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The Great Slowdown of China

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Abstract

China's rise has been perhaps the single most important trend of global geopolitics during the first two decades of the 21st century. With its robust growth, China was expected to overtake the United States and become the strongest economy on the planet. China's economic growth has already started to show signs of slowdown however in the late 2010s. As of 2023, new statistical data suggests that the era of China's dramatic rise may already be over, we are reaching a period that can be called "peak China", and China's nominal GDP may never surpass that of the United States, as its long-term average growth rate may fall below that of the United States before it could surpass it.

Introduction

Introduction

China's slowdown, unexpected as recently as the time of the Covid pandemic has become apparent, and could very likely be a geopolitical game changer over the upcoming decades. After double digit growth for most of the last four decades, China's growth already started to show signs of a structural slowdown in the late 2010s. While it didn't fall below 9% not even during the 2008 financial crisis, it plummeted below 7% after 2015, a level, below that of 35 out of the previous 38 years, with the exceptions of 1981, 1989, and 1990. After 2015, China's GDP growth remained below 7% until the end of the decade, having been as low as 6% in 2019. The slowdown was masked by the Covid-19 pandemic in the next few years: It plummeted to a mere 2% in 2020, but it was still much better than the recession in most developed economies, and then in 2021, due to the recovery, it reached 8%, a reminiscence of the good old days. The 2021 growth however was only an exceptional result of the post-Covid recovery, and in 2022 again we only saw a GDP growth of a mere 3%. The slowdown seems to be a long-term trend, as IMF forecasts Chinese GDP growth to be only 4% for most of the decade.[1] This is starting to impact China's superpower ambitions as well. As recently as 2020, China's GDP was expected to surpass that of the US by 2028,[2] and China's population wasn't expected to start to decline before 2033.[3] As of June 2023 however, China is expected to surpass the US according to the long-term forecast of Goldman Sachs only in 2040,[4] and by another study, only by 2060,[5] while it is admitted that its population has already started to shrink during the current year, 2023. Also, the long-term forecast predicts China's share in the global GDP to peak in 2030, which puts China's superpower ambitions in a new light.

Troubles in the Chinese Economy

A major internal factor causing a slowdown in China's economic growth was the crackdown on big tech, which started in 2021. The reasons are not entirely clear, but the main motivation may have been power centralization. The crackdown included anti-trust measures, enforcement of data-security regulations, and a crackdown against alleged "disorderly capital expansion" including "growth at the expense of public interest". Anti-trust measures implemented by the State Administration of Market Regulation hit Alibaba the hardest, which had to pay a fine of 2,8 billion dollars. 34 other big-tech companies were also put under investigation, including Tencent, Meituan, Didi, Baidu, Bytrance, JD, and New Oriental Education, with most of these heavily fined. Regarding data security regulations, the Cyberspace Administration of China implemented punitive measures against companies such as Didi, Full Truck Alliance, and Kanzhun. The crackdown

regarding "disorderly capital expansion" including "growth at the expense of public interest" hit companies including Ant Group, ByDance, and Tencent. [6]

A major external factor has been US sanctions against China on semiconductors. These measures implemented in October 2022, banned US firms and engineers from assisting China in producing semiconductors that are 16 nanometers or smaller for logic chips, and also the equivalents of such for other semiconductors. This prevents China from producing top-end chips, including those needed for data centers, smartphones, artificial intelligence, and machine learning, thus hampering the manufacturing of these items. The Netherlands and Japan also joined these sanctions.[7] Given the trends of Sino-US rivalry, these sanctions are unlikely to go anywhere any time soon, thus their impact on China's GDP growth will likely be long-lasting before China is able to develop its own ecosystem in such chips. As these actions were implemented in October 2022 only, their impact is unlikely to have been taken into account by the long-term forecast until 2075 by Goldman Sachs published in December 2022, or by the short-term forecast until 2028 by the International Monetary Fund, published in April 2023.

