

US GDP

An end to facile optimism about the future

Measured growth is lagging because invention and innovation has slowed

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JULY 12, 2016 8:28 PM

by: **Martin Wolf**

Some inventions are more important than others.” This is the most important point made by Robert Gordon of Northwestern University in his masterpiece, *The Rise and Fall of American Growth* (<http://next.ft.com/content/80c3164e-d644-11e5-8887-98e7feb46f27>). This book provides a deep analysis of the transformation of US economic life between 1870 and 1970 and the subsequent slowdown. Growth is neither inevitable nor steady. Ours is an age of disappointing growth because the technological breakthroughs are relatively narrow.

Deirdre McCloskey, a distinguished economic historian, insists that such “pessimism has consistently been a poor guide to the modern world. We are gigantically richer in body and spirit than we were two centuries ago.” She is right. But, Professor Gordon responds, we have not become richer at a constant rate. On the contrary, growth has been faster at some times than at others, even since the

industrial revolution.

Thus, the period after 1890 shows consistent increases in output per person and per hour. But the period between 1920 and 1970 was more dynamic than those before and after: over half a century, output per hour rose at close to 3 per cent a year. A better measure of innovation is the rise in “total factor productivity”: the growth of output, less the contributions of extra inputs of labour and capital. The pattern here is still more striking. The US economy experienced two periods of fast innovation: in 1920-1970 and, at a far slower pace, in 1994-2004. (See charts.)

This raises three huge questions.

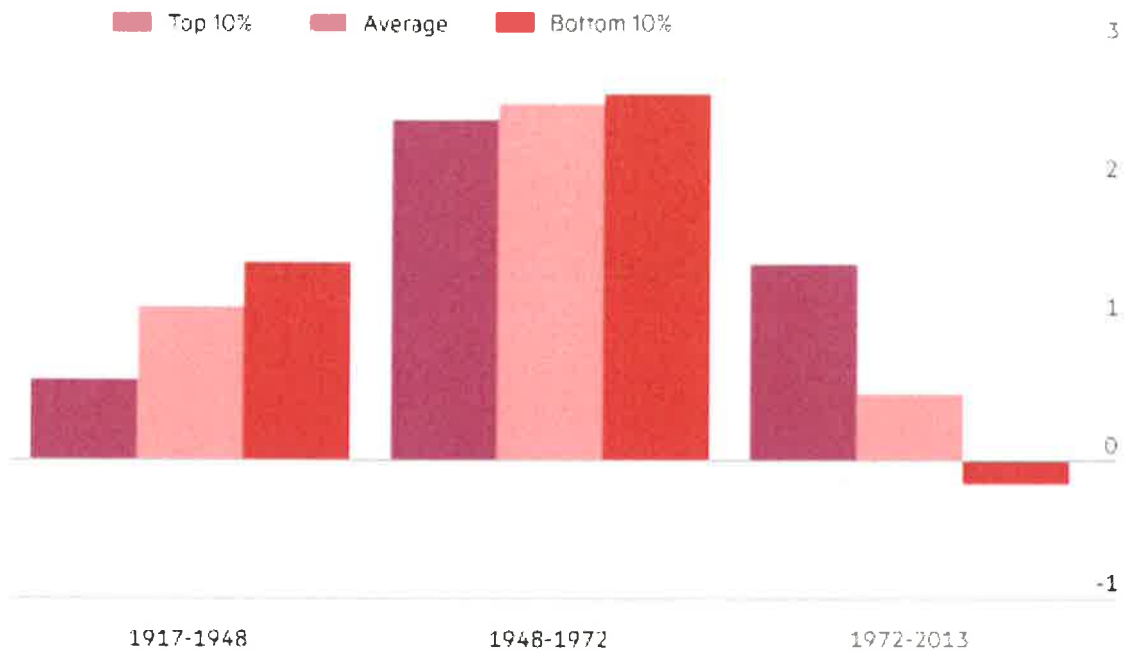
First, why focus on the US? The answer is that it has been on the global frontier of innovation and productivity (<http://next.ft.com/content/99cdeefc-1b77-11e6-b286-cddde55ca122>) since 1870. In the period up to the second world war, one or two European countries were also highly innovative. Since then, the US has been on its own.

