

Let us speak growth and demography

Whereas the world population, partly decimated by the tragic epidemics of the Black plague in the Middle Ages, had increased only from 200 million to just over a billion people between the year zero and the beginning of the XIXth century, since the Industrial Revolution, it has multiplied 7-fold, to reach 7 billion people at the end of 2011. Though the demographic growth rate continued to increase after the Second World War, the trend slowed down at the end of the sixties, dropping from over 2% per year in 1967 to about 1% in 2010. Over the same period, world wealth was quadrupled, increasing from 2,100 \$ to 10,000 \$ per inhabitant between 1950 and 2010. Over the last twenty years, while wealth was soaring, demography was treading water.

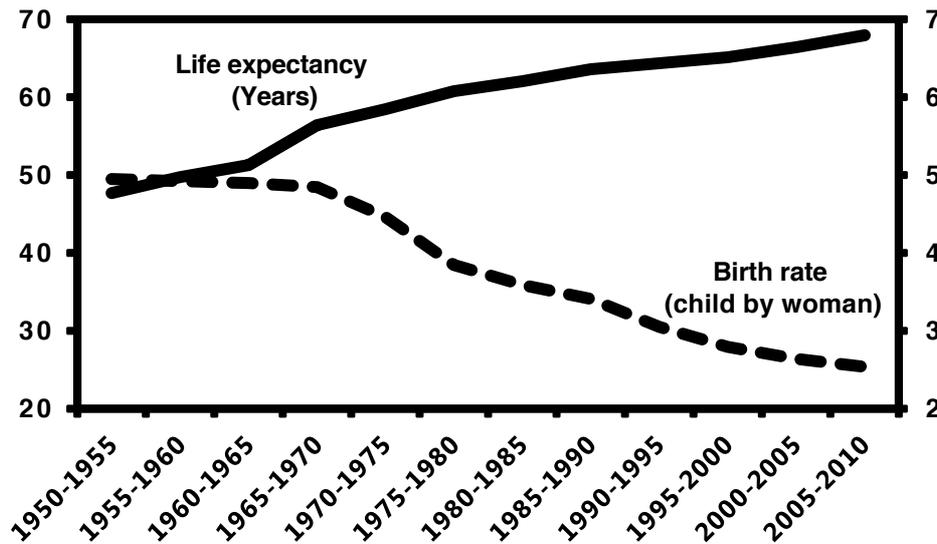


Figure 1 – Evolution of life expectancy and birth rate since the end of the Second World War

Well before the industrial revolution, two major theories on demographic growth were confronted. The natalism formulated by Jean Bodin¹ in 1576 then corroborated by A. Smith² during the second half of the XXVIIIth century, is based on the hypotheses of a demography regulated by economic demand and the need for a workforce. Today, it would be interpreted as a "*natural society of full employment*". In 1798, Malthus took the opposite tack³ in considering that the increase in world population is "*restricted*" by the "*finite nature of natural wealth*". His theory is partially mirrored in Solow's asymptotic growth model: the increase in population, though it brings work on the one hand, also curbs economic growth when the consumption rate exceeds the investment rate. If we consider a demography regulated by nature, the Malthusian vision (remember that this is a pre-industrial revolution vision) neglects the determining impact of man's ability to innovate which, over the last two centuries, has enabled him to considerably increase his life expectancy. The latter is paralleled by an equally as significant drop in birth rate, from 5 to 2.5 children per woman in the period 1950 - 2010 (**Figure 1**). These two trends are direct corollaries of growth and development (**Figure 2**).

¹ One must never fear there being too many citizens, given that there is no wealth without the strength of man

² The decisive indicator of a country's prosperity is the increase in the number of its inhabitants

³ When the population increases, these individuals are superfluous and do not have their place "at nature's banquet".

The increase in life expectancy is a result of progress in medicine (curative and preventive) but also of the general improvement in living conditions (hygiene, food safety, industrial safety, road safety). As for the drop in birth rate, though the main explanation is education, which delays the birth of the first child by several years, it is also linked to the fact that in the most developed countries, many couples aspire to other things than the creation of a large family unit which, in a not too distant past, was still the main goal in life.

