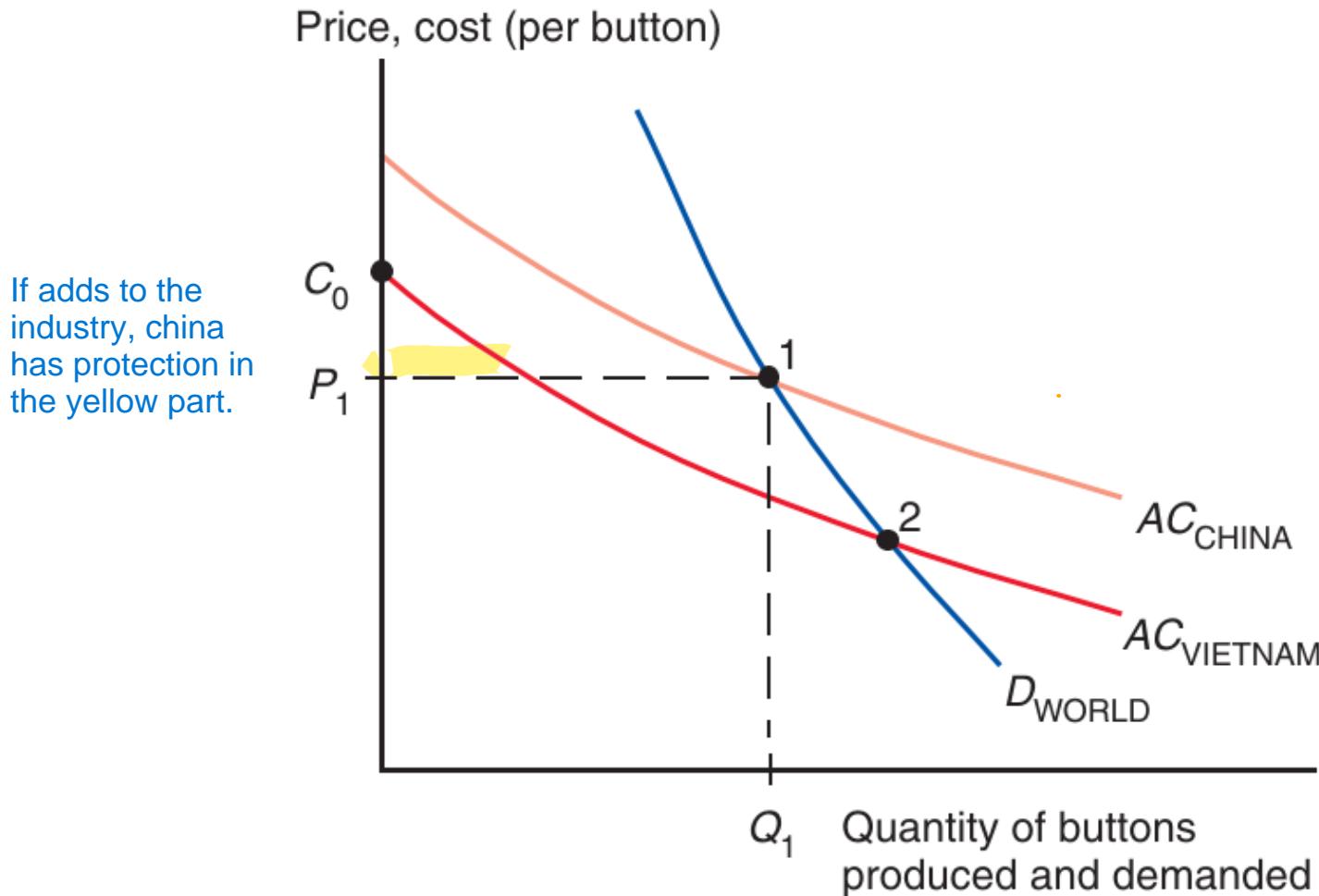
The cost of production of buttons in China is lower than in the US



China will specialize in the production of buttons, and the global price of buttons will fall



Established market shares can prevent the entrance of more productive countries; this has negative on global prices and domestic prices



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External Economies of Scale *Industry*

