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*undated*

# Why is productivity growth so low?
## 23 economic experts weigh in

Productivity is considered by some to be the most important area of economics and yet one of the least understood. Its simplest definition is output per hour worked, however, productivity in the real world is not that simple. Productivity is a major factor in an economy's ability to grow and therefore is the greatest determinant of the standard of living for a given person or group of people. It is the reason why a worker today makes much more than a century ago, because each hour of work produces more output of goods and services.

According to Ian Stewart, Deloitte's Chief Economist, "It is hard to overstate the importance of productivity in driving improvements in living standards. Since 1850, UK GDP per head has risen 20-fold, transforming our standards of living. If productivity had remained flat over that period, GDP per head would only have doubled."

What is worrying about productivity today is that data shows that it has been growing at a snail's pace for the better part of a decade, having been deteriorating steadily dating all the way back to the 1970s.

Just last month Christine Lagarde, Managing Director of the IMF, said in a speech that if "productivity growth had followed its pre-crisis trend, overall GDP in advanced economies would be about 5 percent higher today" and that "another decade of weak productivity growth would seriously undermine the rise in global living standards."

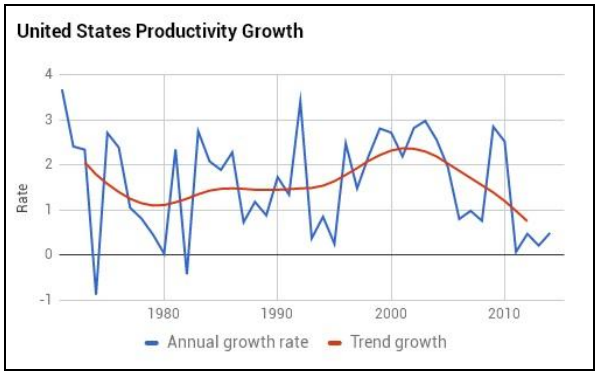
### Why is productivity growth dropping?

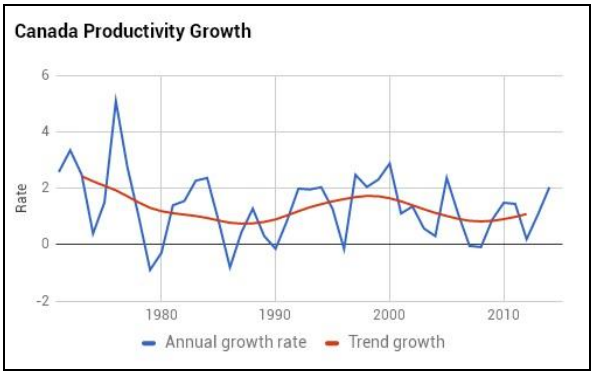
The OECD has written extensively on the subject of productivity growth observing that productivity is pro-cyclical, meaning that in times of recession productivity tends to fall and in times of economic growth, productivity tends to increase. Therefore, looking at producitvity growth in the shorter-term, such as quarterly or annually, can be misleading, as it is often extremely volatile. Most strong quarters or years of economic growth will show strong gains in productivity and vice versa. Looking at multi-year longer-term productivity growth, however, is more useful. For example, producivity growth has been low in the U.S. for the last 5 years, even as the economy has emerged from the financial crisis, which raises a lot of red flags.

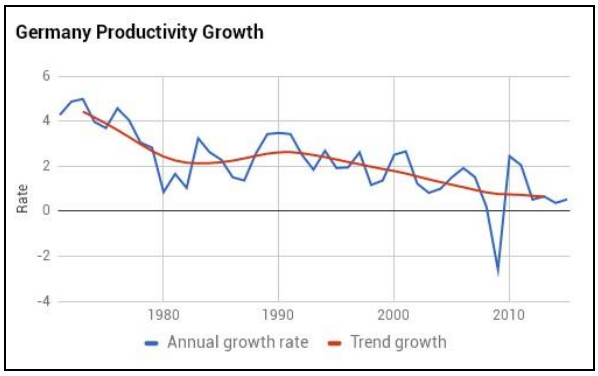
Indeed, U.S. manufacturing sector productivity increased 0.5% over the last five years from 2011 to 2016, which the U.S Bureau of Labor Statistics notes is "well below the growth rate of 3.2 percent from 1987 to 2016."

