Flash Economics
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What consequences if returns to scale are growing?

Returns to scale are growing in many industries and in contemporary economies (the marginal cost of production decreases with the size of production).

This has very important consequences on the functioning of economies:

- To develop companies in a region, this region must have a large, dynamic domestic market;
- To grow companies in strategic sectors, they must be protected from competition from larger companies in other regions (China has done this, but the European Union has not);
- The trend is the appearance of large-scale monopolies with the resulting negative effects (abnormal rise in profit margins, sterilisation of research, etc.).

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Decreasing marginal cost of production

In contemporary economies, **more and more industries are characterised by decreasing marginal costs of production**. These are **industries with fixed costs;** when they produce more, they spread these fixed costs over a larger number of goods and services sold, hence the decline in the marginal cost of production.

We can take as examples:

- **Internet and new technology companies;** the large companies in this sector have very large market shares thanks to this capacity to lower prices when they become larger **(Tables 1A** and **B)**;

Table 1A: Market shares (as %)

	Europe	United States
Google	93.6	86.7
Amazon	22.0	49.0
Facebook	75.3	52.0
Microsoft	45.0	36.7
Apple	22.7	38.6
Netflix*	46.0	51.0
Twitter	5.6	7.1
Pinterest	10.4	35.0
YouTube	3.2	1.3
Instagram	2.1	1.8
Uber	41.0	87.6
Aibnb	11.0	9.2

(*) For Europe = only Nordic countries

Sources: Statista, Startcounter, Techcrunch, Natixis

Table 1B: Market shares in China (2018)

	As %
Baidu	66
Tencent	51.1
Alibaba	60
Huawei	24.6

Sources: Startcounter, Statista, Natixis

- **Car manufacturers (Table 2)**, as the main cost is the design of the car;

Table 2: Market shares of car manufacturers worldwide (2018)

	As %
Volkswagen Group	11.4
Toyota Group	11.1
Renault-Nissan Alliance	10.9
General Motors	9.2
Hyundai-Kia	7.9
Ford Group	6
Honda Motor	5.5
Fiat-Chrysler	5.1
PSA	4.3
Suzuki	3.4
Mercedes Daimler	2.9
BMW	2.6
Geely Group	2.4
Mazda	1.7
Tata	1.4
Changan	1.3
Subaru	1.1
Dongfeng Motor	1
BAIC	1
SAIC Motor	1
Great Wall Motors	1
Chery Automobile	0.8
GAC Group	0.6
BYD	0.5
Mahindra	0.5

Sources: Focus2move, Statista, Natixis

- **Aircraft manufacturers**, hence the virtual duopoly Airbus-Boeing;
- **Pharmaceuticals (Table 3)**, given the research costs.

Table 3: World's top 10 pharmaceutical companies - 2017

Company	Country	Market share (as %)	Revenues* (USD bn)
Novartis	Switzerland	5.3	54
PFIZER	United States	5	51
Johnson & Johnson	United States	4.8	49
Sanofi	France	4.4	45
ROCHE	Switzerland	4.1	42
MERK & CO	United States	4.1	42
GLAXOSMITHKLINE	United Kingdom	3.8	39
ABBVIE	United States	3.5	35
GILEAD SCIENCES	United States	3.4	34
LILLY	United States	2.8	28

(*) Manufacturer's price excl. taxes

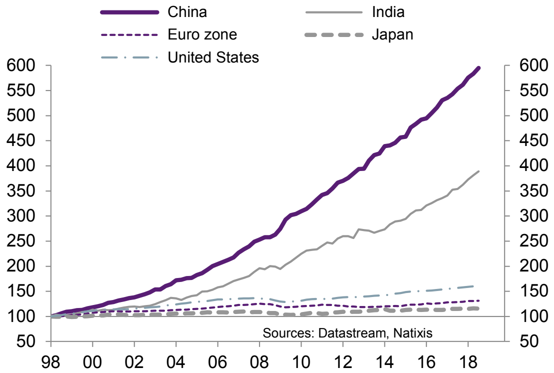
Sources: MyPharma, Natixis

We could find other examples: logistics, agribusiness, etc.

