

Economic complexity

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"Are we entering in a winner-takes-all economy? Why and what can we do about it?"

According to a study published by RBC Wealth Management and Capgemini Financial Services, the number of people worldwide with more than \$1 million to invest has climbed to a record \$12 million in 2012. The global wealth of this group reached \$46.2 trillion.

While these figures show that there is a phenomenon of concentration of the richest, the concentration of the ultra-rich is even more significant. Indeed, in 2018, the 26 richest billionaires will hold as much money as half of humanity, according to an Oxford report.

This concentration of the economy can be illustrated by this table. We can see that of the twenty-five most highly valued companies in the world in 2020, twenty of them are American. All these companies alone represent approximately 3,203 billion dollars, the equivalent of the 147 lowest GDPs in 2018.

SECTION TWO

	Brand	Category	Brand Value 2020 \$Mil.	Brand Contribution	Brand Value % Change 2020 vs. 2019	Rank Change	Country of Origin
1	 amazon	Retail	415,855	4	+32%	0	
2		Technology	352,206	4	+14%	0	
3	 Microsoft	Technology	326,544	4	+30%	1	
4	 Google	Technology	323,601	4	+5%	-1	
5	 VISA	Payments	186,809	4	+5%	0	
6	 Alibaba Group 阿里巴巴集团	Retail	152,525	3	+16%	1	
7	 Tencent 腾讯	Technology	150,978	4	+15%	1	
8	 FACEBOOK	Technology	147,190	4	-7%	-2	
9	 McDonald's	Fast Food	129,321	4	-1%	0	
10	 Mastercard	Payments	108,129	4	+18%	2	
11	 AT&T	Telecom Providers	105,833	3	-2%	-1	
12	 verizon	Telecom Providers	94,662	4	+0%	-1	
13	 Coca-Cola	Beverages	84,022	5	+4%	1	
14	 IBM	Technology	83,667	4	-3%	-1	
15	 Marlboro	Tobacco	58,247	3	-19%	0	
16		Retail	57,585	3	+8%	3	
17	 SAP	Technology	57,578	3	+0%	-1	
18		Alcohol	53,755	4	+58%	17	
19	 LOUIS VUITTON	Luxury	51,777	4	+10%	3	
20		Logistics	50,748	4	-8%	-2	
21		Apparel	49,962	4	+5%	0	
22	 Disney	Entertainment	48,802	4	-14%	-5	
23	 PayPal	Payments	48,453	5	+10%	3	
24		Fast Food	47,753	4	+4%	0	
25	 xfinity	Telecom Providers	46,973	3	-4%	-5	

Source: BrandZ™ / Kantar (including data from Bloomberg)
Brand contribution measures the influence of brand alone on financial value, on a scale of 1 to 5, 5 being the highest

If we look at heritage, we can also see that the richest 1% hold more than 40% of the world's heritage.

Répartition du patrimoine mondial selon le niveau de patrimoine			
	Nombre d'adultes en millions	Part dans la population en %	Part détenue dans le patrimoine mondial
Patrimoine supérieur à 1 million de dollars	47	0,9	43,9
Patrimoine compris entre 100 000 et 1 million de dollars	499	9,8	38,9
Patrimoine compris entre 10 000 et 100 000 dollars	1 661	32,6	15,5
Patrimoine inférieur à 10 000 dollars	2 883	56,6	1,8
Ensemble de la population adulte	5 090	100	100

The same applies to international trade. The value of world merchandise trade was \$20 trillion in 2018. The least developed countries account for less than 1% of world trade while the top 10 countries account for more than 51% of the world total.

So what factors played a role in the emergence of the winner-takes-all concept?

On the one hand, the competitive system allows the best performers to progress to the detriment of the "losers". Indeed, in order to maximise their profits, companies will try to find a competitive advantage either through a strategy of product differentiation or a strategy of minimising production costs.

On the other hand, oligopoly multiplication plays a role in the concentration of the economy. An oligopoly is a situation designating a market in which competition is limited due to the small number of suppliers and the large number of demanders. Several sectors of activity are known to be conducive to oligopolies. For example, the pharmaceutical sector, the mobile telephone sector in France, or the aeronautics industry are oligopolies.

Stock markets and other similar systems also lead to a win-takes-all situation. In this table, we see a clear increase in the share of the financial economy in total transactions.

