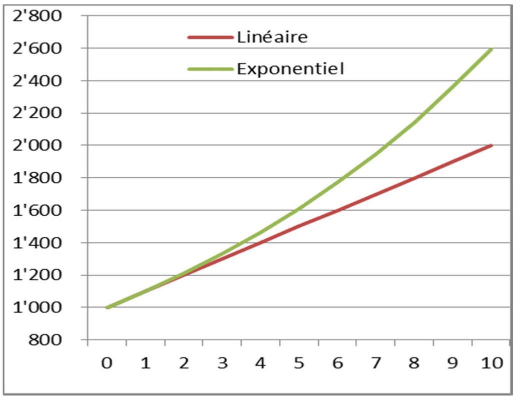
TO GROW OR DISAPPEAR? THE FATAL OBSESSION!

“Growth at half-mast: the government's fault?"; "French growth has stopped in 2018"; "Chinese growth sends reassuring signals"; "Italian growth is worrying the Eurozone"; "Global growth burdened by trade tensions"; "Grow or die, you have to choose." The list of headlines talking about growth is endless in the media. It well reflects a psychosis, the obsession of growth at any cost.

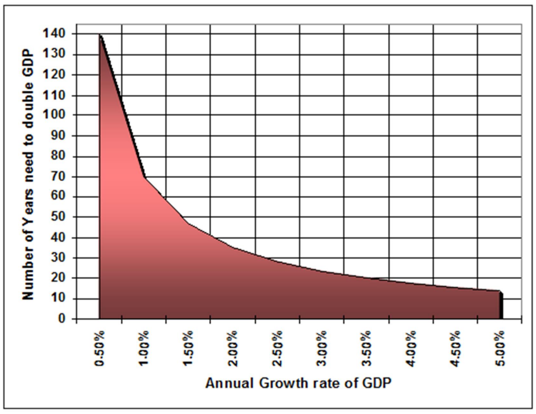
To measure growth, the most commonly used indicator is gross domestic product (GDP). GDP is used to determine the value of all goods and services produced in a country.

Most people think in linear terms: a worker who hides CHF 100 each year under his mattress will see his savings grow linearly. On the other hand, a quantity grows exponentially if it increases by a constant percentage over a given time interval. The typical example is money invested at compound interest.



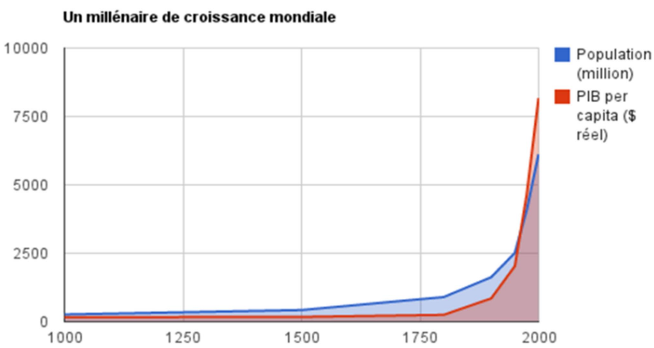
In the chart above, a capital of 1000 increasing each year by 100 will reach the amount of 2000 in 10 years (linear function). On the other hand, a capital of 1000 invested at an annual interest rate of 10% for 10 years will reach the amount of 2600 (2594) in 10 years (exponential function).

The higher the growth rate, the shorter the time required for doubling. Approximately, the time it takes for doubling is obtained by dividing 70 by the growth rate.