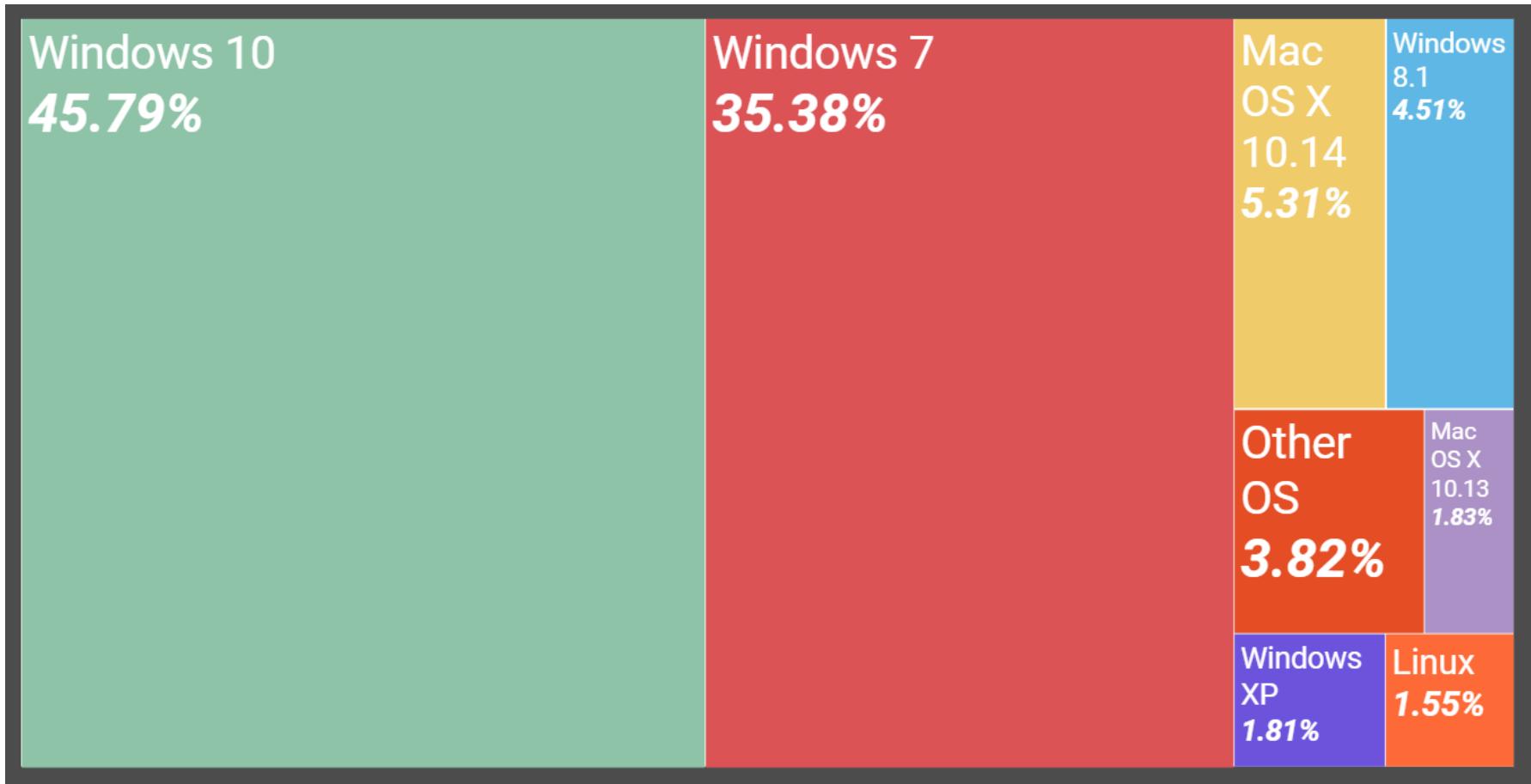
Internal Economies of Scale *Firms*

Nowadays, most global markets are dominated by few multinational TNCs

Oligopolistic competition

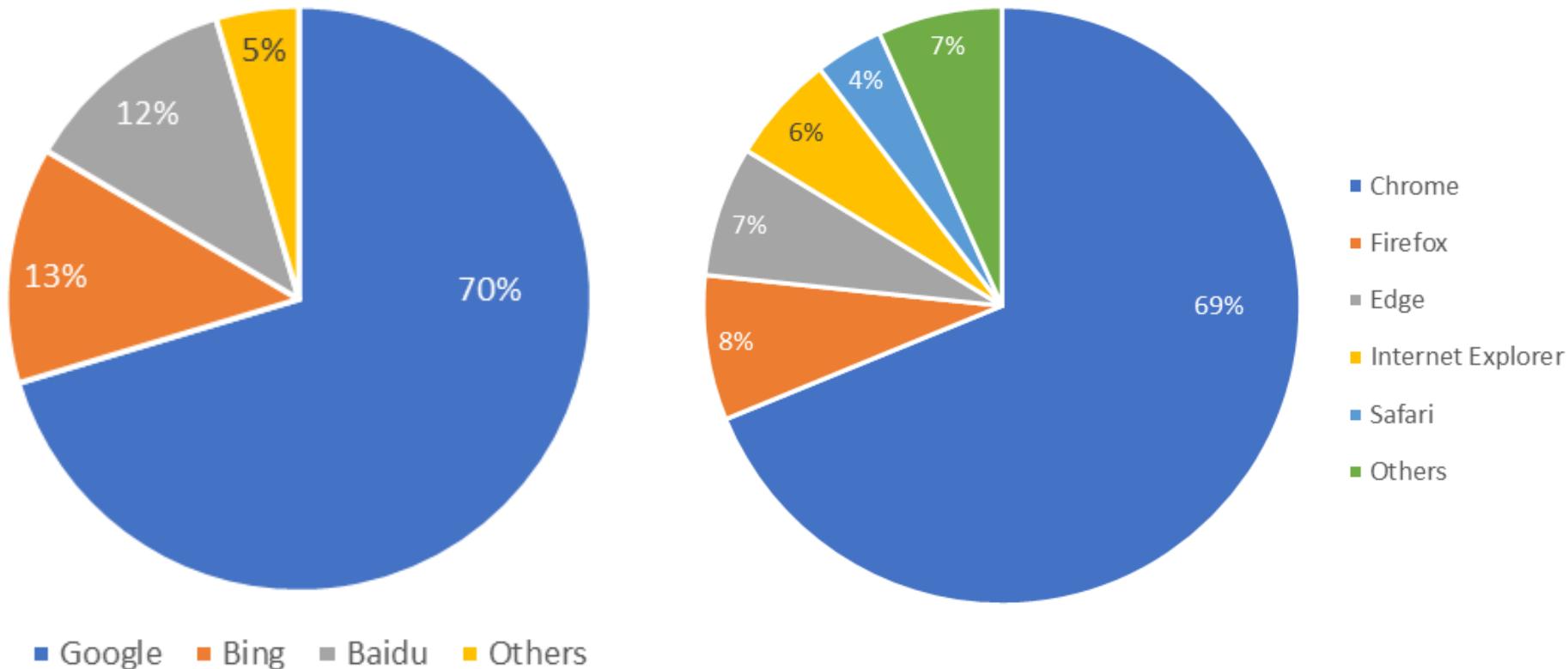


Microsoft dominates the global market of Operating Systems



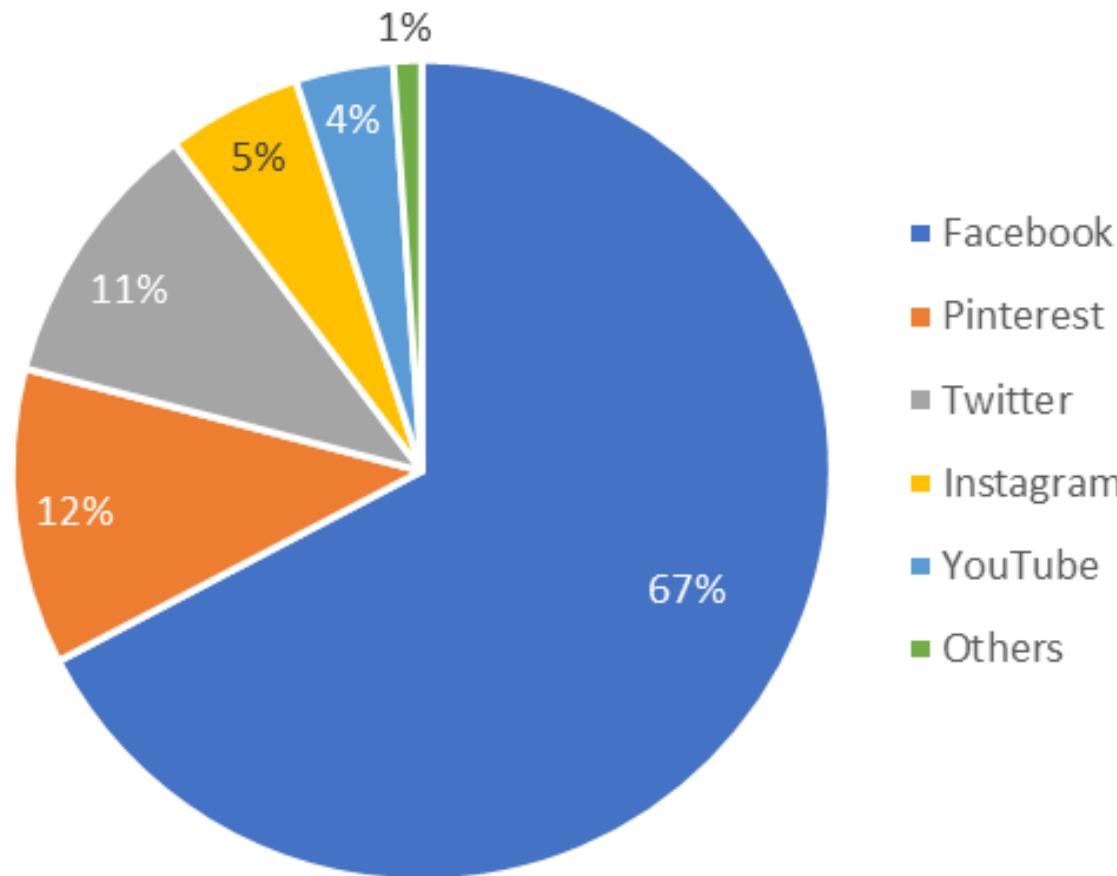
Source: Digital Information World (2019)

Google dominates the global market of Search Engines and Browsers



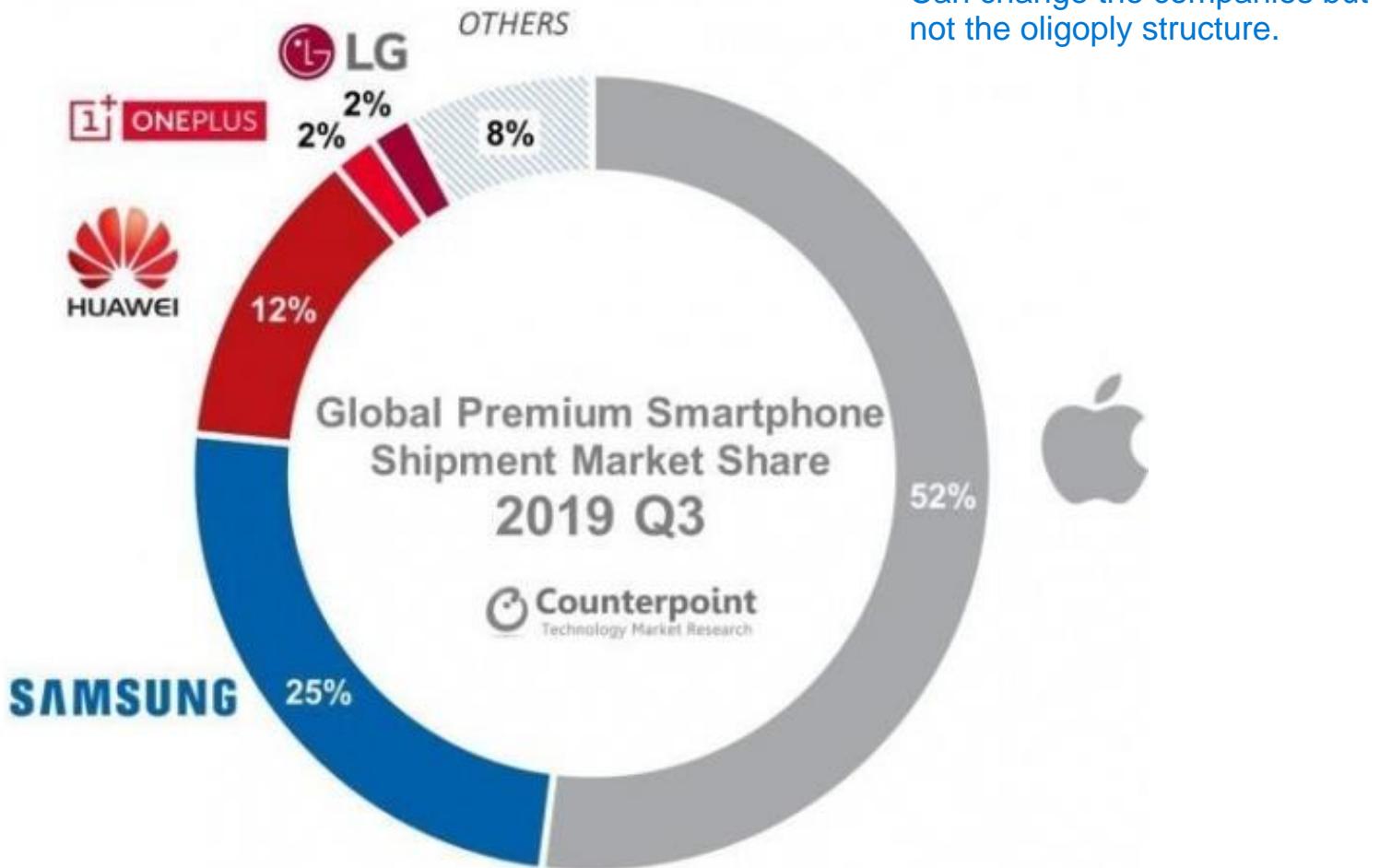
Source: Net Marketshare (2020)

Facebook dominates the global Social Media market



Source: Statcounter (2020)

The global premium smartphone market segment is dominated by 2 brands



Can change the companies but
not the oligopoly structure.