La sphère économique mondiale

(unité : le téra dollar soit le millier de milliards de dollars)

	2002	2003	2004	2005	2006	2007
Economie financière						
Marchés dérivés	693,1	874,3	1 152,3	1 406,9	1 808,0	2 288,0
Marché des changes	408,2	754,0	936,3	1 112,4	876,9	1 058,3
Marchés financiers	39,3	33,3	42,3	55,2	65,8	77,9
Economie réelle						
PIB mondial	32,3	37,0	41,6	44,8	48,4	54,3
Transactions totales	1 172,9	1 698,6	2 172,5	2 619,3	2 799,1	3 478,5

Transactions in the so-called real economy, estimated by world GDP, would have represented in 2007 only 1.6% of all transactions (financial and real).

In this way, people who can invest on the stock exchange will in most cases be able to increase their financial capital. They will then be able to invest again in the stock market and so on.

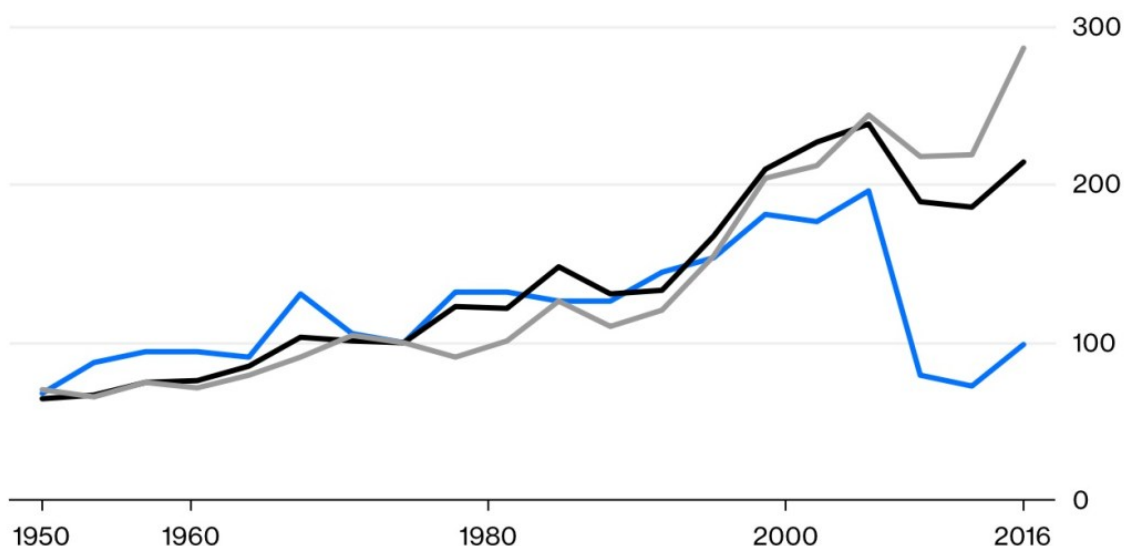
This situation can be illustrated by the Mathieu effect. Robert Merton has used this effect to highlight the correlation between fame and the importance given to the work of scientists. In a very general way, he shows the mechanisms by which the most favoured tend to increase their advantage over others.

The concept of winner-takes-all has never been as verified as it was after the crisis of 2008. Indeed, one can see from the diagram that the impact of the crisis on the modern class and the working class is considerable in contrast to the effects it had on the richest classes. One of the reasons for this difference is that the rich and the poor do not have the asset allocations. Indeed, the rich hold financial assets while the poor hold more real estate assets.

Hurt More at the Bottom, Recovered Less

Change in index of household wealth*

Bottom 50% Middle 40% Top 10%

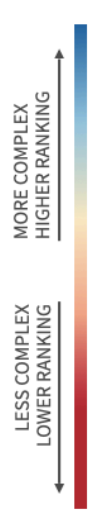


Source: Federal Reserve Bank of Minneapolis

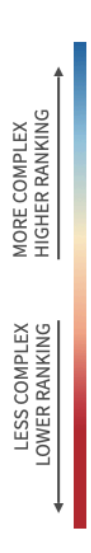
* Index 1971 = 100

As we have already mentioned, there has been a phenomenon of concentration of wealth in recent years. This phenomenon is directly linked to the complexity of the economy. "Economic development requires the accumulation of productive knowledge and its use in both more and more complex industries." Thus, the more complex a country's economy is, the greater the diversification of its production, which will enable it to export more products.

Indeed, we see a strong correlation between a country's wealth and its index of economic complexity.