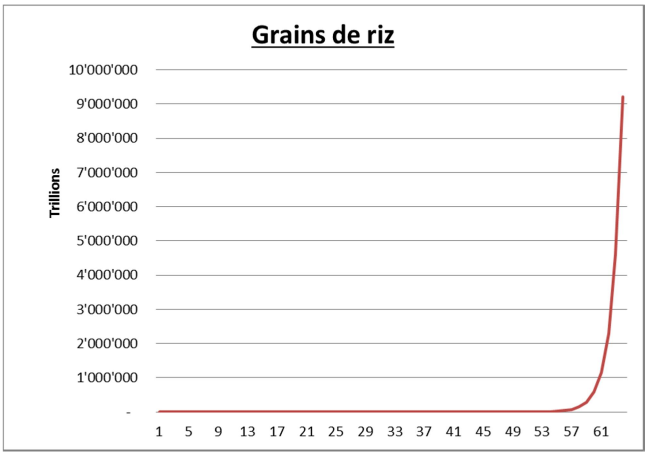


"The recovery in global growth is encouraging, but there is no room for complacency", World Bank Group President Jim Yong Kim said in 2018. On January 9, 2018, the World Bank announced an increase of the global economy by 3.1% in 2018. If this rate continues for the coming years, the doubling period will be about 23 years. Is it reasonable? Do we have the resources to allow this doubling?
The application of exponential laws can give surprising results. Consider a pond on which a water lily grows, doubling in area each day. Assuming it will take 30 days to fully cover the pond, thus stifling any form of aquatic life, on which day do we have to act before it is too late? Obviously the 29[t] day. In this case, we have only one day to save the pond. Regarding our beautiful blue planet, what day are we now before we are able to save it?

Let's look at the graph below. For centuries, nothing seems to be happening. And suddenly, everything accelerates. We are very certainly in this last phase.



Let us take again the example quoted in our previous article "On the road to collapse" to illustrate the exponential function within a finite domain (soil, oil, non-renewable raw materials, agricultural production, etc.). According to an Old Persian legend, a clever grain-rice merchant offered his king a magnificent chessboard (finite domain). In exchange for this present, he only asked for the following: one grain of rice for the first square, two for the second, four for the third, eight for the fourth, and so on. The King immediately agreed and gave orders for rice to be brought from his reserves: for the fifteenth box it was necessary to count 16'384 grains, for the 64th box the number of grains was astronomical (9'223'372'036'854'780'000). All the rice stocks were exhausted long before the chessboard could be paid. Where are we today? Maybe on the 60th? Can we avoid the worst?

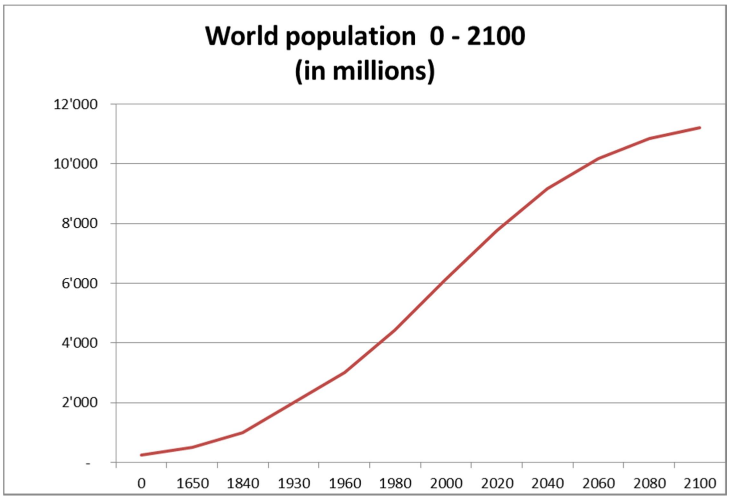


Whichever the examples of exponential growth is referred to, the conclusion is that nothing seems to be happening for a long time, and then suddenly everything is accelerating. That is where we probably are today.

The findings of the Club of Rome in 1972 is without appeal: the population, food production, industrialization, pollution and the use of non-renewable natural resources evolve according to a geometric progression, that is exponential.

The world's population (in millions)

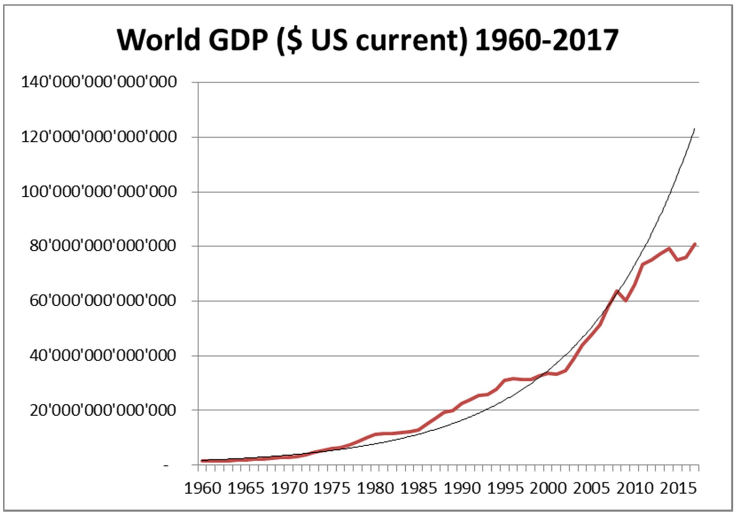
Years	Population
0	250
1650	500
1840	1'000
1930	2'000
1960	3'020
1980	4'440
2000	6'130
2020	7'760
2040	9'160
2060	10'180
2080	10'840
2100	11'210