Luxottica is controlling over 80% of the world's major eyewear brands

LUXOTTICA
G R O U P



Persol



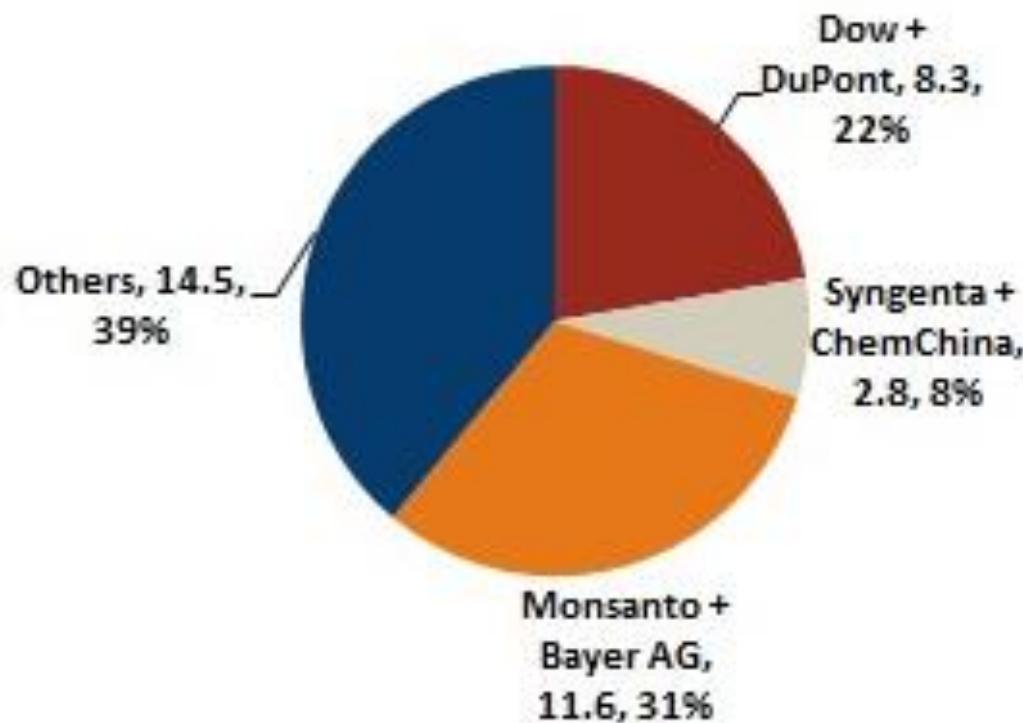
DKNY
DONNA KARAN NEW YORK



D&G
DOLCE & GABBANA

The Brooks Brothers logo features a white anchor icon above the brand name "Brooks Brothers" in a large, elegant, cursive script font.

The global seed industry market is dominated by 3 companies



Source: GMO (2019)

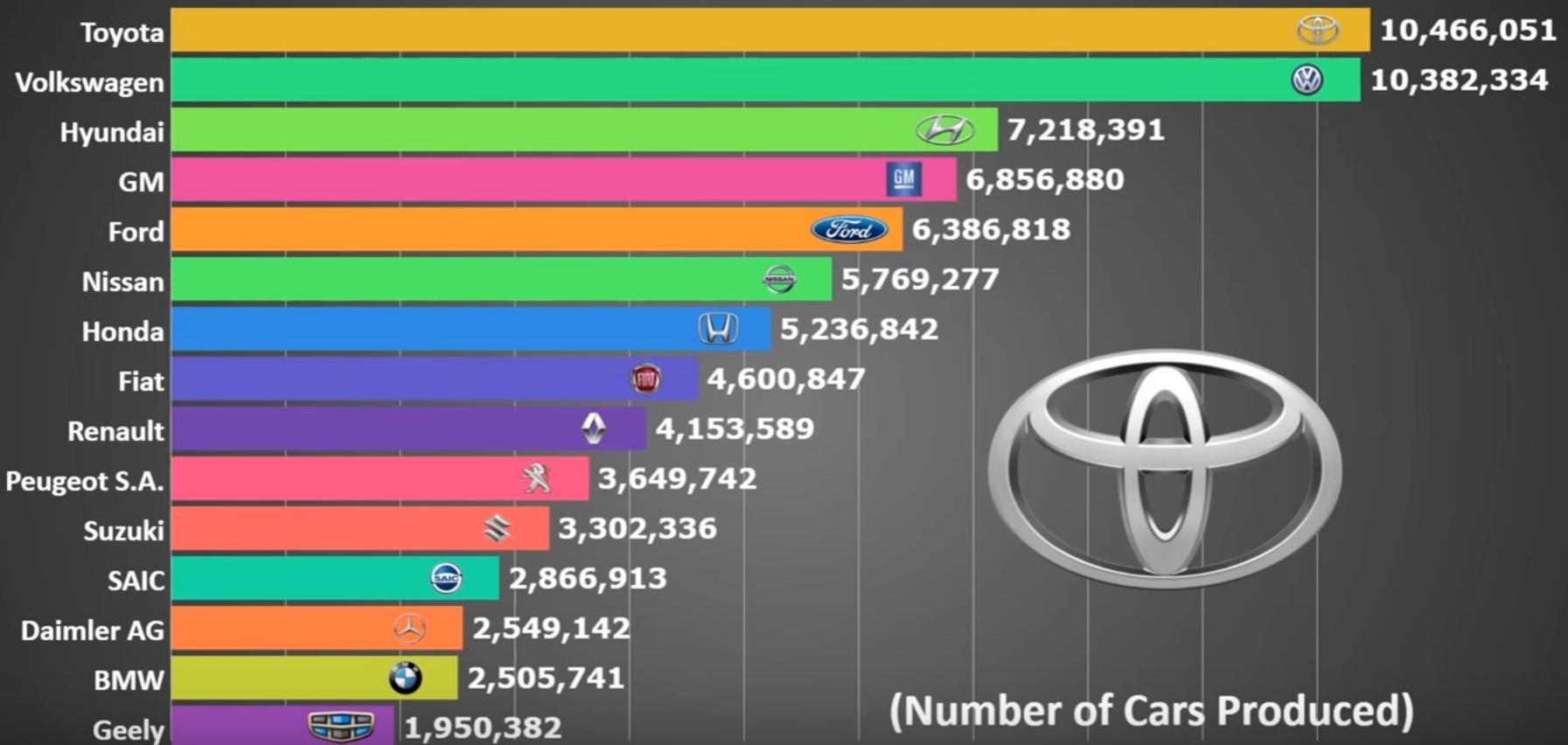
5 companies control 65% of the chocolate market

Percentage of global sales on the chocolate and confectionery market in 2012



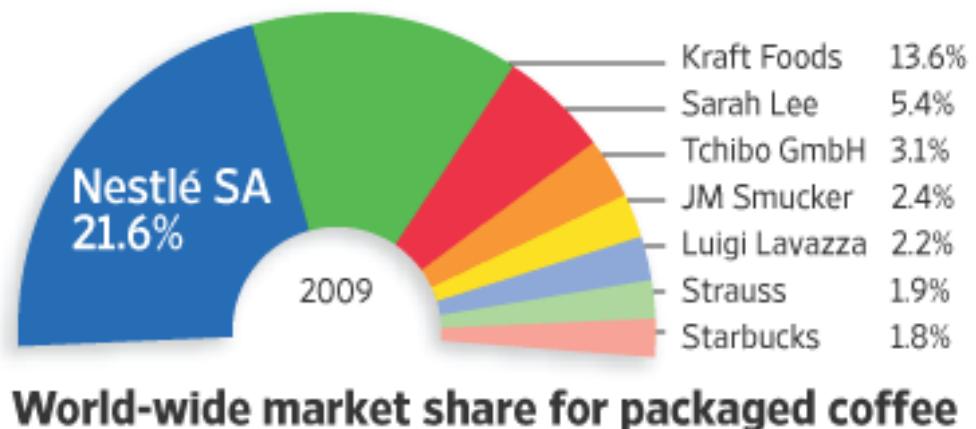
The car market is oligopolistic

World Vehicle Production by Manufacturer 2017



Source: RStats (2019)

The coffee market is also oligopolistic



Source: Euromonitor

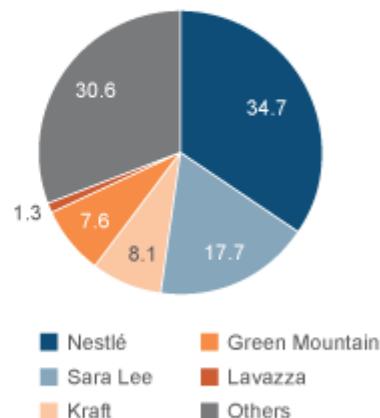
World single-cup coffee market

A small but fast-growing category

Top 10 markets' sales in 2011 – \$ billions

France	1.60
Germany	0.98
USA	0.73
Netherlands	0.47
Italy	0.31
Spain	0.30
Switzerland	0.25
Belgium	0.22
Austria	0.16
Portugal	0.16