RANK	COUNTRY	ECONOMIC COMPLEXITY INDEX (ECI)	CHANGE IN 5 YEARS (2013 - 2018)	COMPLEXITY OUTLOOK INDEX RANK
1	Japan	2.43	=	81
2	Switzerland	2.17	↑ 1	33
3	South Korea	2.11	↑ 4	35
4	Germany	2.09	↓ 2	133
5	Singapore	1.85	=	42
6	Austria	1.81	↓ 2	93
7	Czechia	1.80	↓ 1	63
8	Sweden	1.70	=	43
9	Hungary	1.66	=	39
10	Slovenia	1.62	↑ 3	38
11	United States of America	1.55	↑ 1	55



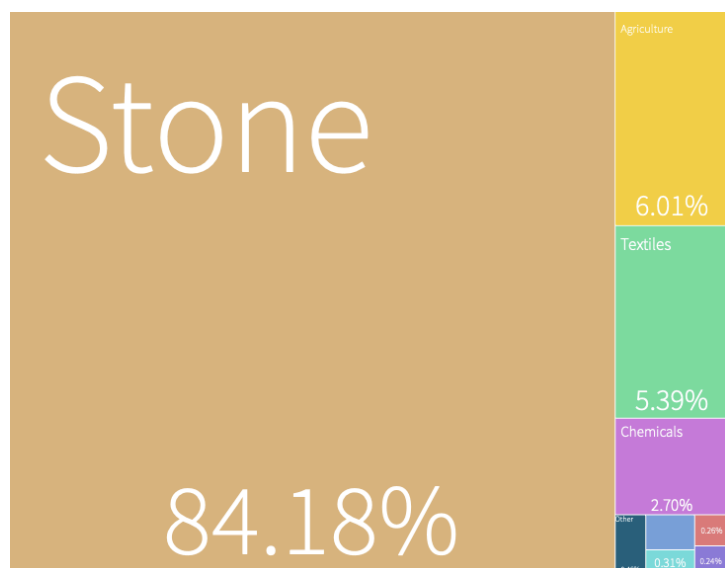
RANK	COUNTRY	ECONOMIC COMPLEXITY INDEX (ECI)	CHANGE IN 5 YEARS (2013 - 2018)	COMPLEXITY OUTLOOK INDEX RANK
123	Yemen	-1.31	↓ 1	120
124	Azerbaijan	-1.37	↑ 1	132
125	Republic of the Congo	-1.42	↑ 3	116
126	Gabon	-1.43	↑ 4	117
127	Guinea	-1.43	↓ 4	125
128	Libya	-1.46	↑ 5	119
129	Cameroon	-1.60	↓ 19	121
130	Papua New Guinea	-1.68	↓ 3	130
131	Angola	-1.71	↓ 7	126
132	Democratic Republic of the Congo	-1.80	↓ 6	127
133	Nigeria	-1.90	↓ 2	131

Rich and developed countries tend to have a more complex economy. This can be seen through the example of food imports into countries.

In the United States and France, for example, the economy is much more complex, with processed foods in consumption patterns. For less developed countries such as Mali and Ecuador, the products come mainly from local agriculture. They are generally raw food.

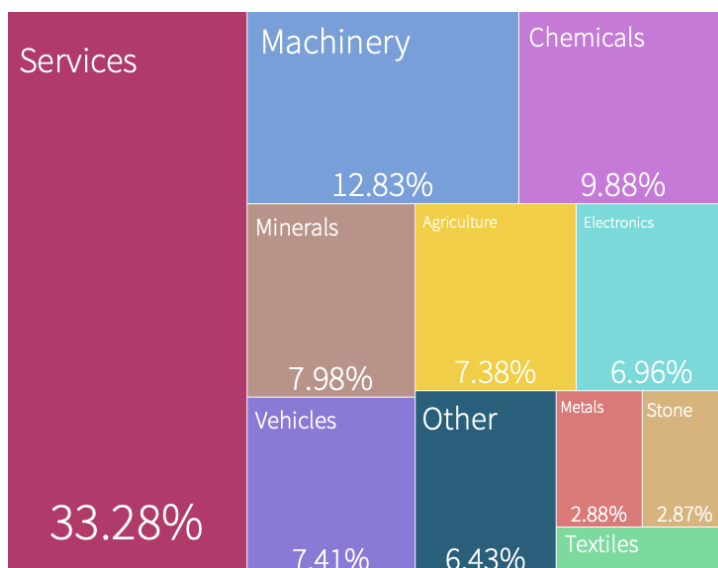
What did Mali export in 2018?