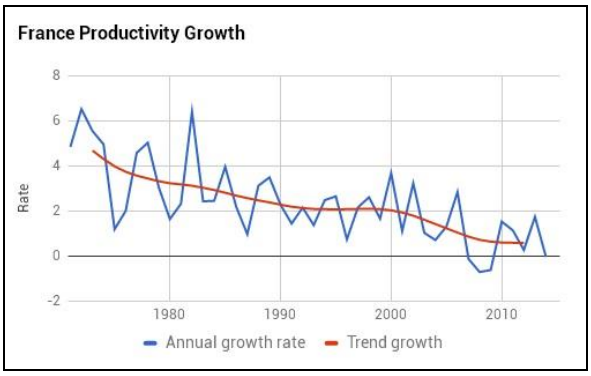
This is not exclusive to the U.S., as productivity growth has generally been low going back to the financial crisis for most developed countries. However, the drop in productivity has been going on for decades, all the way back to the 1970s in some cases.

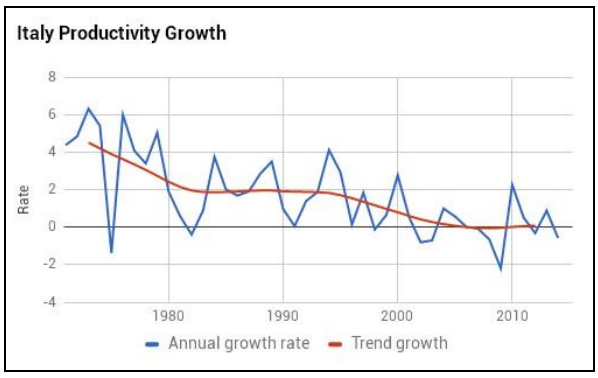
According to the OECD this productivity slowdown "has occurred at a time of rapid technological change, increasing participation of firms and countries in global value chains (GVCs), and rising education levels in the labour force, all of which are generally associated with higher productivity growth."

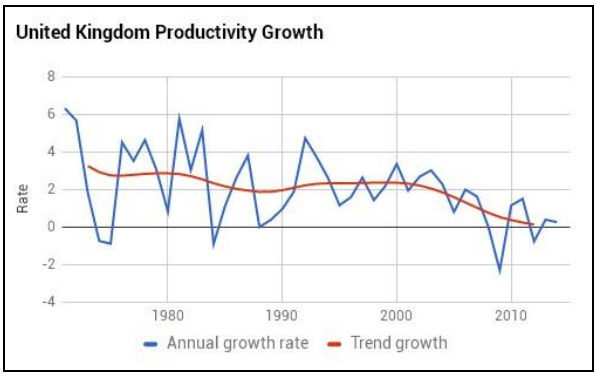


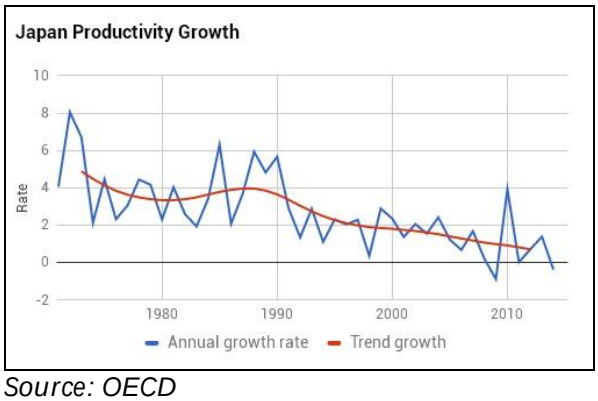



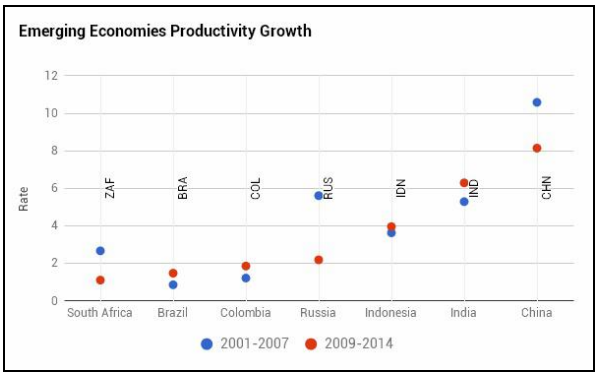




*Source: OECD*

These facts, which seem to be contradictory, have led analysts to come to a variety of conclusions as to the root of the problem. One explanation has been that the technological advances and management strategies that worked to propel productivity in the past have been fully implemented and are no longer contributing to productivity. Add to that a slowdown in capital investment after the financial crisis and one can expect that workers are no longer getting new technologies to make doing their jobs more efficient.