One more sectoral issue for China's economic prospects has been the real estate crisis of 2020-2022. The crisis originated from the runaway indebtedness of China's largest property development companies, and the harsh reactions of the Chinese government, which opted to impose restrictive debt limits on companies in the sector. The Chinese government introduced the "three red lines" rule in 2020, which limited the borrowing of companies based on their debt to cash, debt to equity, and debt to assets ratios.[8] The new regulations heavily hit the largest property developer companies in the country, with Evergrande having been the most notable example. By October 2021, 14 out of China's 30 largest developers ended up breaking these regulations.[9] As developers started failing to honor their commitments, homebuyers in China started boycotting mortgage payments by mid-2022 and were boycotting payments for 343 projects by mid-September 2022.[10]

One more issue is China's growing debt. While at the time of the 2008 financial Crisis, China's debt to GDP ratio was well below the average of major developed economies, by the second half of the 2010s it reached similar levels.[11] Since then China appeared to have started a strategy of hiding government debt by channeling it to the provincial level, thus while the rise of the government debt was not that apparent, the debt of the provinces rose sharply.[12] By May 2023, China's combined government and provincial debt reached 23 trillion USD,[13] while its GDP in 2022 was only 18 trillion USD.

While the worst may still be yet to come, these factors are already starting to take their toll on both FDI inflow to China and Chinese FDI outside the country. According to the International Monetary Fund's April 2023 *World Economic Outlook*, the average of the period between the first quarter of 2015, and the first quarter of 2020, compared to the period between the second quarter of 2020 and the fourth quarter of 2022, Chinese FDI flow decreased by 22,1% to the United States, by 6,9% to the Americas excluding the United States, by 17,8% to Advanced Europe, by 31,3% to Emerging Europe, by 44,3% to Asia excluding China, and by 31,9% to the rest of the World. Especially the dramatic decrease in Chinese FDI flow into the rest of Asia, and into Emerging Europe suggests that the Belt and Road Initiative is running out of steam. We can see a similarly dramatic setback in FDI inflow to China between the two time periods: A decrease of 40,6% from the United States to China, 13,3% from the Americas excluding the United States, by 19,7% from Advanced Europe, 49,2% from Asia excluding China, and by 24,7% from the rest of the World, while the only region where it increased was Emerging Europe, where it increased by 13,9%.[14] This was also accompanied by reshoring and friendshoring[15] tendencies by the United States, increasing its FDI flow to Emerging Europe by 19,4%, to the Americas excluding the United States by 9,2%, to Asia excluding China by 2,3%, to Advanced Europe by 0,6%, and to the rest of the World by 21,6%,[16] showing Emerging Europe and the Americas outside the US being the main beneficiaries of the Sino-US trade war in terms of increased US FDI inflow, as US companies are looking for allied economies to invest.

The demographic problem

The greatest issue however seems to be demographics. Here it increasingly seems that the Chinese one-child policy turned out to be more effective than would have been optimal, and population decline in the upcoming decades is taking a nosedive so steep that it significantly hampers China's economic growth. As recently as 2019, based on numbers provided by Chinese authorities, the United Nations estimated China's population to start to decrease only in 2033 and to be taken over by India only in 2030.[17] Updates in the 2022 edition of UN estimates however showed, that China's population is both starting to decrease and is also being taken over by that of India in the current year of 2023.[18] Such a dramatic change in the numbers within a timespan as short as mere 3 years strongly suggests that either intentionally or unintentionally, the numbers provided by Chinese authorities for the 2019 UN assessment were false. As we already know that Chinese authorities did issue demographic data, that was false, this raises the question of