Shown: \$1.57B Total:\$1.57B



What did United States of America export in 2018?

Shown: \$2.48T Total:\$2.48T



The same applies to exports. We can see that there is a great diversity of products for France and the United States, while Ecuador and Mali export few products: bananas and crude oil for Ecuador, and gold and raw cotton for Mali.

This example explains the differences in export earnings. Indeed, it is better to export complex products, not raw products, because they have a higher added value.

New technologies and globalisation allow for a deeper division of knowledge: as the economy becomes more complex, people have to reduce their general skills and specialise in one area. This division of knowledge also creates space for hierarchy and inequality. Some activities require only a very low level of skills, while others can only be performed by a small number of us. Complexity makes key resources highly concentrated.

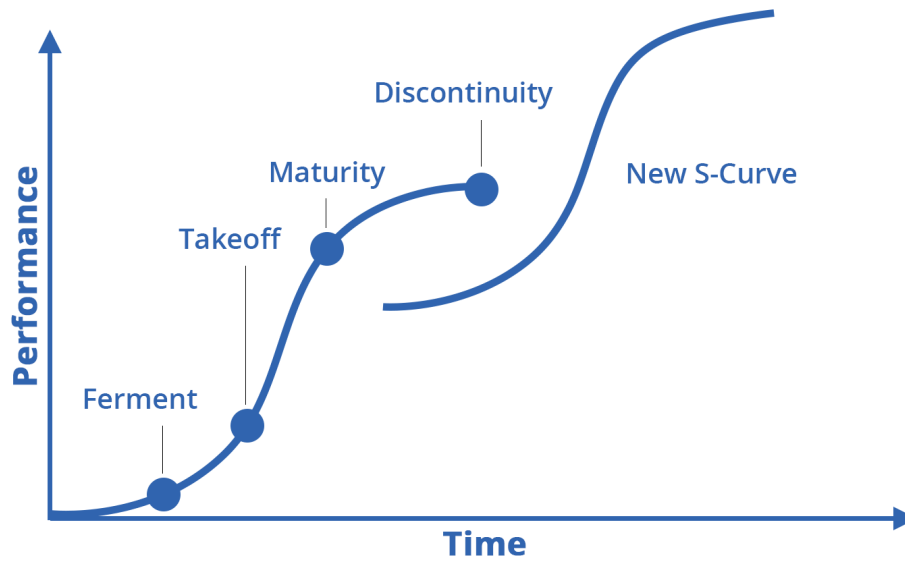
Indeed, knowledge becomes increasingly concentrated as it becomes complex. For example, a brain-drain phenomenon appears towards areas where the concentration of knowledge is already very high. Thus, products such as the Iphone find themselves being marketed all over the world, whereas it is produced in only one part of the world. The production process with the most added value is concentrated for the most part in the Silicon-Valley. Thus, the complexity of knowledge creates spatial inequalities.

In addition, the world of knowledge consumption is flattening, which means that you can access markets all over the world from one place. If you offer something in digital form, you can access it from anywhere. Digital products play a key role in win-win technology. Even the most complex technologies don't tend to spread. Indeed, the technological transition is difficult: for a region to prosper in the long term, it must continually reinvent itself and move from one industry to

another. It is necessary to diversify in order to make something more complex and do what others cannot do.

This highlights the S-Curve. For a business or market to thrive, when a product is nearing maturity, a company needs to ensure that it has new offerings in place to capture future profit opportunities. These new products are often enhanced or related versions of products approaching the maturity stage of their S-curve.

S-CURVE OF INNOVATION



However, emerging countries are challenging the global economic and political order established since the beginning of the 20th century. MNCs are increasingly MNCs from emerging countries. The Boston Consulting Group (BCG) identifies the new champions: of the 100 "challengers", 81 are from the BRICS. There are 41 Chinese, 20 Indian, 13 Brazilian and 7 Russian companies.

How will the global hierarchy of countries change over the next 30-40 years? It is likely that we will move from a world economy centred on the steps of the triad to a multipolar world economy.