What consequences of the presence of growing returns to scale (decreasing marginal costs) on the functioning of economies?

1- **If companies want to develop and be efficient in a regional market, this regional market must be fast-growing**, so that the increase in the size of demand allows the companies to take advantage of the growing returns to scale. This gives an advantage to Chinese, Indian and, to a lesser degree, US companies compared with European or Japanese companies **(Chart 1)**.

Chart 1
Domestic demand (in volume terms, 1998:1 = 100)



2- If a region wants to grow companies in strategic sectors when there are larger companies in these same sectors in other regions, **the companies in this region must be protected from the larger companies in other regions that are more efficient. This is what China has done, as opposed to Europe,** to develop internet companies (**Tables 1A** and **B** above) or companies needed to develop renewable energies **(Tables 4A** and **B)**.

Table 4A: Manufacturers of solar cells (market share, as %)

Company	Country of origin	Market share
Trina Solar	China	10
JA Solar	China	8
Jinko Solar	China	7
Hanwha Q-Cells	South Korea - Germany	6
Canadian Solar	China - Canada	5
Yingli Green Energy	China	5
First Solar	United States	4
Shungfeng-Suntech	China	3
Motech Solar	Taiwan	2
NeoSolar	Brazil	2
Others	Rest of the world	48

Sources: Statista 2016, Natixis

Table 4B: Largest manufacturers of electric batteries (2016)

Company	Country	Production (MWh)
PANASONIC	Japan	6,665
BYD	China	4,020
LG Chem	South Korea	2,285
AESC (Nissan / Nec)	Japan	1,622
Mitsubishi / GS Yuasa	Japan	600
Samsung	South Korea	1,157
Epower	China	489
Beijing Pride Power	China	397
Air Litium (Lyoyang)	China	283
Wanxiang	China	268

Sources: FT, EV, CleanTechnica, Natixis

3- **If large companies are more efficient and competitive than small companies, a tendency for monopolies to appear**, with the resulting negative effects of the presence of a monopoly: **rising profit margins (Chart 2), inefficient R&D**, as companies use new ideas (patents) to protect themselves against possible entrants to the markets, not to create new products (hence the slowdown in total factor productivity while spending on R&D increases, **Chart 3**).

Chart 2
OECD*: GDP deflator and unit labour costs
(1998:1 = 100)

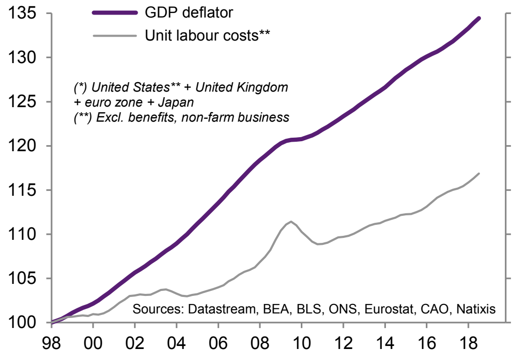
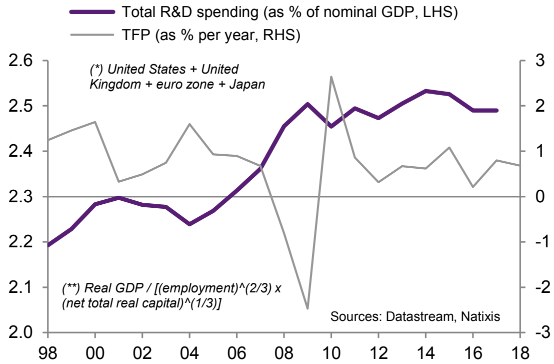


Chart 3
OECD*: R&D spending and total factor productivity**



Conclusion: Need to think differently if there are growing returns to scale

If there are growing returns to scale (decreasing marginal costs) it must be considered that there is a premium for large companies and companies that sell in rapidly growing markets; and that the tendency is the making of monopolies.

Industrial, macroeconomic and competition policies must therefore be adjusted to this new environment.

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