whether the data on which the 2022 UN assessment is based, are also correct. As totalitarian systems, such as the PRC have throughout history been notorious for manipulating their statistics, it would not be surprising, if the PRC would be doing that with its demographic data. The researcher Yi Fuxian argues that even the 2022 data is false and that China's demographic situation may in reality be even worse than the 2022 UN assessment suggests. As Yi Fuxian argues, certain numbers simply do not match. While according to the 2010 Chinese Household Registration Database, there were 169 million children between the age 3-14 in China, the census of the same year put their number to 176 million, and the Chinese statistics bureau states that the number of live births between 1996-2007 when this cohort was born, was 210 million. The 2022 UN assessment, which uses data issued by Chinese authorities, puts the number of people in the same cohort (already having aged to be between 15-26 by 2022) to 195 million. This means that if the numbers of the Chinese Household Registration Database are correct then the Chinese statistics bureau overstated the number of live birth between 1996 and 2007 by 24,3% and that the UN assessment of 2022 overestimates the number of Chinese in the age group of 15-26 years by 15,4%. As BCG vaccines against tuberculosis are compulsory in China for every newborn within 24 hours after birth, the number of BCG vaccines used is also an indicator of the real birth rate. As 1,2-1,5, infants can be vaccinated by a single dose of BCG, and the number of BCG vaccines used was 6,21 million in 2018 (and has been on the decrease ever since) while the number of deaths totaled 9,93 million that year (and has been on the increase ever since) Yi Fuxian argues that China's population already started decreasing back in 2018, five years ahead of what is stated in the 2022 UN assessment. Yi Fuxian also argues that if we compare the number of births for the years 2018, 2019, and 2020 in the 2022 UN assessment, with the number of doses of BCG vaccines used in those years, it turns out that if the numbers in the UN assessment were correct, then the number of infants vaccinated by a single dose in the years 2018, 2019, and 2020 should have been 2,7, 2,6 and 2,5 respectively. If we calculate the higher number of 1,5 for the number of infants who can be vaccinated by a single dose, this suggests the striking numbers of China overstating the numbers of its live births by 44%, 42%, and 40% for the years of 2018, 2019 and 2020 respectively. While this would seem far-fetched even compared to the 15% anomaly by which 2022 UN numbers for the cohort between the age 15-26 seem to be overestimated, it is not impossible: As demographic trends are by nature exponential, if demographic data is manipulated, the anomaly can be expected to increase by each generation. Based on these anomalies, Yi Fuxian concludes that as opposed to the official number of 1,4 billion, China's population

has in reality been only 1,28 billion as of July 2022, and on the decrease ever since 2018. A leak of statistical data from the Shanghai police department also seems to support estimates by Yi, which seems to be decisive proof for Yi's estimates. Yi's conclusion also suggests that China's population will fall to a mere 1,02 billion by 2050, as opposed to the 2022 UN forecast of 1,31 billion for the year 2050.[1920] The exponential rate of population decrease estimated by Yi for the timeframe of 2022-2050, projected to the timeframe of 2022-2030, starting with the basis of 1,28 billion as calculated by Yi for the year 2022, would mean a population of 1,2 billion for the year 2030. This is not only more than 15% lower than the UN forecast of 1,42 million for that year, which, if true, will already be a very significant difference, but also 20% lower than the UN projection for India for 2030, which is 1,52 billion. (As India is still struggling with population growth, it would not be in its interest to manipulate its numbers in order to make them higher than they really are, so the Indian number is most likely correct).

This suggests that the effects of an aging population decelerating the economy will appear much sooner, and will be much heavier, than what the UN data shows. For instance, if the number of live births for the years 2018, 2019, and 2020 are those what is suggested by the number of BCG doses, this means that the number of 30-year-olds in 2050 will be little more than half of what the 2022 UN assessment suggests, while the number of senior citizens will be the same as suggested by the UN (as Yi's research suggests that the manipulation does not impact estimated numbers for older age groups). This would mean close to twice as many senior citizens for each 30 year olds in China by 2050, than what we expect now, based on the 2022 UN data. While the ratio of the working-age population to senior citizens is about 5 to 1 in China now and is predicted by the UN to be 3,8 to 1 by 2030, Yi got to the conclusion that it will only be 2,4 to 1 by 2035.