In addition, some have speculated that people that are now returning to the labor market after the financial crisis are no longer feeling the pressure to increase their productivity for fear of losing their jobs. This has prompted some to say that productivity isn't coming back any time soon.

Another popular theory is that we simply aren't counting it right. This is also known to statisticians and economists as "measurement error." Counting the output per hour worked for something like manufacturing is one thing, however, measuring the output of the services sector is another thing entirely. With the increase in technology and the service sector in recent years, this seems like a plausible explanation. How does one measure the output of an employee of Twitter? Or to use a more traditional example, how do you measure the productivity of a teller at your local bank branch?

Bill Conerly put it well in an article for Forbes: "Take banking, for example. Your checking account is clear as mud. The bank provides to you the service of processing checks, for which you don't pay (aside from exorbitant fees for bounced checks and stop-payments). However, the bank does not pay you a market rate of interest on the money you keep in your checking account. It's a trade: free services in exchange for free account balances. Government statisticians estimate the dollar value of the trade, so that the productivity of bankers can be assessed, but the figures are not very precise."

A slightly rosier viewpoint is that there is a delay in productivity gains from increased investment. Now that we've emerged from the financial crisis, businesses are likely to be investing heavily in hiring new workers and investing in R&D to prepare for the future, right? The idea being that despite the drop in producitivity in the last few decades, it will bounce back in the coming years, as it will take time to see those investments pay off in terms of productivity and ultimately higher growth and rising standards of living.

There are instances of this having happened in the past such as during the 1990s when the U.S. stock market was booming and firms were hiring people like wildfire. However, productivity was growing at a pace below the long-term average. Then productivity began to increase in years following, the late 90s and early 2000s.

However, this is probably an unlikely scenario, as private investment that predictably slumped during the financial crisis has yet to come out of its slump. And according to an IMF report, "business investment accounts for the bulk of the slump."

Others have placed the blame, especially in recent years, on regulatory forbearance, or bail-outs, as well as accommodative monetary policy. They argue that these policies have supported low-productivity firms that under normal circumstances would have failed. The OECD has termed these "zombie" companies, which have been spared the fate of "creative destruction," dragging down the overall productivity numbers.

A similar idea comes from Andy Haldane, the Bank of England's Chief Economist. He stated recently that the culprit is the divergence between high-productivity firms and low-productivity firms that has been widening not just in recent years, but for decades. His theory is that there have been a handful of highly productive firms that have existed from before and throughout the financial crisis to today, while a greater number in a "long-tail of laggards" have not been able to keep up.

His analysis of a representative sample of UK businesses showed indeed that more than half of the companies in the sample were below the sample's average for productivity by more than 50%.

According to Ian Stewart of Deloitte, this argument is quite compelling for two reasons:

The first being that this could be an explanation for why many businesses have lagged behind despite tremendous advances in technology and management over the years. The more productive firms, perhaps, have just been better at implementing those advances for higher productivity.

Secondly, this allows us to establish a link between low productivity and rising inequality across society, another one of the great socioeconomic mysteries of today.

Household income is dependent on wages, which are consequently dependent on a firm's ability to grow through greater productivity. The widening gap in productivity would account for the widening gap in household income and consequently, social equality.

Having said all of that, there are many ideas of what the issue is. Is it just one of those issues or is it a combination of many? Or is it none of them at all? FocusEconomics Insights decided to ask some of the experts from the economic blogosphere to give us their views on the issue (see annex).

## How can the productivity puzzle be solved?

A common theme in many of those answers is investment has dropped. Going back to Christine Lagarde, this was her diagnosis:

1. An aging population – Research has suggested that productivity decreases at a certain age and with most developed economies seeing population growth slowing, this could be part of the issue.

2. Slow-down in global trade – As more world leaders turn to protectionist measures to protect what's theirs, Lagarde believes that this has a negative impact on productivity. The thinking is that trade encourages firms to invest in new innovations and practices to make working more efficient, thereby improving productivity.