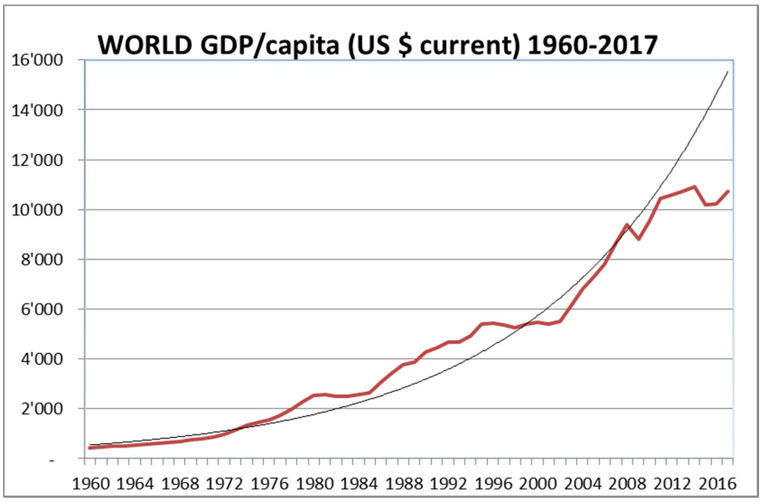


It took 1650 years for the world population to double (0 - 1650). It took only 190 years for the next to double (1650 - 1840), and it took 90 years for the next to further double (1840 - 1930). 50 years only were enough for the subsequent doubling. During this century, the population will increase by more than 5 billion. An exponential increase that nothing seems to stop.

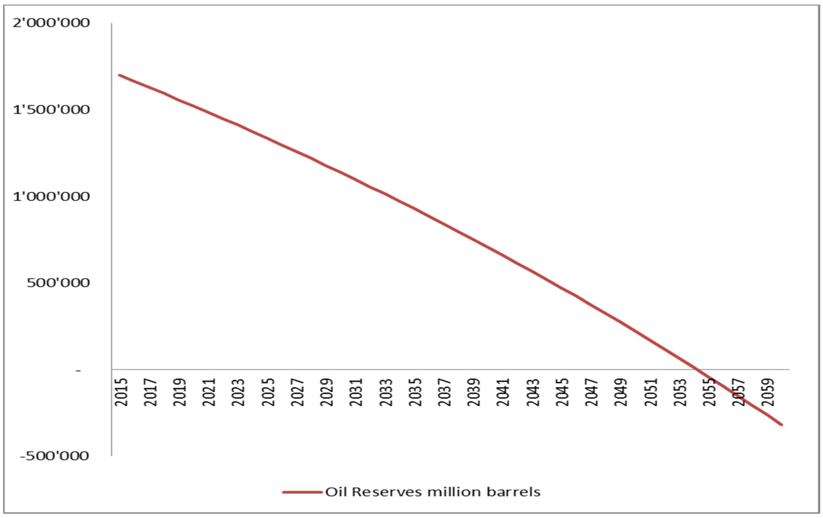
World GDP per capita

The exponential growth of these two aggregates is obvious.





Consider the most important non-renewable resource: oil



Oil reserves in 2015: 1698 billion barrels.
Consumption in 2015: 94.1 million barrels per day, that is, 34'347 million barrels per year.

Taking into account a consumption growth rate of 1.17% per year, the reserves would be depleted in 2054.

To believe that fossil energy can be replaced by renewable energy is a sweet dream. Experts predict that only a small portion of fossil energy can be replaced by renewable energy.

The obsessional pursuit of growth is making both politicians and businesses losing any sense of direction. They are not aware - or perhaps they are, but they are burying their faces in the sand - that they are accelerating the march of our world towards a near collapse. One day they will be liable to humanity, if it survives!

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Sources:

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