How this may impact GDP growth, Yi Fuxian takes one more metric into account: In the case of Japan and South Korea, the ratio of their per capita GDPs relative to that of the US peaked when the working age population peaked, and when it started to decrease, their GDP per capita started to diverge downwards from that of the US. Yi expects the Chinese working-age population to plateau in the 2020s, and then sharply decrease after 2030. As a result, while the Goldman Sachs long-term forecast puts the inflection point where China's GDP growth slows below that of the US in 2060 Yi expects this to happen between 2031-2035, and states that China's GDP will never actually surpass that of the US, but doesn't give more specific figures than that.[21]

Regarding how this will affect China's GDP growth, we made our calculation as well, based on the long-term forecast by Goldman Sachs published in December 2022. As GDP is by and large produced by the working-age population, our educated guess is that GDP will be lower than what is forecasted by Goldman Sachs by the ratio by which the working-age population in the given year will be lower than forecasted by the UN. To make the calculation, we take the OECD definition of working age population which is between the ages 15 and 64, and base our calculation on that cohort of the Chinese population.[22] Based on anomalies estimated by Yi Fuxian, we assume that the cohort born between 1998 and 2002 is 15% lower than the official numbers, while the cohort born between 2018 and 2022 is 45% lower because, in available age pyramids, these cohorts are overlapping the greatest degree with age groups to which Yi's analysis concluded these ratios. For the cohorts in between, we assume a gradual transition between these ratios: For those born 2003-2007, decrease by 15%, for those born 2008-2012 by 25%, and for those born 2013-2017 by 35%. For age groups to be born after 2022, we assumed the same ratio relative to the cohort 30 years before them, as the revised data for the cohort born 2018-2022 shows relative to the cohort born in 1988-1992, ie. the same fertility rate in the cohort that most likely represents their parents, as it was in the cohort that most likely represented the parents of those born between 2018 and 2022. Using this calculation, we calculate the ratio by which the working-age population will be lower than the UN estimates for the years 2030, 2040, and 2050. We have to add one additional factor as well: If Yi's estimates are true, the working-age population in 2022 was already lower than the numbers officially stated. This means that the GDP per working-age population levels were on the other hand, somewhat higher than the official numbers, because the GDP of the year 2022 was produced by fewer people than believed. As we calculate by assuming unchanged GDP per working-age population, this means that at this rate, the basis of growth after 2022 is somewhat higher, than the official numbers. So we also multiply 2030, 2040, and 2050 data by the same ratio by which the actual 2022 GDP per working age population level is higher than the official one, which just a little bit moderates the decrease. The gap that we get will also be uneven: China seems to have started falsifying its demographic data starting with the cohorts born around the year 2000, and not before that, but from then on, it did it with increasing discrepancy. Thus the anomaly didn't impact the number of the working-age population till about 2020, and from then on, it impacted it only by a little at first, as the first cohort with overstated numbers reached working age, and it will impact the number of the working age population from now on more and more, not only as more cohorts with overstated

numbers will enter the workforce, but also the gap between the stated and real number will increase by each cohort. Thus the gap between forecasted and real GDP will be relatively small in the mid-2020s, but gradually increase as time pass, and reach a disastrous level by mid-century.

share in global GDP (Goldman Sachs original forecast)[23]	**2010**	**2020**	**2030**	**2040**	**2050**
UKUSA Bloc	31,61%	32,10%	28,34%	24,13%	21,33%
China	9,32%	17,90%	20,18%	19,87%	18,39%
Euro Area	19,52%	15,59%	13,01%	11,42%	10,05%
India	2,64%	3,23%	5,44%	7,69%	9,74%
Indonesia	0,38%	1,04%	1,81%	2,33%	2,76%
Japan	8,94%	6,00%	3,62%	3,03%	2,63%
Brazil	3,40%	1,73%	1,89%	2,04%	2,15%
Russia	2,52%	1,73%	2,31%	2,16%	1,97%
CEE Region	1,76%	1,73%	1,89%	2,04%	1,93%
Mexico	1,64%	1,27%	1,57%	1,75%	1,84%
Saudi Arabia	0,88%	0,81%	1,24%	1,40%	1,54%
Nigeria	0,63%	0,46%	0,66%	0,93%	1,49%
Pakistan	0,25%	0,35%	0,49%	0,93%	1,45%
Turkey	1,26%	0,92%	1,07%	1,28%	1,36%
Ethiopia	N/A	0,12%	0,25%	0,41%	0,70%
South Africa	0,63%	0,46%	0,41%	0,52%	0,61%