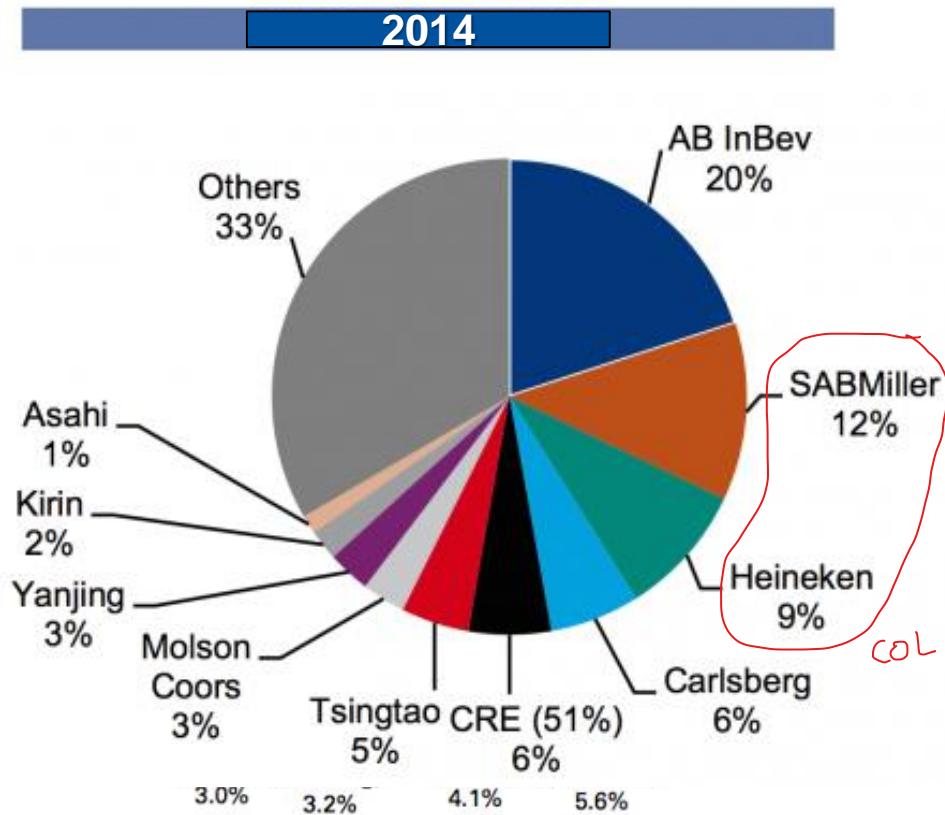
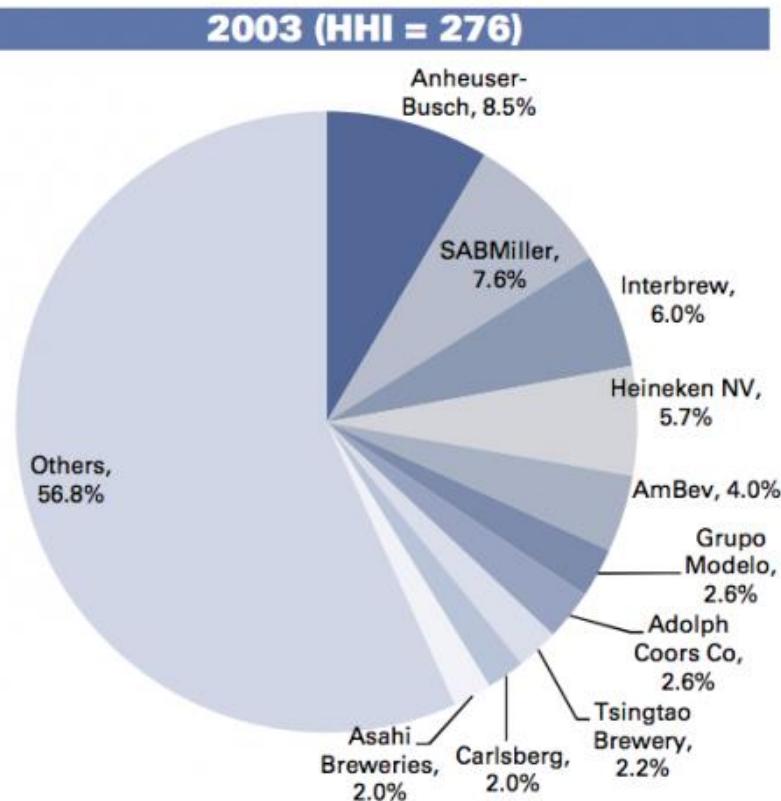
2011 market share – percent



50% del mercado global de cerveza es en los manos de 5 empresas

Exhibit 6: Global beer has seen consolidation amongst key players...