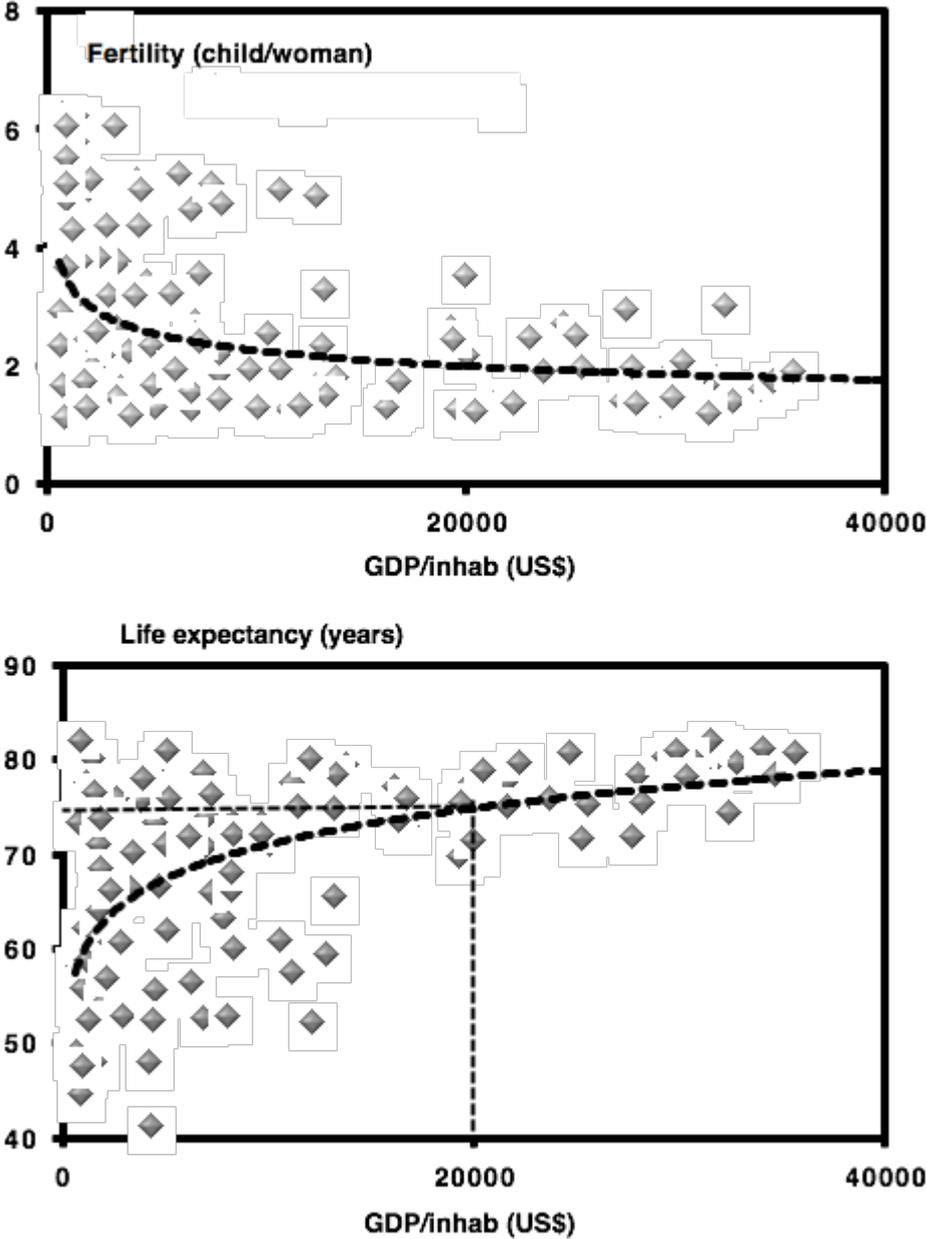


Figure 2 – Relation between fertility (top) and life expectancy (bottom) according to the GDP (data 2010 UN – 18) in different countries⁴

The immediate consequence of the drop in birth rate and the increase in life expectancy is an aging population. Whereas the median age of the most developed countries (Europe

⁴ http://www.nationmaster.com/graph/ene_ele_pro_fro_oil_sou_of_tot-electricity-production-oil-sources-total
http://www.geohive.com/earth/pop_growth.aspx
<http://data.un.org/Data.aspx?q=world+life+expectancy&d=PopDiv&f=variableID%3a68%3bcrID%3a900>

and North America) are 39 years and 36 years respectively, that of Africa is under 20 years. This trend should be maintained over the next few decades. Between 2000 and 2050, the 15-30 age group should decrease from 25% to 20%, whereas the over 65 age group is set to increase from 7% to 17%⁵. Though the phenomenon is more marked in OECD countries, in some emerging countries, like China, the aging of the population is also starting to make itself felt, in particular as a result of the "one-child policy".

Though age is not a criterion for intelligence, audacity and the desire to take on challenges are more the prerogative of the younger generations. Economic growth, which relies above all on investment, innovation and drive, is therefore the trademark of a young, buoyant population, rather than that of an ageing population motivated more by the status quo and the desire to hoard than by a keen interest in investing in the future.

The ageing population will also be a major economic challenge in the future, because *"though life is priceless, it does come at a cost"*. There is a certain risk that the wealth generated by the working population will rapidly run out to cover pensions and other health costs for the non-working population. Will there be, in the future, an economic limit to life⁶ in developed countries as there is today in developing countries? Malthus "would turn in his grave" if he could access the predictions for technical life expectancy in 2030–2050. In the long term, an ageing country cannot help but see its economic growth decline. **The demographic corollaries of economic growth will therefore turn against it.**

It is therefore in emerging countries where the population is markedly younger and not in developed countries that the demographic deficit will have to be offset. **The local content** is one viable solution. It will be discussed in the June social corner.

⁵ US Census Bureau, International Database (2010)

⁶ The second graph in **Figure 2** shows that the minimum income required to reach technical life expectancy (75 years old) is approximately 20,000 \$/capita. This figure can therefore be considered as the economic life limit in 2010. In countries where this criterion is not met, life expectancy is constrained by economic, rather than technical factors.