Of course, how demographic trends shape GDP growth, is even more complicated than this calculation: Lower working-age population with an unchanged population of senior citizens (which will be the case as the false data doesn't impact age groups born before the year 2000, only those born after that) will mean a higher dependency ratio. A higher dependency ratio in turn means a higher expenditure level for pensions and medical care, which reduces sources for investment that would fuel growth. Thus investment rate will most likely be lower than on which the numbers of Goldman Sachs are based. Also, internal consumption is a major factor in GDP growth. Per capita consumption, however, tends to be higher in working-age populations, than among senior citizens,[242526] thus

average per capita consumption will also be lower than on which Goldman Sachs based its forecast. Higher expenditure on pensions and medical care of senior citizens will further decrease per capita consumption levels of the working-age population. Our educated guess on the other hand assumes that investment rate and per capita consumption will be unchanged, as we lack sufficient resources to include these factors in the calculation as well, thus the real numbers for China's GDP will most likely be even worse, than our estimate. Therefore, if Yi's calculations for China's demographics are correct, then even our educated guess should be treated as rather the upper limit of what China's future GDP figures may actually look like, compared to the original forecast of Goldman Sachs.

share in global GDP (our revision)	**2010**	**2020**	**2030**	**2040**	**2050**
UKUSA Bloc	31,61%	32,10%	28,67%	24,78%	22,18%
China	9,32%	17,90%	19,25%	17,71%	15,13%
Euro Area	19,52%	15,59%	13,17%	11,73%	10,45%
India	2,64%	3,23%	5,50%	7,90%	10,13%
Indonesia	0,38%	1,04%	1,83%	2,39%	2,87%
Japan	8,94%	6,00%	3,67%	3,11%	2,74%
Brazil	3,40%	1,73%	1,92%	2,09%	2,24%
Russia	2,52%	1,73%	2,33%	2,21%	2,05%
CEE Region	1,76%	1,73%	1,92%	2,09%	2,01%
Mexico	1,64%	1,27%	1,58%	1,80%	1,92%
Saudi Arabia	0,88%	0,81%	1,25%	1,44%	1,60%
Nigeria	0,63%	0,46%	0,67%	0,96%	1,55%
Pakistan	0,25%	0,35%	0,50%	0,96%	1,51%
Turkey	1,26%	0,92%	1,08%	1,32%	1,41%
Ethiopia	N/A	0,12%	0,25%	0,42%	0,73%
South Africa	0,63%	0,46%	0,42%	0,54%	0,64%

The geopolitical impact – a comeback for US power?

If these numbers are correct this will have implications for the global balance of great powers. First, regarding Sino-US power dynamics, China may never be able to surpass the United States in nominal GDP. Should our adjusted GDP figures come true (even which may be optimistic for China) while the share of China will be 19,25% in 2030, 17,71% in 2040, and 15,13% in 2050, that of the US will be 22,5% in 2030, 19,15% in 2040, and 16,97% in 2050. Second, this will also greatly change Sino-Indian power dynamics, and bring India's catchup to China by about one decade ahead, as India will reach half of China's nominal GDP in the early 2040s instead of the early 2050s, and by the early 2050s, it will be over two-thirds of that instead of half of it. This means from now on to 2050, the rise of India's economic power compared to that of China and the United States will show a similar trajectory, as China's rise compared to the United States did between 2005 and 2020. Also, China's share in the global economy in 2040 will be actually less than it was in 2020.