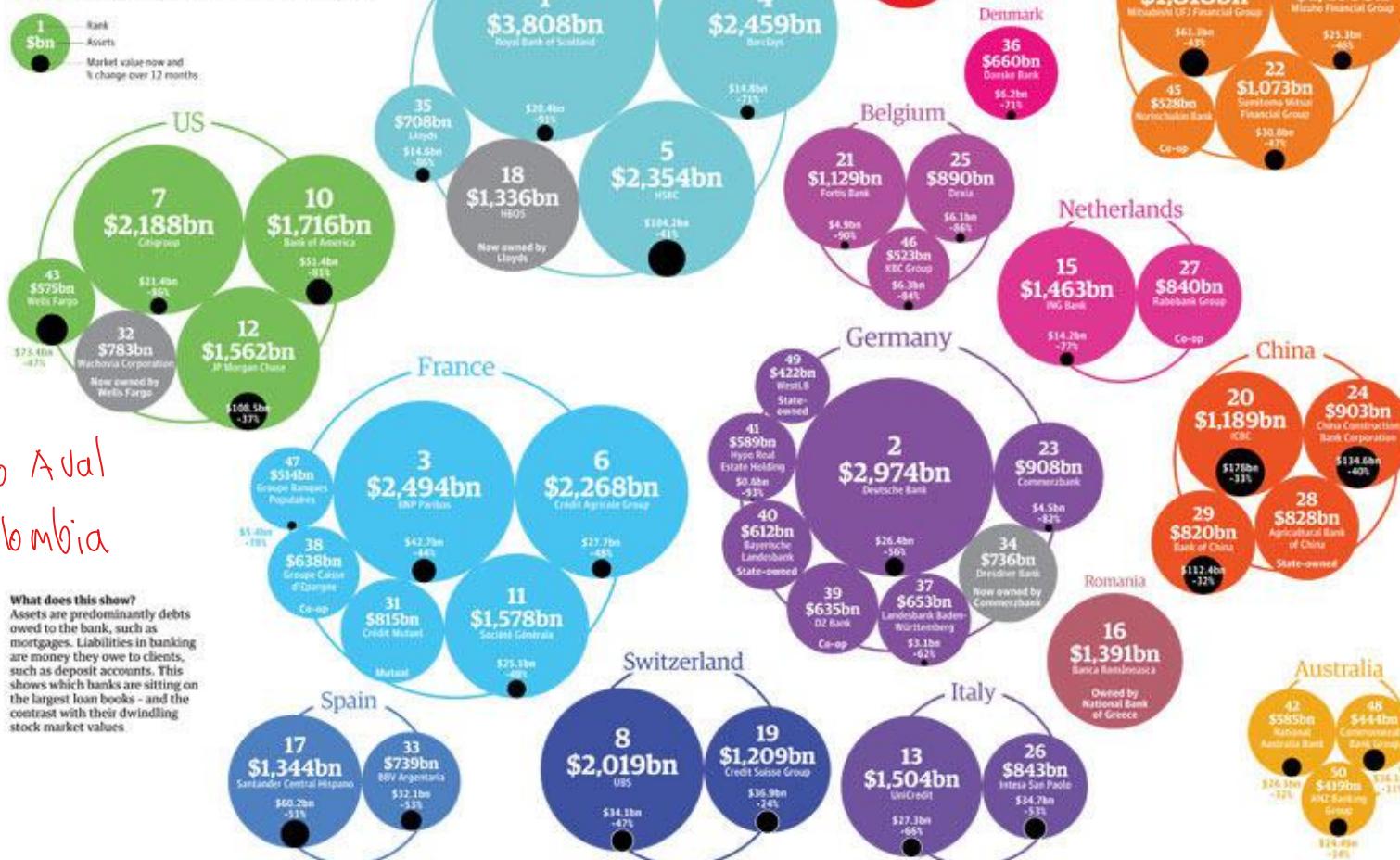
Global market share



The financial sector is also highly oligopolistic

The world's top 50 banks -
and the institutions that
no longer exist

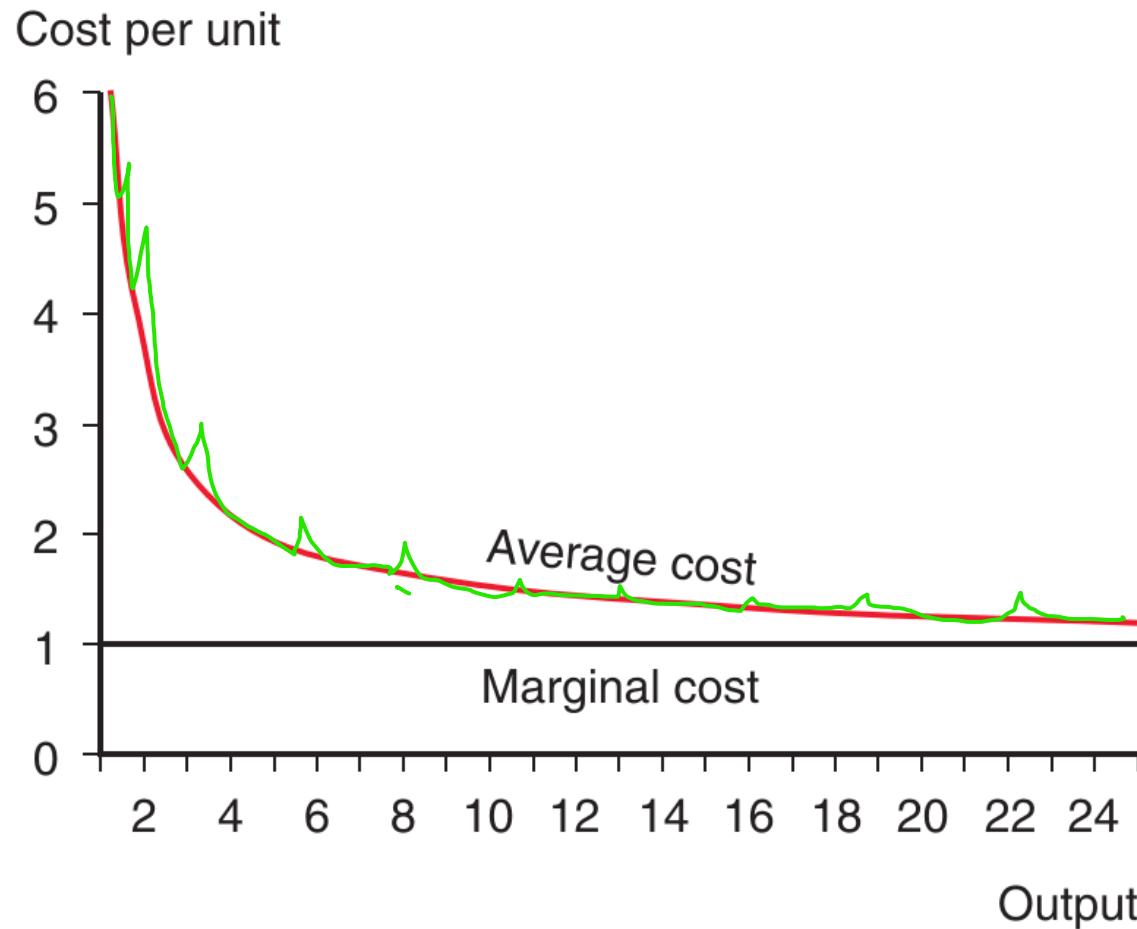
Ranked by The Banker magazine, based on latest assets figures



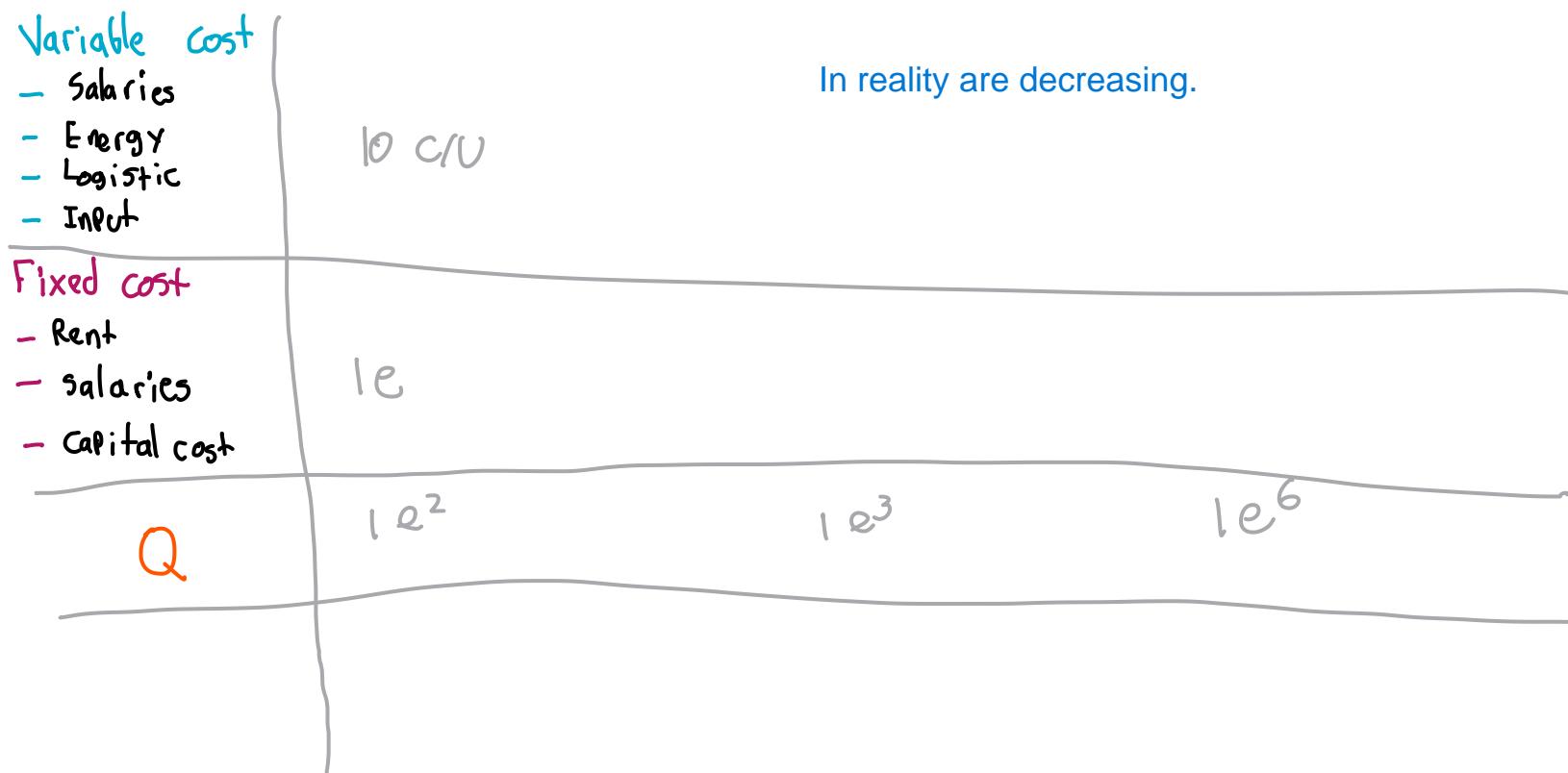
“40% of the control over the economic value of TNCs in the world is held ... by a group of 147 TNCs in the core ... 3/4 of the core are financial intermediaries”

Open the
market for
reduce the
oligopolies
didn't
function.