Second, what explains the rising and then falling productivity growth? Prof Gordon’s answer is the rate and variety of innovations that appeared after 1870 and were introduced over the 1920-1970 period. This period saw an energy revolution: the exploitation of oil, the taming of electricity and the internal combustion engine. It witnessed the birth of the chemical industry and transformative developments in the supply of clean water and sewage disposal.

These led in turn to the creation of machines: the electric light, the telephone, the radio, the refrigerator, the washing machine, the automobiles and the aircraft. They led to the transformation of lives via urbanisation and the grid-connected home. These then drove an education revolution, as the economy demanded literate and disciplined workers. By comparison, the years since 1970 have seen relatively small changes in high-income countries. The productivity spike between 1994 and 2004 reflects the impact of the internet. It came and, soon thereafter, departed.

Incomes wax and wane

Growth in US real incomes* (% per year)



* By income group, including capital gains

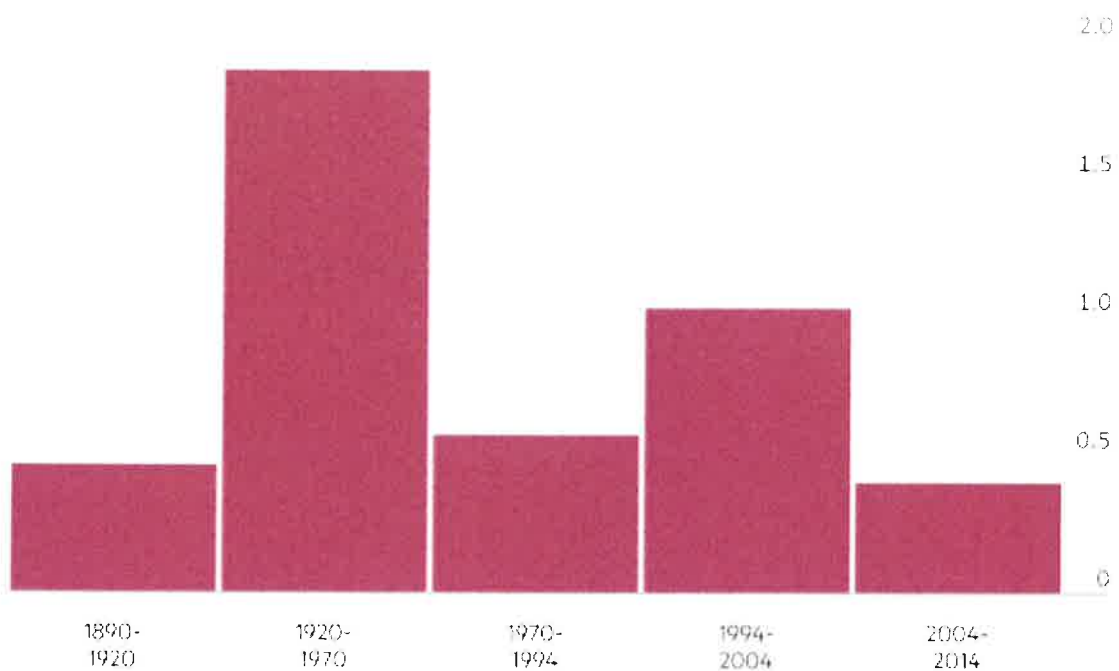
Sources: Robert J. Gordon, 'The Rise And Fall Of American Growth' (Princeton Univ. Press, 2016); World Top Incomes Database

Third, how far does mismeasurement distort the picture? The answer is that it does so significantly but not in ways that make today's performance look better, relative to that of the past. The opposite is far more plausible.

Growth of gross domestic product (http://www.ft.com/topics/themes/US_GDP) has indeed been hugely underestimated. One reason for this is delayed inclusion of new products in the data: there was no US price index for cars until 1935, decades after their invention. Such delays are smaller today. Another way in which measurement fails is the difficulty of evaluating improvements in new models.

