
Economic Complexity

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Sources

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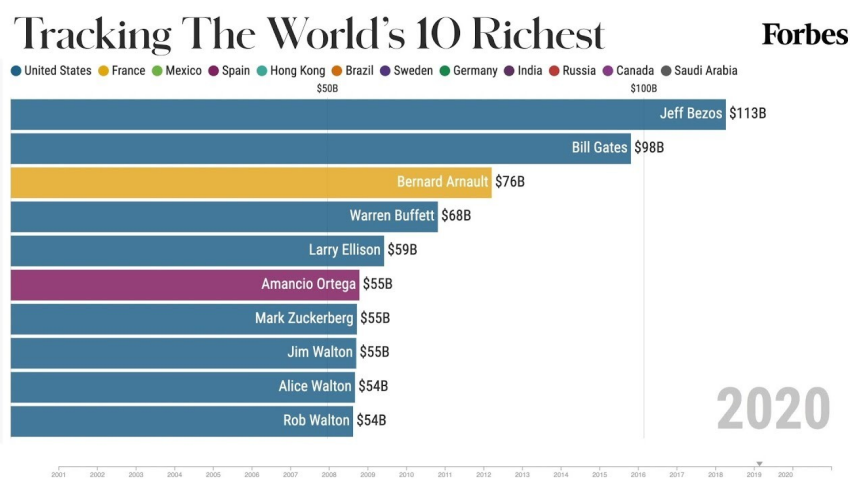
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Are we entering in a winner-takes-all economy?

Why and what can we do about it?

\$ 113 billion. What is the first thing that comes to your mind when you read this figure? Does it correspond to an amount of money the EU dedicates to a certain program? Not quite, but let us give it another try. Is it the GDP of a relatively small country? It could have been, but that is still not it. End of the suspense: \$113 billion is the what appeared on my screen as I googled “Jeff Bezos net worth”. Similar results were even displayed right below. I could read: “Mark Zuckerberg: \$55B”, “Warren Buffett: \$68B”, etc. Are those names new to anyone? Has the fact that some individuals are actually richer than entire countries just been discovered? I think you got the point.

Forbes, 2020 (youtube.com)



The world has witnessed this phenomenon for years, and this phenomenon will probably be witnessed for years to come. Thus, it is no exaggeration to say that **we are not entering in a winner-takes-all economy. In fact, we have already been living in one for a long time.**

Obviously, the situation is way more complex than the simple observation I just made. This list of very wealthy persons is one of the most noticeable examples of the actual concentration of wealth today's society is beholding. This is only one of the symptoms that makes an economy a “winner-takes-all” kind of system, that is to say a society in which only a very small part of players capture almost all the benefits.

An inherently unfair system

The principle of knowledge

In order to understand better what makes me claim so confidently that we are already living in a winner-takes-all economy, we should take a look at the concept of knowledge. Nowadays, knowledge seems to be the key resource to succeed in any sector of the economy. However, not every knowledge is worth the same. The value of a specific knowledge depends on its accessibility, and what makes a knowledge accessible or not, is its level complexity.

On the one hand, if a knowledge is very simple, it is more likely to be understood and mastered by a lot of people. In this case, the ability acquired through this type of knowledge will almost have no value at all, as a very large number of people will be able to offer the same service or product with the same level of quality. For example you can find good hairdresser's almost anywhere around the globe.

On the other hand though, being able to do something that requires an important amount of skill will lead to the opposite result. Very few people might be able to perform as efficiently as you do, and so the value of the ability will increase. **Thus, the more complex the knowledge, the scarcer, and the scarcer, the more valuable.** In this way, you may not find a nuclear plant construction company as easily as a baker's shop (with all due respect to bakers).

