

for Great Britain, in 1860 for France ...) and the exploitation of natural resources from the rest of the world, especially in colonial empires during this period.

Great Britain in 1850 produces 40% of the manufactured products of the planet. Its heart is London, the world's leading port and world center of finance. Its influence then extends to its commercial partners (European, American, and colonial).

Growth was once again slowed during the "Great Recession" between 1872 and 1896 when agricultural prices fell due to crises (like that of phylloxera insect originated in the USA and namesake of the vineyard crisis in France before its extension in Europe and the world), and the competition of the new countries (American cereals, Australian meat) facilitated by new technologies allowing refrigeration and better means of communication. Farmers' production is declining and the industry is weakened. France and Great Britain are badly affected.

Thus during the 19th century, the British Empire is the "world's first economy" (name given by Fernand Braudel). Indeed, it has two assets to ensure its world supremacy at this time: thanks to its vast reserves of coal located near the coast, it can feed its industries and export this essential energy source to the first industrial revolution and thanks to its colonial empire, it can import all the necessary materials, like cotton for the first time. 'textile industry. Great Britain becomes the workshop of the world and the first economy-world but at the end the second industrial revolution (in 1913), its exchanges are made more and more within its empire. Sitting on the gold standard system (a system that defines the value of a currency according to the amount of gold held by the central bank of the country), the pound sterling was the international reference currency until the end of the Second World War.

Nevertheless, we are witnessing the emergence of new economic powers like Germany or the United States of America (USA) at the end of the 19th century.

B – The global growth from the second industrial revolution to the end of the second world war

The second industrial revolution is shorter (from 1893 to 1913) allows a new phase of growth that is called the "Belle Epoque". It is the emergence of electricity (1878), the chemistry and the first uses of oil as a source of energy (which will ensure the growth of the industrialized countries until the crisis of 1929. Thus it is a marked period by the creation of giant of the automobile sector, in France, there is Renault (25/02/1899) and in the USA Ford (1903) which takes off in 1908, on the occasion of the new organization of production of a new model, the Ford T, based on Henry Ford's chainwork.

On the other hand, the first world war upsets the economies. Germany retains a strong industry, but it is ruined. Its recovery is hampered by the reparations it must pay to France and Great Britain, which remains the largest financial power. But the United States of America surpasses Great Britain in innovation and production in this period.

The crisis of 1929 marks the end of this period of growth. A simple stock market crash that turns into a decline in the production of wealth (recession) gradually extending to all developed countries. Economic recovery and falling unemployment are slow to come. In the United States of America, the New Deal seems to be in line with Keynes' economic theories (which denounces the Versailles Treaty, and proposes increased intervention by the state in the economy of the countries). The depression ends with the Second World War.



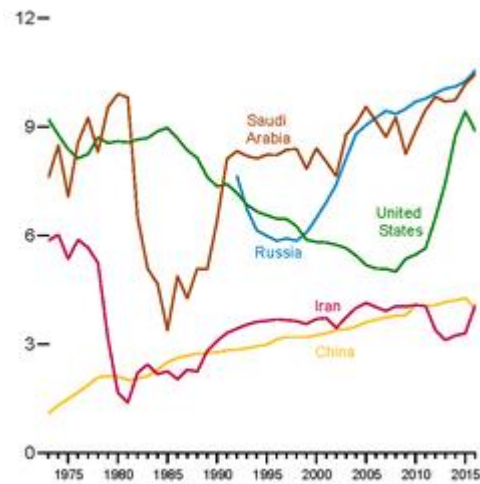
2 – Globalization and accelerated growth by the end of the Second World War to the present day

A – The post war, towards a change of leader of the world economy

After the second world war, in 1945, the economy of the Western countries enters a phase of extraordinary growth called the "Thirty Glorious" (name given by Jean Fourastié). Their annual growth rate is almost 5%. The Soviet bloc remains out of this prosperity, while the countries of the Third World (name given by Alfred Sauvy in 1951) seek the path of their development. During the 1970s and 1980s, the world economy was disrupted by the oil crises of 1973 (with the Yom Kippur War) and 1979 (The Fall of the Shah of Iran).

The collapse of the Soviet bloc in 1991 and German reunification seem to mark the definitive victory of capitalism as a model of growth. In fact, the global economy has experienced tremendous growth since 1990. It is based on a digital revolution, that of the new information and communication technologies. It relies on speculation and financial markets. It is no longer driven only by the West but becomes multipolar.