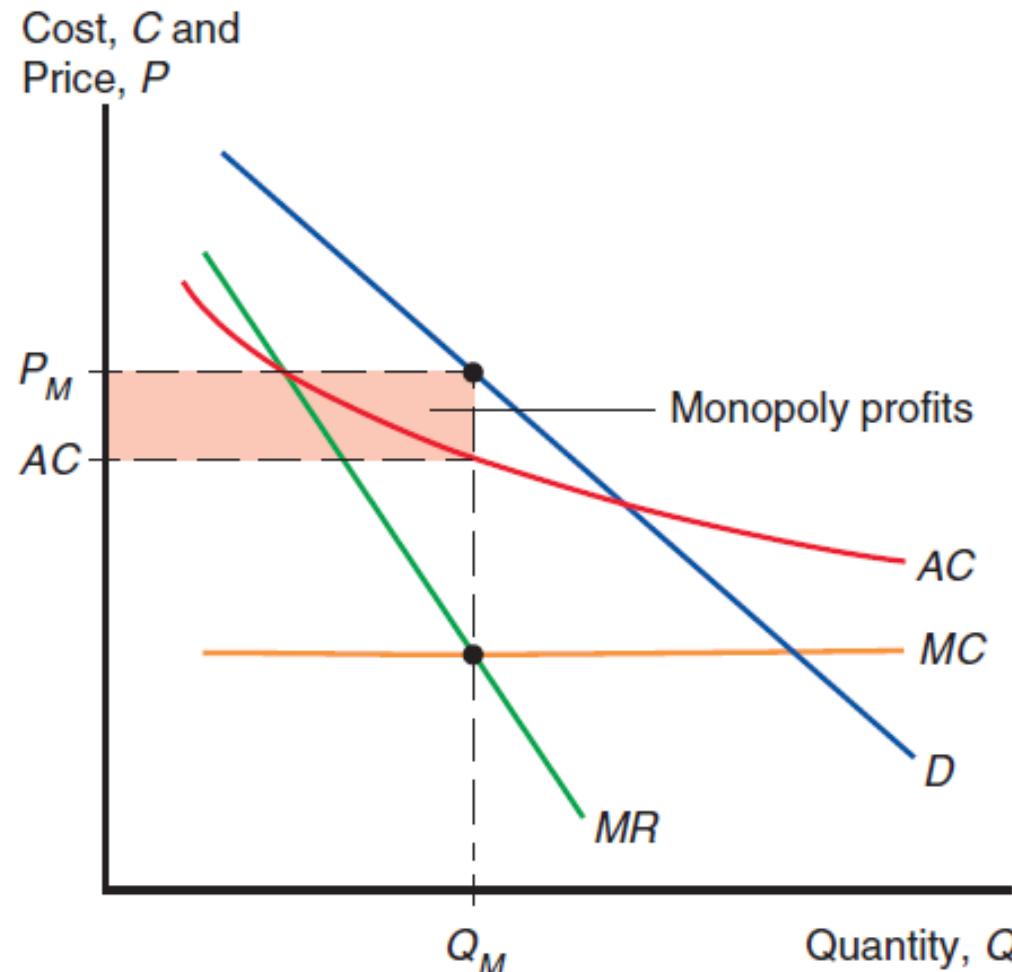
Rank	Economic actor name	Country	NACE code	Network position	Cumul. network control (TM, %)
1	BARCLAYS PLC	GB	6512	SCC	4.05
2	CAPITAL GROUP COMPANIES INC, THE	US	6713	IN	6.66
3	FMR CORP	US	6713	IN	8.94
4	AXA	FR	6712	SCC	11.21
5	STATE STREET CORPORATION	US	6713	SCC	13.02
6	JPMORGAN CHASE & CO.	US	6512	SCC	14.55
7	LEGAL & GENERAL GROUP PLC	GB	6603	SCC	16.02
8	VANGUARD GROUP, INC., THE	US	7415	IN	17.25
9	UBS AG	CH	6512	SCC	18.46
10	MERRILL LYNCH & CO., INC.	US	6712	SCC	19.45
11	WELLINGTON MANAGEMENT CO. L.L.P.	US	6713	IN	20.33
12	DEUTSCHE BANK AG	DE	6512	SCC	21.17
13	FRANKLIN RESOURCES, INC.	US	6512	SCC	21.99
14	CREDIT SUISSE GROUP	CH	6512	SCC	22.81
15	WALTON ENTERPRISES LLC	US	2923	T&T	23.56
16	BANK OF NEW YORK MELLON CORP.	US	6512	IN	24.28
17	NATIXIS	FR	6512	SCC	24.98
18	GOLDMAN SACHS GROUP, INC., THE	US	6712	SCC	25.64
19	T. ROWE PRICE GROUP, INC.	US	6713	SCC	26.29
20	LEGG MASON, INC.	US	6712	SCC	26.92
21	MORGAN STANLEY	US	6712	SCC	27.56
22	MITSUBISHI UFJ FINANCIAL GROUP, INC.	JP	6512	SCC	28.16
23	NORTHERN TRUST CORPORATION	US	6512	SCC	28.72
24	SOCIÉTÉ GÉNÉRALE	FR	6512	SCC	29.26
25	BANK OF AMERICA CORPORATION	US	6512	SCC	29.79
26	LLOYDS TSB GROUP PLC	GB	6512	SCC	30.30
27	INVESCO PLC	GB	6523	SCC	30.82
28	ALLIANZ SE	DE	7415	SCC	31.32
29	TIAA	US	6601	IN	32.24
30	OLD MUTUAL PUBLIC LIMITED COMPANY	GB	6601	SCC	32.69
31	AVIVA PLC	GB	6601	SCC	33.14

Internal economies of scale: the cost per unit depends on the size of the firm

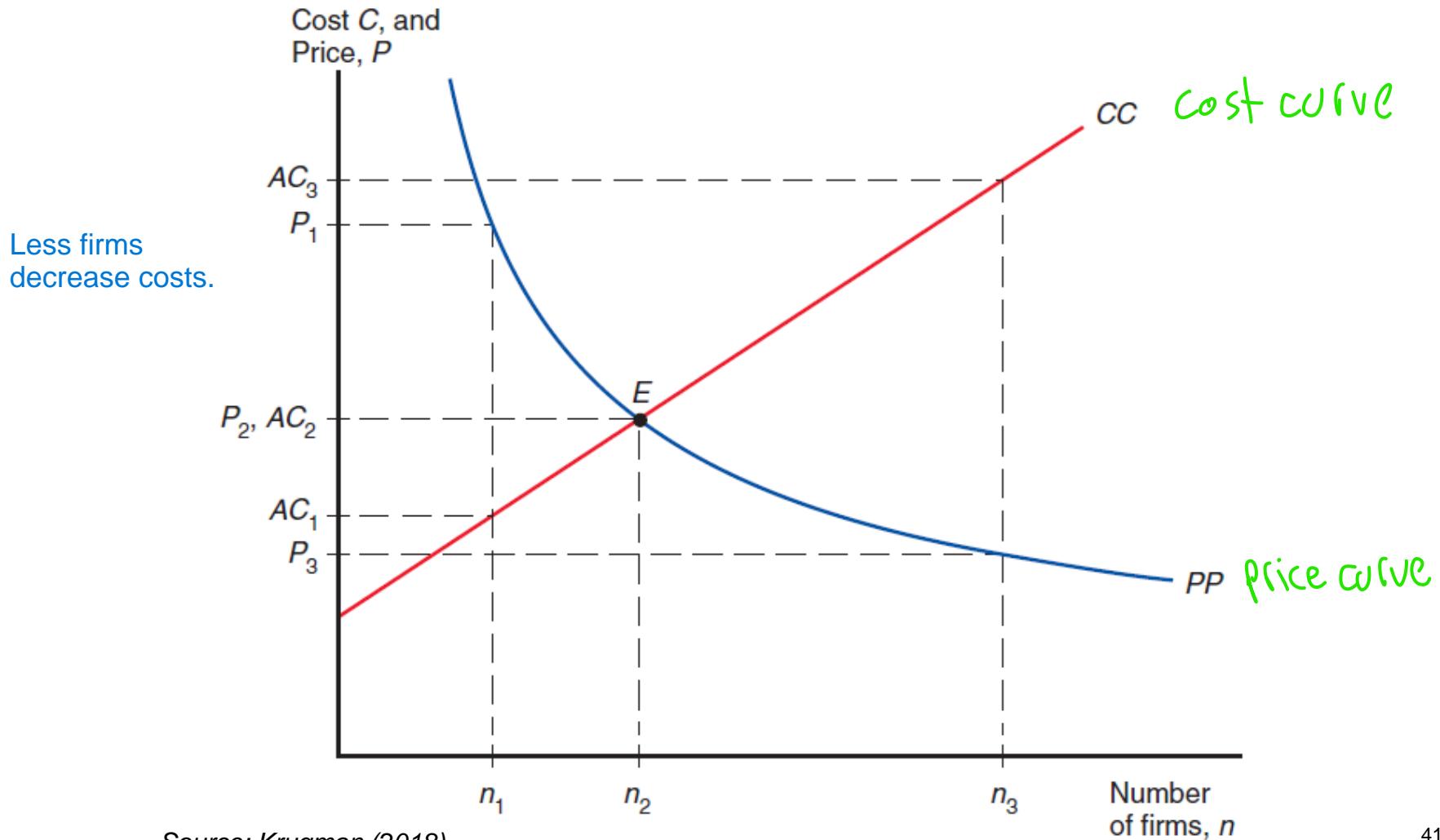
Average costs decline due to a lower fixed costs per unit - example



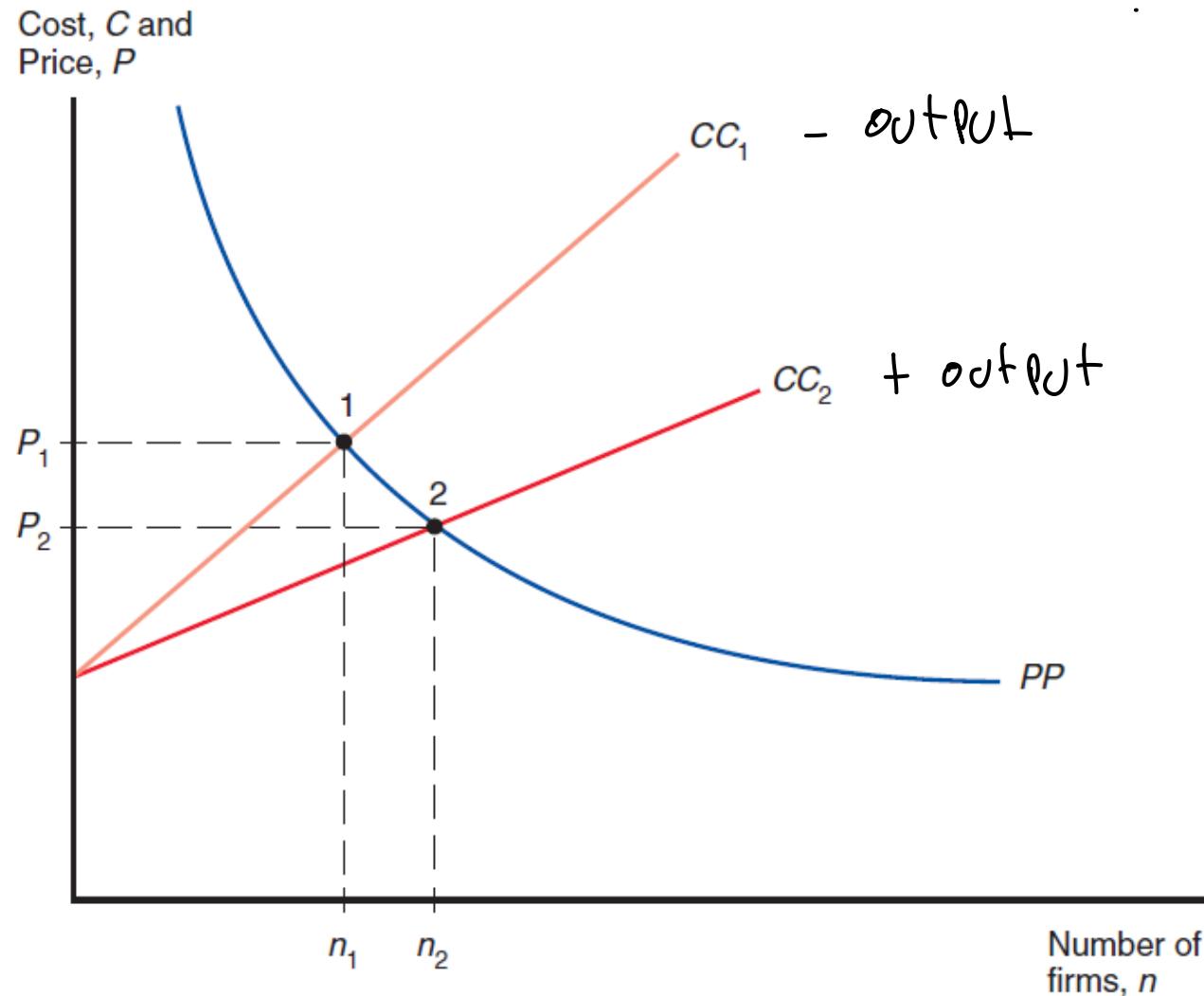
Monopolistic firms are price setters and choose an output at which MR equals MC