A virtuous circle

What does all this has to do with Jeff Bezos and the winner-takes-all economy? Well, depending on the type of knowledge you own, you will find yourself (or not) in the centre of this virtuous circle:



1: Creation of complex knowledge

2: Attraction of wealth

3: Accumulation of wealth

4: Investment in innovation

This is the exact type of process that turns an economy into a winner-takes-all system:

- 1) Of course, the first step is the hardest. Creating something new and complex often requires enormous amount of investments whether in terms of money or effort.
- 2) Nevertheless, once the first stage has been completed, wealth will start to flow towards the creators of this knowledge. If the later is complex enough, it will not have to face any competition and so remain the only direction towards which wealth will flock.
- 3) This will lead to a slow and steady accumulation of wealth, as long as the knowledge maintains a leading position.
- 4) Eventually, thanks to the wealth accumulated over the lifecycle of the knowledge, the entity that produced it will have access to enough resources to repeat the process.

Inevitably, **the longer a company has dedicated its activity to the creation of knowledge the more chances there are for that company to have accumulated capital overtime.**

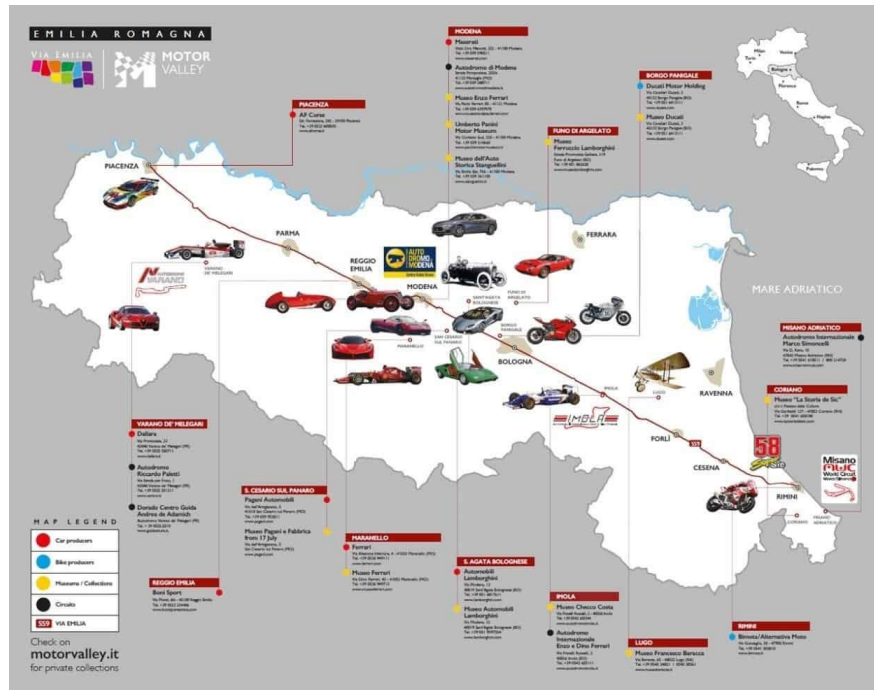
That is why Jeff Bezos' company Amazon is today at the highest level of the food chain. Although he began as a simple book reseller, Bezos and his team managed to create an extremely complex and efficient research algorithm. Jeff Bezos slowly built his empire, attracting more and more wealth overtime, until his company became the world's largest e-commerce, cloud computing, digital streaming, and artificial intelligence company.

More generally speaking, the effects of this extreme concentration of knowledge production, added to the fact that knowledge consumption is steadily spreading all over the world, results in the creation of what we could call "knowledge black holes", that is to say places where a huge amount of knowledge is localised, and that increasingly absorbs everything that concerns its field of activity. Indeed, as everyone has access to the same content and logically wants the best value for money, everyone chose to spend money on the very same player, the one considered to be the best of all.

The example of the Motor Valley

As, a motor sport enthusiast myself, I would like to present the example of a region known under the nickname of **Motor Valley**. As you probably noticed, the name of this region sounds quite similar to the Silicon Valley. In this case however, that it does not concerns high-tech companies in California but the automotive industry located in northern Italy.