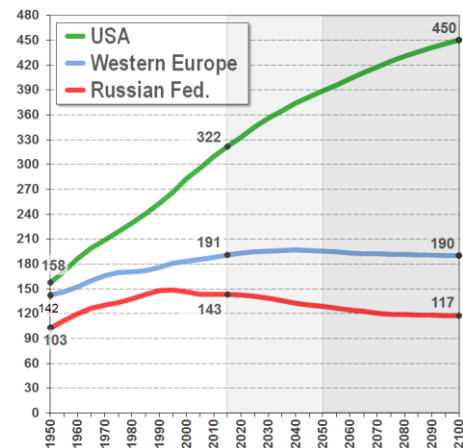
Selected Producers, 1973–2016



B – The United States, a global superpower

The United States of America only became a superpower from 1944.

By the Bretton Woods agreements, the dollar then supplanted the British pound as the reference currency. The Americans combine all the assets of power: a vast and unified territory, a young and more qualified population, a powerful and innovative industry allied to a unique military force, a strategic place in all the new international organizations (UN, IMF, IBRD). Until today, the United States of America is the largest economic power in the world. In 1955, with 6% of the world's population (around 155 million people against 40 million in France), they produce 50% of the world's goods and consume half of its resources. Their prosperity and that of Western Europe are closely linked (Marshall Plan), and they encourage the countries of the world to follow their example. Whole areas are under their influence, like Latin America. This economy-World is limited until 1990 by the existence of the communist bloc, with antagonistic ideology.



Globalization is the result of growing integration of economies and societies. It is therefore part of a long history that sees, since the fifteenth century, the development of merchant capitalism and the emergence of world-economies. But it is only after 1945 that it gradually takes shape, with the improvement of the means of communication and the increasing liberalization of the exchanges. The collapse of the USSR marks its advent, and technologies like the Internet give it a new dimension. The emergence of awareness of environmental, technological, health and political issues, which are now emerging on a global scale, is emerging. The crisis of 2007-2010 is the first crisis of contemporary



globalization. Globalization is leading to a multipolar world. At the triad that has dominated the world economically for half a century, we must now add the BRIC (Brazil, Russia, India, China). In addition, regional integrations are growing around these poles: Europe is becoming a more united market, NAFTA is boosting trade on the American continent, while China is now leading the world's industrial powers.

Conclusion:

In conclusion, the early globalization of Western countries via their empire has had a key role in accelerating their growth and their position in the world today. Thanks to their empire (their resources), their economic alliances, the sharing of knowledge and their international influence, Western countries were able to dominate the economic world until the middle of the 20th century. It is indeed they who initiated the waves of development of this period.

As globalization has accelerated, many countries have gained independence or managed their resources directly and we have seen other powers take over from the global economy (eg, the US after the Second World War). We can therefore think of N. Rodrik's trilemma to present the wish of sovereignty of the States to the hyperglobalisation of this period. The balance has been reversed and it is now the awakening of the West with since the end of the Second World War a new superpower: those of the United States of America.

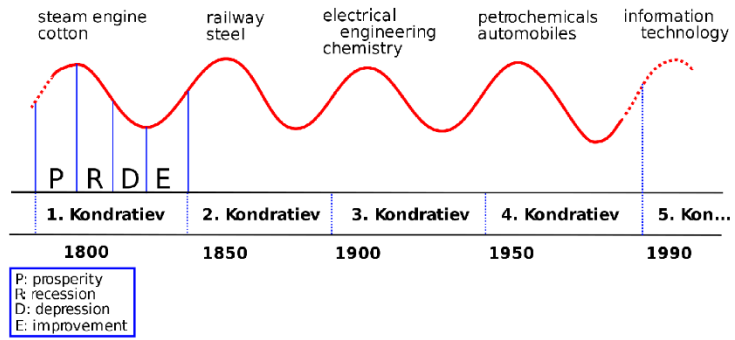
Nevertheless, the economies that were able to take the train of the first industrial revolution are now found in the world's largest powers (Great Britain, France, Germany and Western countries).

Then, the cyclical waves that the Russian economist, N. Kondratieff justify by leaps of growth related to the innovations (disruptive) or for purposes of conflicts (military or commercial wars).