In a oligopolistic market each additional firms leads to an increase of costs (CC) and a decrease of the price (PP) due to competition



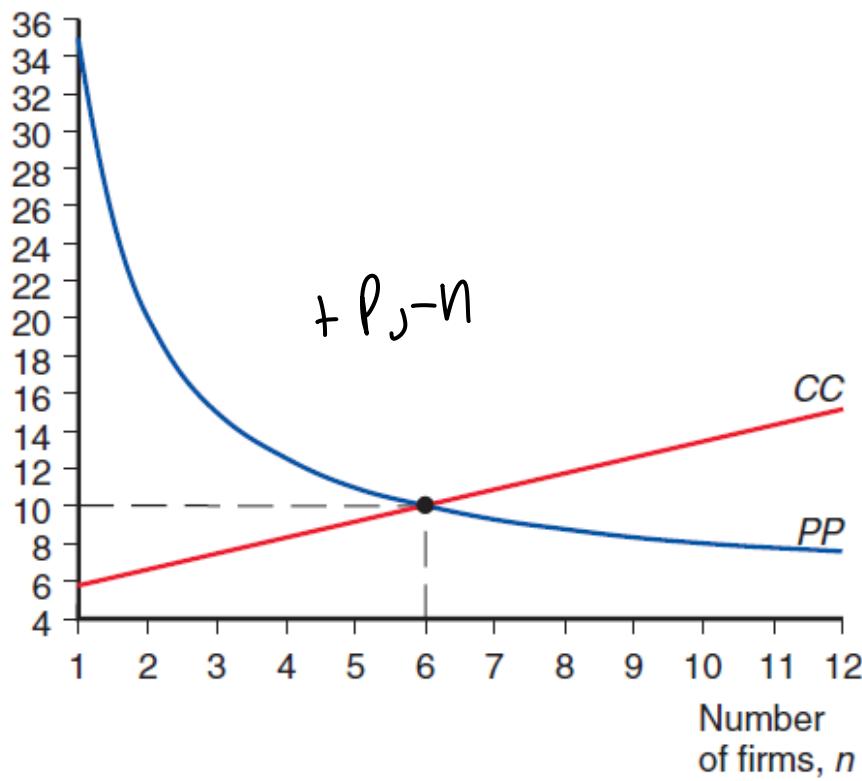
A larger market allows each firm to produce more which leads to lower average cost (decrease from CC_1 to CC_2), thus more firms can enter the market and the price falls



Source: Krugman (2018)

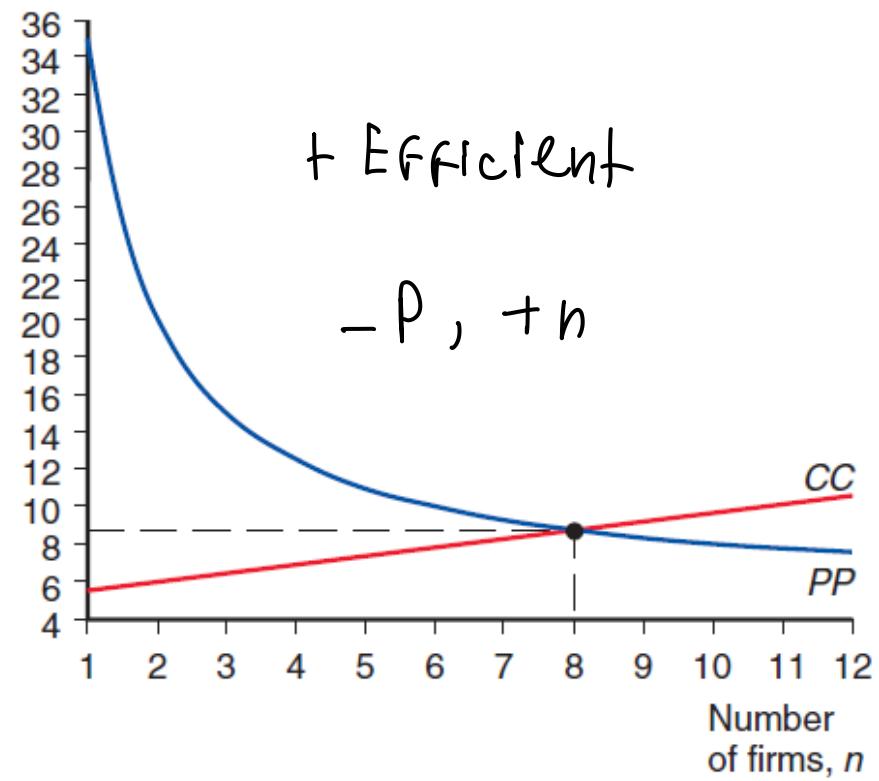
Hypothetical Example of Gains from Market Integration – separated markets