Another aspect of this slowdown is that it may signal not only a peak China event to come but also one that we could call a kind of "bottom US" as well, rather surprising given that the main trend regarding the big picture is a relative decline of the US share in global GDP. These factors suggest however roughly two decades of a resurgence of relative US global power to be expected around the middle of the century. While the share of the US in the global GDP is on the decline, and will most likely be so for the rest of the century, another factor regarding the relative power of the strongest actor of a system is the difference between it, and the second-strongest one. If one produces 20% of global GDP, and the country with the second largest economy produces 15%, is a totally different situation, than the one in which the largest equally produces 20%, but the second largest one stands only at 5%. In this case, if China's share in the global GDP starts to decline more rapidly, the relative power of the US will start to increase once again, as long as the growth of the third largest actor, India does not surpass China, as from there on, as a continuously growing India takes over second place, with the shrinking of the gap between it and the US, the relative position of the US will weaken again. Therefore, such a turning point, where the decrease of China's share in global GDP assumes faster pace than that of the US, could be called "bottom US". The long-term forecast of Goldman Sachs puts such a turning point in 2060. If our revised numbers, based on Yi Fuxian's estimates on China's demography are correct, that would be this turning point would occur as soon as 2040, and India's growth could surpass China as early as 2060. If correct, this means that we

will see a "bottom US" as early as 2040, and from then on, the gap between it, and the second largest economy of the world, China, will be increasing until 2060, at which point India will take over that position from China, and the gap between it and the US will be decreasing from then on. Therefore, the two decades between 2040 and 2060 will likely see a limited resurgence of relative US power, peaking around 2060.

Conclusion

To summarize, several different factors suggest that not only the explosive growth of China that we were used to came to an end in the last decade, we are also close to a "peak China" event when China's share in the world economy will start to actually decrease. While even earlier this decade, China was forecast to surpass the nominal GDP of the US before the end of the decade, [27] by now this event has been postponed in forecasts to 2040 [28] or even to 2060,[29] but it more and more looks like it may never even occur at all, and China's GDP growth will slow below that of the US without ever surpassing it.[30] The main factors behind the slowdown appear to be China's politically motivated crackdown on its own tech sector, and semiconductor sanctions against China by the US. These two actions simultaneously put the electronics and IT sectors of China under pressure. China's financial sector, on the other hand, has to face pressure from China's real estate crisis, and increasing indebtedness, where much of the debt has been outsourced to the provincial level by the government so that official figures do not immediately show, how bad the situation is. The most critical factor however seems to be demographics. With China greatly modifying data reported to the UN between 2019 and 2022, it turned out that it likely manipulated its demographic data, as a change of such scale cannot be explained by demographic changes that could possibly occur in a three years timespan. While China's population was scheduled both to peak and be taken over by India in the early 2030s, the revised data unveiled that both are already occurring in 2023. Research by Yi Fuxian goes even further, by getting to the conclusion that even the revised numbers are false and that in reality, the Chinese demographic situation is even worse, the real population may be as much as 150 million lower than even the revised data, and the number of infants born in the year 2020 may be as low as little more than half of what is officially proclaimed. These anomalies in the demographic data only apply to cohorts born after the year 2000, suggesting not only China's population to be much lower than anticipated, but that it is specifically the younger generations where all the deficit is. This means that from the 2020s on, China will face an exponentially increasing shortage of working-age population compared to those numbers that all the economic forecasts are

based on. The number of senior citizens on the other hand will be as high as projected in the forecasts, thus the dependency ratio will also be higher than expected. If Yi's numbers are correct, the inflection point with the economic growth of China slowing below that of the US will occur sometime in the 2030s. This will also mean a "bottom US" event, from where, while the global share of the US economy will still continue to decline, the gap between it and the second largest economy in the world will actually increase up until the point where India overtakes China, which cannot be expected before the second half of the century. Thus while the US-led unipolar world order is over, and this will only become more apparent in the next decades, the slowdown of China will likely provide a few decades where the United States will be able to strengthen its position as primus inter pares in the new multipolar order. Regarding the great power game, this means that China will never reach global primacy, and while Asia and the developing world will continue to rise, the trend will most likely be a simultaneous rise of great and middle powers including countries such as India and Indonesia, with China being merely the strongest among them, instead of being an emerging superpower that could aspire to take over the position of the United States.

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