Indeed, when one examines the diagram of cycles of economic development of N. Kondratieff, the curves follow one another following the same diagram (in 3 phases) with very often the same causes:



1- A period of prosperous growth emanating from an innovation (then to entrepreneurs who create clusters of innovation "(according to J. Schumpeter)) and / or a reconstruction of economy (after a war that fuels productivity and growth savings)



2- A slowdown in growth or a recession (starts when the technology has spread and productivity gains are running out of steam),

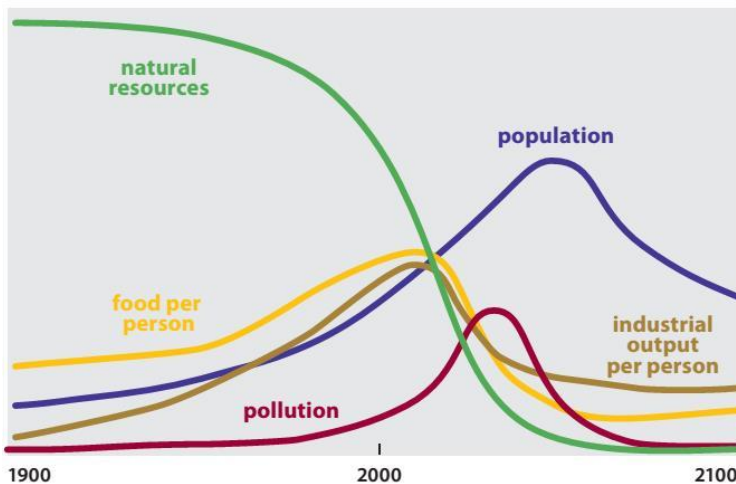
3- a period of deceleration (or depression) where growth has slowed down (often marked by a crisis)

4- Finally the diagram can be restarted

Cycles	Beginning	Expansion phase	Crises	Phases of contractions
1 st Kondratiev	1780/1790	1780-1814	1810/1817	1814-1849
2 nd Kondratiev	1844/1851	1849-1873	1870/1875 (Vienne 1873)	1873-1896 (Longue Dépression)
3 rd Kondratiev	1890/1896	1896-1929 (Belle Époque et Années folles)	1928/1932 (New York 1929)	1929-1945 (Grande Dépression)
4 th Kondratiev	1941/1950	1945-1973 (Trente Glorieuses)	1968/1975 (Kippour 1973)	1973- ?

Andrey V. Korotayev and Sergey V. Tsirel, *A Spectral Analysis of World GDP Dynamics: Kondratieff Waves, Kuznets Swings, Juglar and Kitchin Cycles in Global Economic Development, and the 2008–2009 Economic Crisis*, 2010. Source : www.escholarship.org

We also note that these cycles are gradually shortening and creating vouchers for growth increasingly important and often through innovations. For the next few years, the Kondratieff curve (50 years old) will no longer be relevant. We can therefore refer to new economic development cycle curves proposed by Kuznetz (15 to 25 years old), Juglar (8 to 10 years old) or Kitchin (3 to 4 years old) who present a thesis similar to Kondratieff but over more short.



Nowadays, we live in a period of digitization, some speak of a digital revolution (that of Industry 4.0). It is different from others because it is more information-centric. This cycle has not yet reached its peak and innovations are constantly emerging from all countries. Moreover, this technological escapade allows to be permanently connected with the world to facilitate the increase of the knowledge, their transfer and thus the innovations.

These technological advances should allow humans to find solutions because the time is serious on planet Earth. Some authors (like Jeremy Rifkin) speak of the third industrial and economic revolution that would be a revolution linked to energy. The latter considers this revolution necessary and urgent to solve the environmental and economic crisis.

Indeed, for more than 50 years, man has consumed more than what the Earth produces, and this becomes a real challenge that worries future generations. Every year we talk about Earth Overshoot Day which is the date of the year, calculated by the American NGO Global Footprint Network, from which humanity is supposed to have consumed all the resources that the planet is capable of regenerate in a year. After this date, humanity would irreversibly draw on the non-renewable (human-scale) reserves of the Earth. In 2017 this date was reached on August 2nd and August 3rd in 2018.



The diagram above shows the effects of globalization and global economic growth research of the late nineteenth century. It emphasizes the lack of natural resources offered by the land (due to over-exploitation), food per person, global pollution and increasing numbers of people. With all these challenges, humanity must resolve to continue to exist.

So to open the topic we can now ask, how can globalization solve the environmental crisis?