2011			2030		2050	
PPP rank	Country	GDP at PPP (2011 US\$bn)	Country	Projected GDP at PPP (2011 US\$bn)	Country	Projected GDP at PPP (2011 US\$bn)
1	US	15,094	China	30,634	China	53,856
2	China	11,347	US	23,376	US	37,998
3	India	4,531	India	13,716	India	34,704
4	Japan	4,381	Japan	5,842	Brazil	8,825
5	Germany	3,221	Russia	5,308	Japan	8,065
6	Russia	3,031	Brazil	4,685	Russia	8,013
7	Brazil	2,305	Germany	4,118	Mexico	7,409
8	France	2,303	Mexico	3,662	Indonesia	6,346
9	UK	2,287	UK	3,499	Germany	5,822
10	Italy	1,979	France	3,427	France	5,714
11	Mexico	1,761	Indonesia	2,912	UK	5,598
12	Spain	1,512	Turkey	2,760	Turkey	5,032
13	South Korea	1,504	Italy	2,629	Nigeria	3,964
14	Canada	1,398	Korea	2,454	Italy	3,867
15	Turkey	1,243	Spain	2,327	Spain	3,612
16	Indonesia	1,131	Canada	2,148	Canada	3,549
17	Australia	893	Saudi Arabia	1,582	South Korea	3,545
18	Poland	813	Australia	1,535	Saudi Arabia	3,090
19	Argentina	720	Poland	1,415	Vietnam	2,715
20	Saudi Arabia	686	Argentina	1,407	Argentina	2,620

Similarly, there has been a marked increase in the International Monetary Fund quotas of the emerging countries.

La réforme des quotas-parts de 2010		
	Avant	Après
Etats-Unis	17,661	17,398
Japon	6,553	6,461
Allemagne,	6,107	5,583
Chine	3,994	6,38
France	4,502	4,225
Royaume-Un	4,402	4,225
Russie	2,493	2,705
Italie	3,305	3,159
Arabie	2,929	2,095
Inde	2,441	2,749

Canada	2,67	2,313
Bresil	1,783	2,315
Pays Bas	2,164	1,831
Espagne	1,999	1,687
Mexique	1,52	1,868
Corée du Sud	1,411	1,799
Suisse	1,45	1,21
Australie	1,378	1,357
Turquie		0,977
Belgique	1,931	1,344
Vénézuela		1,115

We must nevertheless qualify by saying that some emerging countries will certainly have greater purchasing power parity, but the poorest countries remain poor.

Moreover, the emerging countries present very contrasting situations: rapid growth and persistence of poverty. Indeed, economic growth does not reduce inequalities.

Take India as an example:



India is both one of the countries with one of the highest growth rates in the world, with an annual average of 7% over the decade 2000-2010, and one of the countries with the highest number of poor people.

If we look at the evolution of the super-rich, we can see that the share of national wealth in the hands of Indian billionaires rose from 0.8% of GNP in 1996 to 23% in 2008.

We are therefore well in a winner-take-all economy which has a lot of negative impact especially for emerging or less developed countries. So how can we remedy to winner-take-all economy?

First of all, it would be useful to put in place stricter regulations and more supervision on the stock markets. Indeed, the aim would be to limit the effects of speculation as much as possible.

Secondly, to limit monopolies and oligopolies. Today, monopolies and oligopolies are not punished unless they compete unfairly. However, on a hidden side of the market, there are agreements between firms favouring their own interests and blocking new market entrants. Thus, in this case, it would also be useful to have more monitoring of price makers in the market.

Then, in competitive terms, the duration of patents should be limited. Indeed, they constitute a barrier to entry and keep prices artificially high. Moreover, patents force new entrants to enter the market with a technology superior to that of existing operators, without being able to use the existing one. This situation is very complex and does not allow small companies to enter the market.

To address these disparities, there may be merit in ensuring that developing countries are better represented and heard in decision-making in international economic and financial institutions, so that these institutions are more effective, credible, transparent and legitimate. Establishing a development assistance programme and encouraging financial flows, including foreign direct investment, to those countries most in need, in particular the least developed countries. Finally, the establishment of mechanisms that ensure a broad and intergenerational sharing of the benefits of productivity gains.

Thus, we can say that we are today in a highly concentrated economic system (development of technological poles, geographical concentration of patent applications, consumption patterns, etc.). Certainly, the more complex the economy becomes, the more this concentration is accentuated and leads to strong inequalities between countries, between companies and between people and those even within the same country.

Indeed, despite the progress of the emerging countries in the world economy, they remain very dependent on the major world powers, particularly through the cost of raw materials and global demand.

To cope with this concentration of wealth, it is important to have strict regulations with regard to competition so that companies and third countries can develop in turn.

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