(Motorvalley.it)

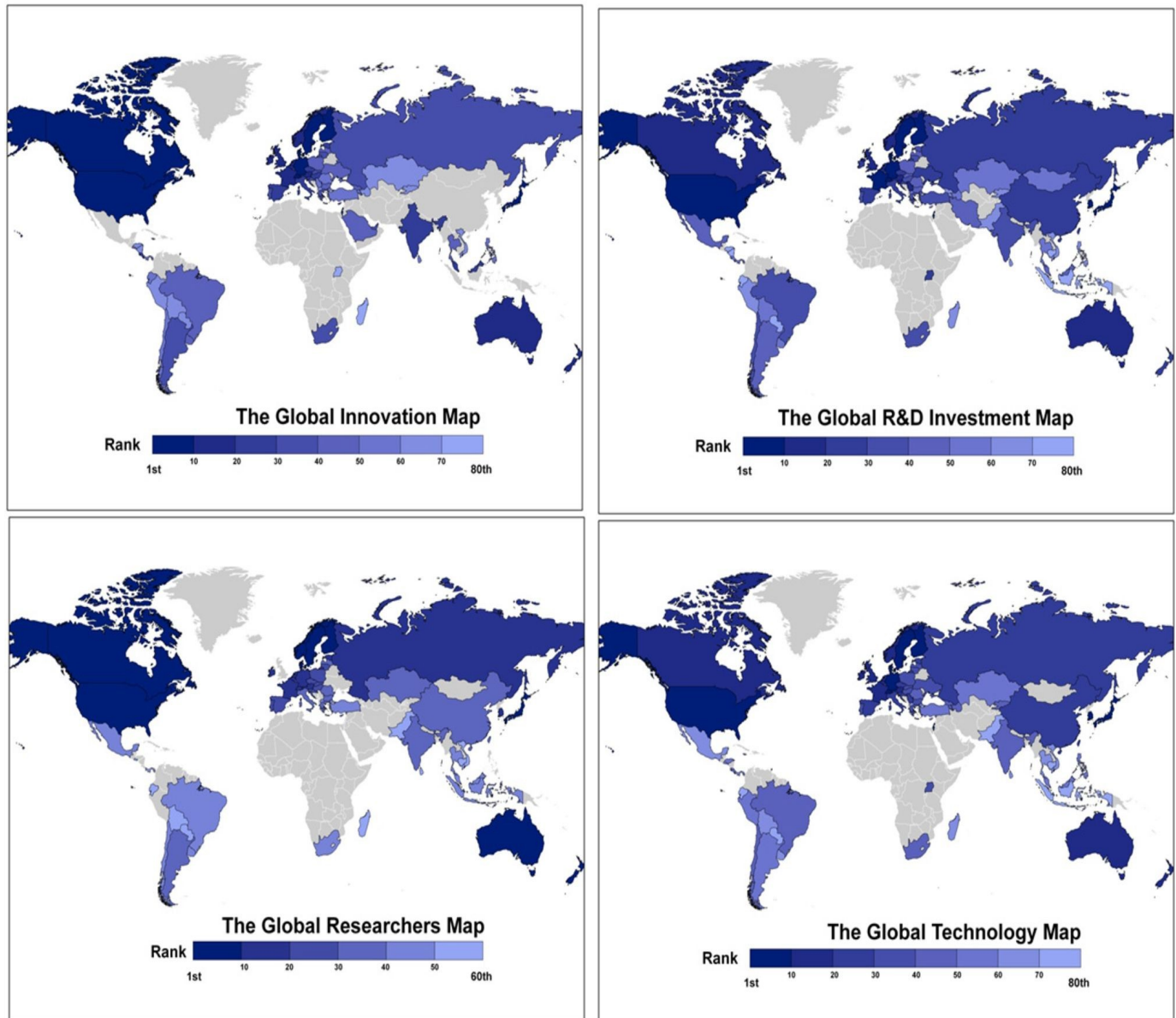


This region followed the exact same pattern described earlier on. Everything began with the establishment of modest size centres of complex knowledge handling, such as Enzo Ferrari's factory in Maranello (1947). With the success of the brand in motor sport, achieved through aerodynamic and engineering innovations, came increasing flows of capitals, which incited other car companies to establish their own factories not far away. 67 years latter, in 2014, the "Terra dei Motori" relied on more than 16, 500 car-related companies, almost 94,000 jobs and an export volume worth more than \$10 billion. Most of Italian sports car brand I know (Ferrari, Lamborghini, Pagani, etc.) has chosen to set its development and decision-making centres in this small region. And we have to note that those prestigious names are only the tip of the iceberg. Indeed, with those factories come world-class engineers, world-class education and training centres, world-class racetracks, and so on. Ferrari has even created its own automotive design school. If you live in Italy and you want to work in the motor sport industry, you just cannot go anywhere else.

