



Insight

Is Low Productivity Growth the New Normal?

-Manchester Capital Management Strategy Group

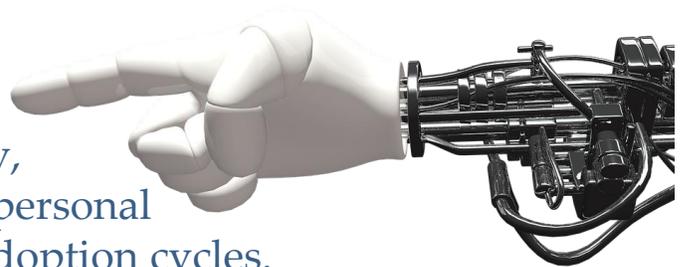
Productivity growth has not recovered during this business cycle. Is that important? Are old measurement tools no longer applicable in the 21st century? The classic definition of GDP growth is the sum of population growth and productivity growth. Barring a major change in immigration patterns, we can be fairly certain that U.S. population growth will remain mild (around 1% per year through 2030 according to United Nations projections). The standard measure of productivity is output per hour worked. It has averaged 0.5% so far this decade versus the post-World War II average of 2.3%. Simple math suggests that in order to achieve 3% GDP growth we must increase productivity back to the norm. So yes, productivity matters.

Productivity measurement becomes tougher as we transition from a manufacturing to service-based economy. One explanation for slowing growth is that we are not measuring it right. How do you determine the output of an iPhone? High tech gear likely enhances efficiency beyond its cost. The number of hours worked by employees is straightforward but how do you measure the quality of work in the service sector? We lament the high cost of new drugs but what about accounting for their value in avoiding more costly life-saving procedures?

Another theory is that the transition to service jobs from manufacturing naturally depresses productivity as service industries are more labor intensive and more difficult to automate. The Bureau of Labor Statistics reports that eight of the ten fastest-growing job categories are low-wage services. Over the last decade, low-productivity sectors have added nearly 7 million jobs while information and finance, where value-added per worker is higher, have barely budged.

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We believe these are significant factors but do not subscribe to the theory that low growth is the “new normal.” Many of today’s exponential technologies – robotics, biotechnology, smart phones, autonomous vehicles, personal digital assistants – are early in their adoption cycles. Over time, they should advance to the point that their rapid productivity advances accelerate overall productivity growth.

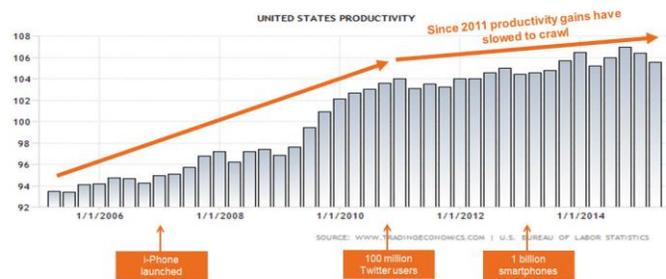
Some economists, most notably Robert Gordon at Northwestern University, think the Internet is not as potent as the arrival of electricity and motorized transit.¹ Look at how much the world changed (horses to cars, candles to light bulbs, walk-ups to skyscrapers) in the period from 1850 to 1910 versus 1950 to today. Slack productivity growth despite recent tech advances would seem to support his position. Or is this just a productivity paradox?

This paradox, often referred to as the Solow paradox in honor of Nobel laureate economist Robert Solow, refers to the phenomenon whereby the dividends from a disruptive technology are realized, with an initial lag, over decades due to the time required to use the new technologies efficiently. In 1987, Solow noted that “You can see the computer age everywhere but in the productivity statistics.”² It took another seven years after his statement for productivity to surge as computer usage became widespread.

We could be in the midst of another paradox. For all the anecdotal evidence that automation is prompting mass layoffs and presumably increasing productivity, the productivity statistics have been dismal. A recent paper from London’s Center for Economic Research sheds some light on the paradox.³ The authors, Georg Graetz and Guy Michaels, calculate that robotics of late have increased productivity by 0.35% per year. The IT revolution between 1995 and 2005 generated 0.60% of labor productivity growth. It bodes well for our future that our economy is realizing only 18% of its digital potential and sectors that are digitizing tend to have high productivity growth.⁴

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Productivity is suffering — is technology helping?
US productivity last ten years



<http://joshbersin.com/2016/09/the-future-of-work-its-already-here>

If robots are a substitute for human workers then one would expect countries with the highest investments in automation (like Germany) would lose more manufacturing jobs. Not only did Graetz and Michaels see no relationship between the use of robots and manufacturing employment but Germany lost fewer jobs (19% of manufacturing jobs between 1996 and 2012) than the 33% lost in the U.S. over the period studied. The arrival of robots tended to increase the employment of skilled workers while crowding out low-skilled workers. If automation were rapidly displacing workers, the productivity of remaining workers ought to be growing due to a smaller denominator in the calculation.

While exponential technology advancements are welcome, in order to truly improve productivity we have to improve at things that have not seen as much productivity advancement like construction or medical care. Continued improvement in things we are already good at do not move the needle as much. Cheap workers have reduced the urgency to invest in productivity-enhancing capital. Now that low unemployment rates are beginning to result in wage growth, we are hopeful that capital investment in general will increase. After all, workers are more valuable to replace when they’re expensive.

ENDNOTES

¹ Robert Gordon, *The Rise and Fall of American growth: The U.S. standard of living since the Civil War*, Princeton University Press, 2016

² Robert Solow, “We’d better watch out”, *New York Time Book Review*, July 12, 1987, pg. 36

³ George Graetz and Guy Michaels, “Robots at Work”, CEP Discussion Paper No. 1335, March 2015

⁴ *Digital America: A tale of the haves and have-mores*, McKinsey Global Institute, December 2015

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