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Is This the End of Growth?

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We are in the midst of a financial crisis, there is great uncertainty surrounding the immediate future of the euro and the bright growth prospects of developing countries such as China and India are dimming.

At a moment when the world's attention is focused on the next quarter, year or at most a couple of years, it might be worthwhile to step away from the present quagmire and look at the longer growth trends and how economic development in the 21st century will differ from that of the 20th.

This is exactly what Robert Gordon, professor of economics at Northwestern University has done in a recent provocative and much discussed paper (Gordon, 2012). The central thesis of the

paper is best illustrated with a figure of his, which plots growth in real GDP per capita for the leading economy in the world, which was the UK from 1300-1906 and afterward the U.S.1 The figure is reproduced below. The graph reproduces the centuries of dismal growth before 1700 when Britain – and all other countries in the world – experienced little trend growth in output per capita. Gordon's central thesis is that three important Industrial Revolutions have taken place, but that they did not have equal importance for economic output. The first, was the introduction of the steam engine and the cotton gin, introduced in the UK between 1750 and 1830. This initially ignited a second growth trend between 1870-1900, ushering in the invention of the combustible engine, running water, sanitation and electricity. These innovations would dramatically transform the lives of average Americans over the next few decades. Finally, the third industrial revolution took place with the introduction of computers and electronics reaching a peak with the birth of the internet in the 1990s.

Gordon argues that the second industrial revolution was the most important, allowing for dramatic improvements in living standards from running water, indoor plumbing and the automobile. It also allowed for a large shift towards employing mechanic rather than human and animal force in the production and transportation of goods. This transformation allowed for a sustained boom in growth of GDP per capita that lasted until the mid-20th century. He further argues that although the

continuous advancement of information technology is impressive, it pales in comparison with the second industrial revolution. Moreover, most of the possible benefits of the third revolution have been experienced. Even if a fourth industrial revolution were to take place, much of the gain from the previous ones cannot be repeated since many positive effects of previous technological innovations can only happen once. Women joining the work force, urbanization and instant communication are three obvious examples.

On top of this, Gordon argues that there are "headwinds" which work against future economic growth in the U.S., most prominently the growth in inequality, poor educational attainment and the climate challenges awaiting us in the coming decades.

To be fair, the empirical methodology used by Gordon has been criticized by several scholars, but the central point that economic growth cannot be taken for granted is worth some reflection. Pondering that thought leaves us with a provocative suggestion. What if the economic growth of the last 250 years is a one-time event? What if we will see economic growth drop to barely positive by the middle of this century? Gordon himself suggests that by the end of the century, we might reach a point when 0.2 percent in U.S. per capita growth is the new normal. So what would that imply?

What Would Low Growth Imply?

Would such a paradigm shift be catastrophic? First, Gordon is careful in noting that he is looking at the country at

the technological frontier, meaning that there is plenty of room for other countries to grow at high rates, while still catching up to the U.S. The majority of people in the world – including those who live in China, India and decent chunks of Europe – can still grow at substantial rates and reach GDP levels comparable with the U.S. Even if the U.S. stopped growing today, it would still take India 50 years to catch up at 5 percent annual growth in GDP per capita. And many of the one-off improvements – greater female labor force participation and urbanization in particular – have yet to make their full impact in many parts of the world. Even if Gordon is right, the "end of growth" for the world as a whole is unlikely to happen in this century. And who is to say that a new world leader, say, China or India, will not take over and continue to push the technological frontier, even if the U.S. stumbles?

Second, would it be so terrible if economic growth slowed to a halt? The great concern these days about a lack of growth is primarily due to technological progress: If GDP growth does not keep up with productivity growth, the result is unemployment, but an end to productivity growth would end this worry. Even by Gordon's estimate, this could happen in the U.S. in the middle of the century at a GDP of around 80,000 dollars per capita. More equally distributed, this would be plenty for a comfortable life. Interestingly, this point was argued 80 years ago by the father of modern macroeconomics, John Maynard Keynes, in an essay titled "Economic Possibilities for our Grandchildren." In the essay, he suggested that his grandchildren might

use improvements in productivity to enjoy more leisure and less work. Maybe we do not need economic growth beyond a certain level.

Third, and probably most importantly, as the old saying goes, the future is an incredibly difficult thing to predict. As vague a term as "industrial revolution" is, it is difficult to imagine another one not taking place in the 21st century. Whether it will be fusion energy, nano-technology, bio-engineering or vastly faster computers, nobody can tell.

Even if you do not want to take the speculations of a coming technological singularity, in which super-human computers will vastly improve our technological abilities at face value, it is difficult to imagine there not being a productivity gem or two awaiting in the coming decades. In addition, though economists are still far from having a fully developed explanation of the sources of economic growth, we are not at a loss for explaining why economic growth started first in Great Britain, later in the rest of Europe and finally now throughout the world.

As elegantly articulated in Acemoglu and Robinson (2012), the existence of well-protected property rights and inclusive institutions that provide protection from powerful elites are the foundation for private innovation. As these basic rights are now more widespread than ever, it is difficult to imagine that the world of tomorrow will not continue to provide us with innovations that no previous generation could have dreamed of.

One thing is certain: to give the coming generations the best conditions, we must make sure to protect those rights, to continue to support them throughout the world and encourage innovation and growth through research and education.