Observation on a global scale

At the global level, the results speak for themselves:

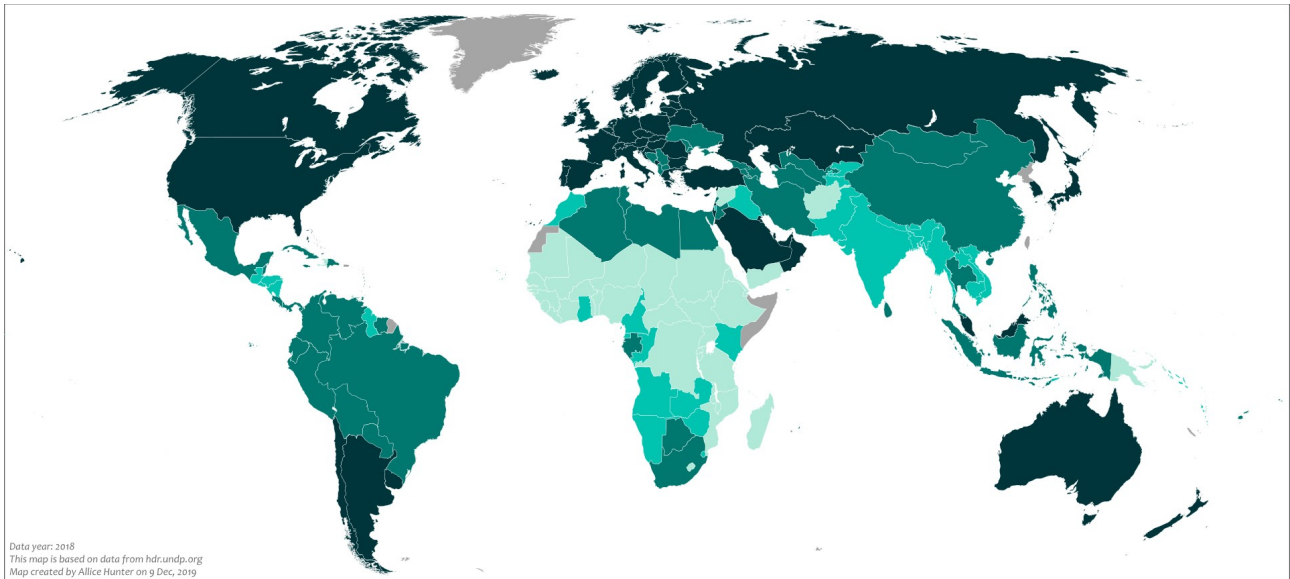
Richard Florida, 2011 (Bloomberg.com)



Once again, the regions that invest in R&D the most are also the regions where technologies are the most developed and logically where most researchers can be found. So, the darkest regions are the best in terms complex knowledge production. As we could expect, those regions correspond to the zones where the Human Development Index (HDI), that is to say the standards of living, are the highest: the United States of America, Canada, Western Europe, and Japan. Since the mid 1980' those regions have always been a step ahead of the rest of the world and were even nicknamed

“The Triad” (Northern America + Europe + Eastern Asia), which confirms that the world has already been a winner-takes-all system for a long time.

Alice Hunter, 2018 (United Nations)



Here, the darker the region, the better its HDI. It is clear that apart from small details, it almost seems that this map mirrors the previous ones.

So, regardless of the sector of activity, it is no exaggeration to say that owning complex knowledge is the key factor to succeed and survive in the current economic environment, whether we look at a corporate or regional level. Success attracts fame, fame attracts money and money attracts success. Once a player has made his way into the virtuous circle, he will keep on gathering wealth, creating even more complex knowledge and repeating this process as long as he can. Indeed, each actor has to remind that **what was extremely complex ten years ago may not be seen as complex now**, hence the necessity of constant evolution to carry on owing top-level knowledge. As mentioned before, this is exactly the type of process that turns an economy into a winner-takes-all system.