Price per auto,
in thousands of dollars



(a) Home

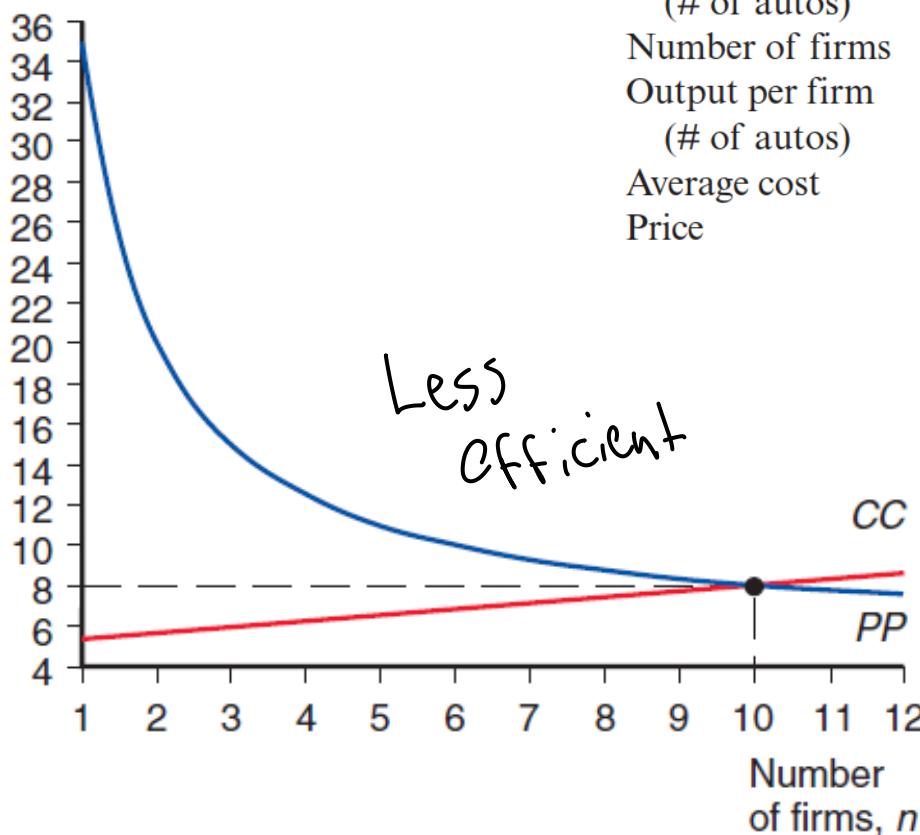
Price per auto,
in thousands of dollars



(b) Foreign

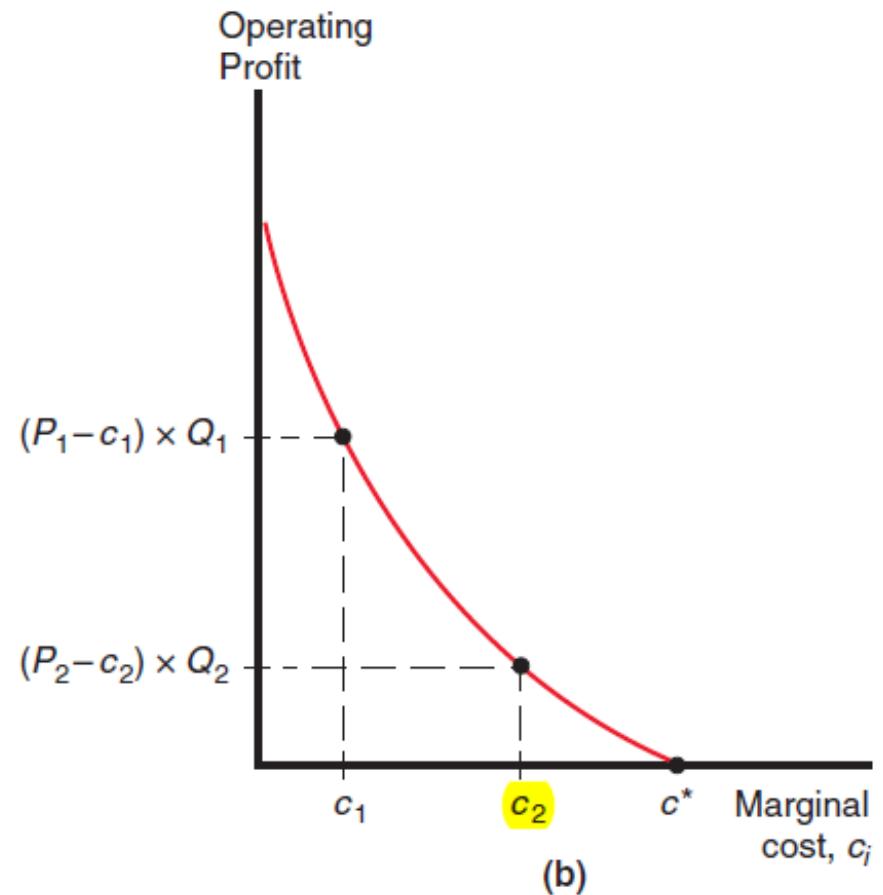
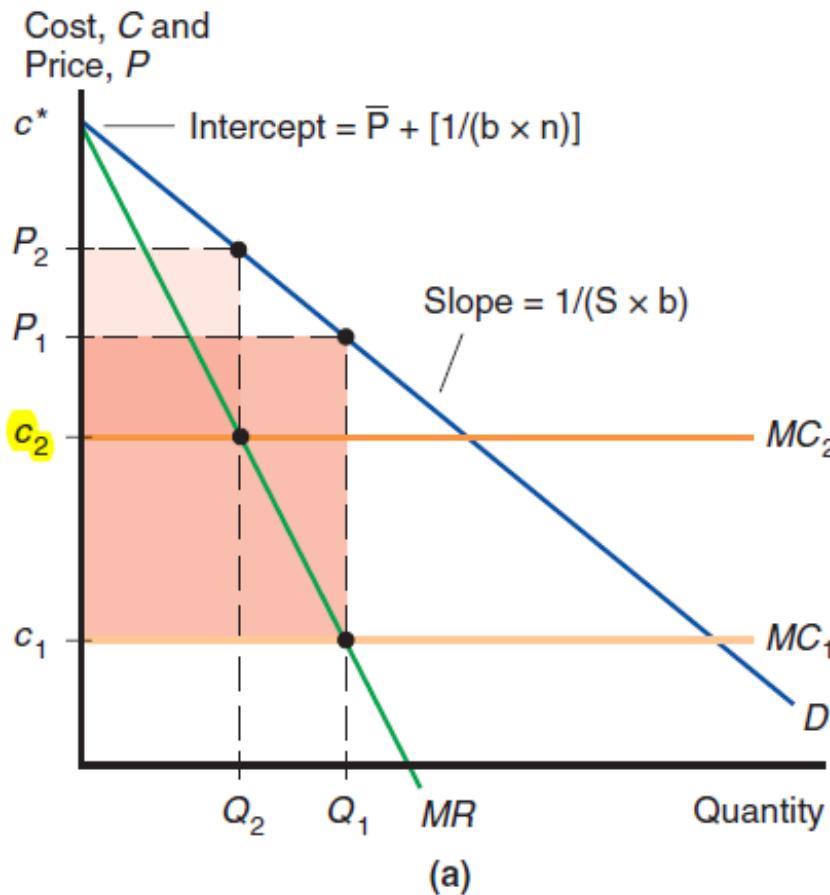
Hypothetical Example of Gains from Market Integration – integrated market

Price per auto,
in thousands of dollars



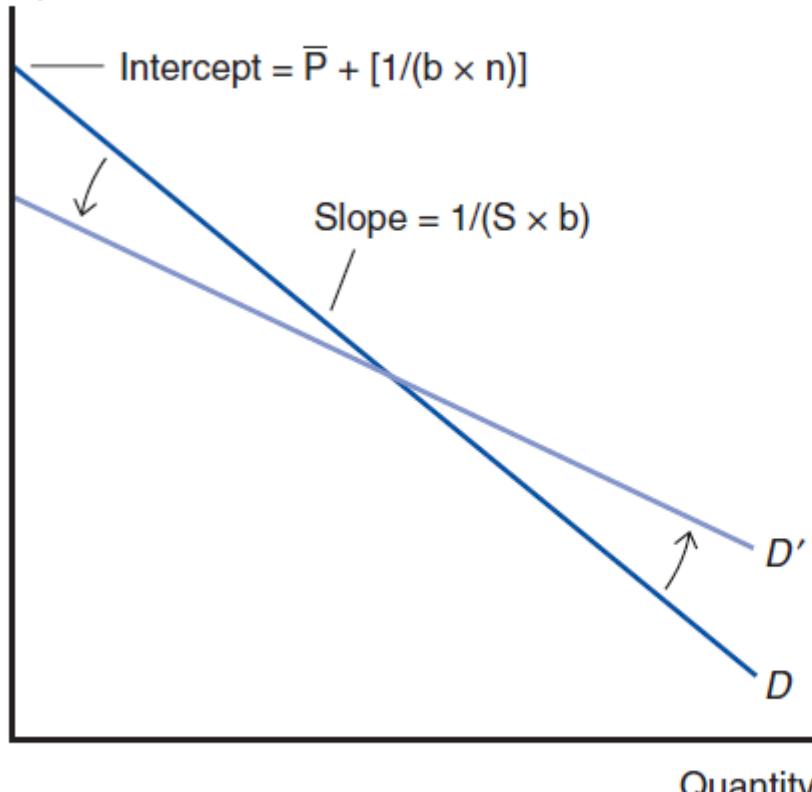
	Home Market, before Trade	Foreign Market, before Trade	Integrated Market, after Trade
Industry output (# of autos)	900,000	1,600,000	2,500,000
Number of firms	6	8	10
Output per firm (# of autos)	150,000	200,000	250,000
Average cost	\$10,000	\$8,750	\$8,000
Price	\$10,000	\$8,750	\$8,000

All firms face the same demand curve (D) but some firms are more efficient than others, i.e. the marginal cost curves differ between firms (MC_1 vs. MC_2)



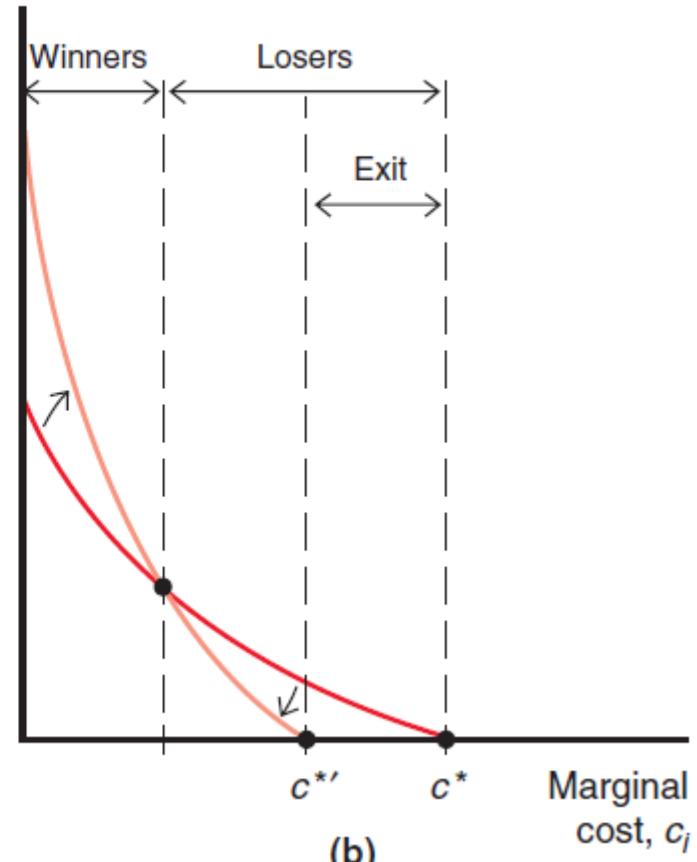
With trade D shifts to D'; firms with MC above the new cutoff c^* are forced to exit; firms with the lowest MC levels increase their profits

Cost, C and
Price, P



(a)

Operating
Profit



(b)

Has Colombia a competitive advantage in the production of high-value added products?

*Please use for your analysis the data from the Tables of the **Global Competitiveness Report** (2019, pg. 174), identifying the variables that relate to the attributes that define if a country has a competitive advantage (according to Porter's theory)*