The ages of innovation

Growth in US total factor productivity (% per year)



Source: Robert J Gordon - "The Rise And Fall Of American Growth" (Princeton Univ Press, 2016)

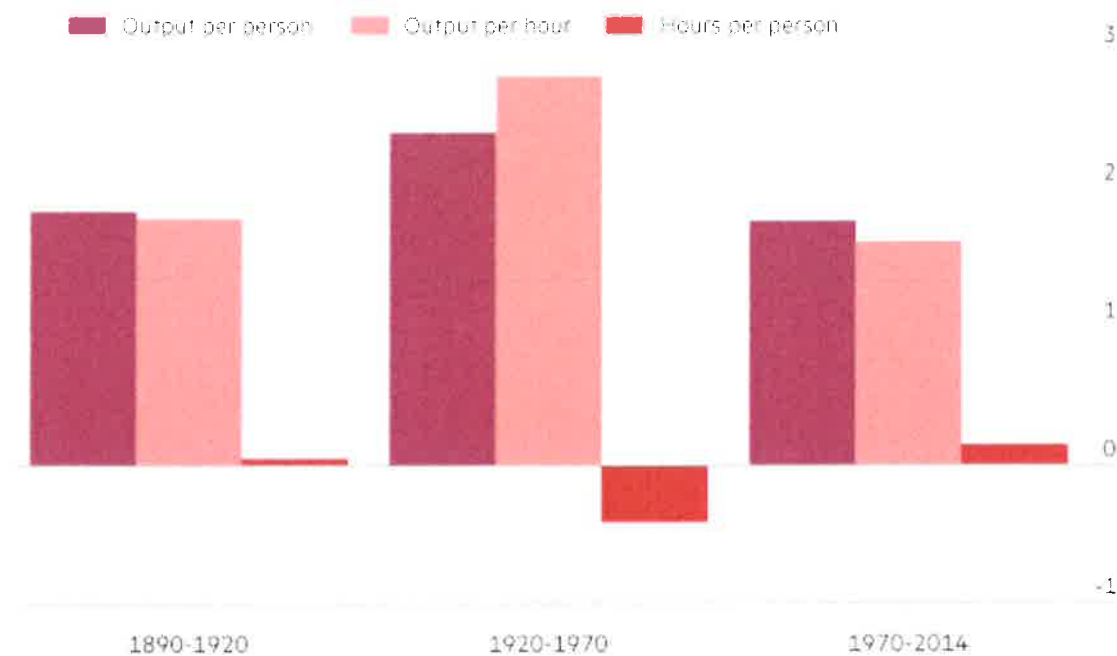
More important, GDP is not a good measure of the standard of living. As Prof Gordon notes, GDP does not value the increased variety of foods, the removal of horse droppings from urban streets, the faster speed of travel, the transformation of communications, the improved quality of entertainment, the enhanced comfort of central heating, the reduction in household toil, the diminution in the effort and danger of work, the ease of access to clean water, the safety of packaged food and, above all, the jump in life expectancy. In wealthy countries, almost everybody now alive takes all this for granted.

There is simply no reason to believe the rise in GDP or living standards is any more underestimated today than it was before. Measured growth is slowing because invention has slowed. Moreover, today's innovations (<http://next.ft.com/content/a0892bfa-0e23-11e6-b41f-0beb7e589515>) are narrower in their effect than those of the past.

Worse, their benefits seem to be less widely shared. Since 1972, not only has the growth in US real incomes been lower than before but the distribution of the gains has shifted away from those below the top 10 per cent of the income distribution. This helps explain the increasingly fraught politics of the US and other high-income countries, too.

The rise and fall of dynamism

Growth in US productivity measures (% per year)



Source: Robert J Gordon – 'The Rise And Fall Of American Growth' (Princeton Univ Press, 2016)

The story told by Prof Gordon demolishes both facile optimism about prospects for economic growth and facile pessimism about the end of employment. We are neither in the middle of an era of unprecedented economic advance nor on the brink of an era of exceptional job destruction. This is partly because technological progress is so limited. It is also because so much of our economy is immune to rapid productivity rises. Thus, in 2014, fully two-thirds of US consumption went on services, including rent, healthcare, education and personal care.

The challenge in these sectors is not that all the jobs are going to disappear but rather that it is hard to make them do so. That shift in the composition of output towards sectors where it is hard to raise productivity is a big reason for the slowdown.

The view that steady and rapid rises in the standard of living must endure is a pious hope. The tendency to believe that some “structural reforms” will fix this is, similarly, an act of faith. It is essential for policy to promote invention and innovation, so far as it can. But we must not assume an easy return to the long-lost era of dynamism. Meanwhile, the maldistribution of the gains from what growth we have is a growing challenge. These are harsh times.

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