Potential directions to follow

Now, what if a new player wants to be part of this narrow circle? Is the system completely locked up? Sure thing, it is not fair at all. However, it does not mean that we should not do anything about it? **Letting a part of the population behind is never a good thing.** Despair, protests, revolts... History has already shown that those words often translate into pure violence, that is why it is essential to think about ways to solve the problem by making knowledge as accessible as possible without spoiling it.

This part will tend to be more theoretical than the first one as it will not be based on factual observations but on thoughts about potential solutions regarding the issue raised.

Uprooting the tree

The first option to reduce the inequalities induced by the system would consist in trying to flatten out knowledge production. As we saw earlier, the knowledge creation tools are extremely concentrated, hence the knowledge production world being referred to as very spiky. Attempting to flatten it out would literally mean blowing up the existing centres of knowledge production in order to make everything accessible anywhere. This option is obviously not realistic; infrastructures cannot be moved anywhere and consistency is needed to be able to work efficiently. For example, the world's best laboratory cannot be built anywhere on earth. This kind of system is so intricate and took so long to become what it is today that it is almost impossible to redistribute everything evenly without losing an important part of the accumulated knowledge. Appropriate infrastructures have been built, people have agreed to meet at certain places, and it cannot be undone overnight.

To make it clear, we can think of the economy as a forest where the different knowledges production system are the trees. It takes up to hundred years for the biggest trees to grow, and once they are grown, nothing can take them out of the ground. Their roots are perfectly adapted to the soil they have evolved in and it is impossible to move them to another location without having to also take away cubic meters of earth. In addition to being physically difficult, it would be very costly, would inevitably cause losses and the tree would probably die due to its inability to survive in a different environment.

Facilitating the branching

The second option though, could be a realistic way to improve this situation. Instead of trying to distribute everything to everyone, why not create ways for everyone to go to those centres of knowledge production? The internet already acts as a link between people and certain knowledge, but the need to be physically present in the epicentre of knowledge creation will always be more important than just having an access to online resources. Nowadays, everyone can consume an extremely large amount of knowledge without having to face any obstacle (maybe apart from the difference in language). Why would consuming knowledge just possibly mean having to learn English while creating knowledge equals having to cross borders, facing administrative protocol and spending a lot of money to go to a remote place in the case of those who were not born in the right place?

This is why I truly believe that scientific progress in means of transport combined to the abolition of any form of obstacle to the movement of person is the best way to reduce inequalities caused by the significant accumulation of knowledge. **Being born far away from those engines of economic development and progress should not be an obstacle to eventually join them.** The roots of the tree should be developed enough to be linked with the entire forest.

Conclusion

Throughout this text, I tried to explain my thoughts about the question of whether we are entering in a winner-takes-all economy or not. In my opinion, this phenomenon is not new. I would even go as far as to say that the economy works this way precisely because some actors have been here for longer than others. Indeed, the phenomenon of accumulation of knowledge, and so accumulation of wealth, is to me the main explanation to the existence of such an unfair system. Obviously, the rules of the game tend to change with scientific and technological progress, and it is still possible to witness the emergence of an unknown company thanks to a unique knowledge only they can use. However, at a regional level, things tend to be much harder to change. Complex systems of knowledge creation are so intricate and deeply related to their regions of origin that they are almost impossible to move without being damaged. In the end, the only option that appears reliable to reduce inequalities would consist in increasing and improve population mobility.

The evolution of our society towards a world of gigantic hubs and empty spaces is probably one of the most important issue our generation will witness. The process is already on, and the management of the transition to such a concentrated world has to be closely monitored in order to prevent any worsening of the already existing inequalities. I would like to conclude highlighting the fact that it is in our common interest to widespread knowledge as much as possible. It encourages dynamism, the emergence of new talents and cooperation between countries. Therefore, it ensures the most fundamental basis of any thriving society: a peaceful coexistence.