3. Unresolved issues arising from the financial crisis – Not much of an explanation needed here.

The last two on the list both point to the investment issues mentioned many times in this post.

As Lagarde stated, "We at the IMF therefore believe that all governments should do more to unleash entrepreneurial energy. They can achieve this by removing unnecessary barriers to competition, cutting red tape, investing more in education, and providing tax incentives for research and development (R&D)."

The Brookings Institution, another organization that has done substantial research on the subject also came to a similar conclusion:

"Weakness in capital formation has contributed substantially to slow growth in labor productivity. Two policies to increase the rate of investment are: first, stimulate aggregate demand; and second, reform of corporate taxation which should, in turn, increase investment in manufacturing."

While Ian Stewart tends to subscribe to Andy Haldane's notion that low-productivity laggards are the cause of the issue and policy should be directed at those firms to boost their efficiency.

Whatever the case, this is certainly a long-term issue that no one piece of policy to boost investment or efficiency of firms today is going to solve the problem tomorrow. However, acting now can hopefully be thought of as a down payment on a much more productive future.

## 23 economic experts

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Mike Norman

"It's because Gross Private Domestic Investment has collapsed. We don't invest. We just financialize everything [...] Government Consumption Expenditures and Gross Investment, that's way down, too. We need roads, bridges, infrastructure, science research, basic R&D. They're cutting back on all that stuff. That's why [...] You have Wall Street in charge and they only want to financialize everything."

Visit Mike Norman's blog Mike Norman Economics. You can also follow him on Twitter

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Karl Denninger

Commenting on low-productivity growth in the U.S.: "Medical cost inflation and the incentives to both remain ill and not work. Specifically, PPACA has driven a lot of it, as has expansion of SSDI. Not only does this destroy productivity directly it does so indirectly by driving deficit spending, which destroys the value of one's earnings. Last year that destruction was approximately 7% on a monetary basis just from Federal Debt expansion alone. "You'll never outrun a 7% devaluation with expansion of output. To stop and reverse this you must implement the health care reform I have put forward. Here are the requirements and here is the implementation.

"Not only does this immediately take roughly $400 billion out of federal spending annually from one disease alone (Type II diabetes) it will take the current deficit and turn it into a permanent surplus.

"It will also produce a one-time ~15% labor productivity increase (!!) in economic terms and since it ends deficit spending it turns what is now a 7% devaluation into a roughly 1% increase in valuation, which (from an economic point of view) reflects immediately in productivity.

"Don't do this and there's no way out because at the current 8%+ annual compounded rate of increase in Medicare and Medicaid in the US, which has been going on now since 1998 (which is the furthest back I have detailed "as spent" data for from Treasury) the exponential growth of those two programs will destroy not only productivity but the federal budget and economy as well."

Visit Karl Denninger's blog The Market Ticker. You can also follow him on Twitter

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James Picerno

"There are several theories about why US productivity has fallen recently. Although no one's really sure about the cause, there appears to be a smoking gun in the sluggish rate of growth in capital spending by businesses. One measure of capital expenditures (Capex), which includes investing in new technologies to boost productivity, is tracked by the US Census Bureau via manufacturers new orders for nondefense capital goods ex-aircraft. Business investment has been flat to negative in recent years, according to this benchmark. For instance, the average over the past five years (as of February 2017) for the rolling one-year percentage changes for this indicator is -1.3%. Soft to negative Capex alone may not fully account for weak productivity, but it's a contributing factor."
Visit James Picerno's blog The Capital Spectator. You can also follow him on Twitter

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Daniel Lacalle

"The decline in productivity in my opinion is the result of a combination of factors:
- Perpetuating overcapacity through cheap debt and excess liquidity.
- Large increase in subsidies to obsolete or low productivity sectors (particularly so-called national champions) including currency devaluations that are indirect subsidies to rent-seekers and crony sectors.
- Large increase in government spending aimed at financing areas with no real economic return and white elephants.
These factors make capital allocation go to low productivity sectors because incentives are provided through fiscal and monetary policy. Financial repression incentivises low productivity subsidising it."
Visit Daniel Lacalle's website here. You can also follow him on Twitter

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Alden Abbott

"One problem is serious tax distortions, particularly high corporate income tax rates (particularly in the US) that discourage capital formation, lead to inefficient capital markets, and are in substantial part borne by labor. The secular slowdown in productivity may be associated particularly with a steady rise in the burden of regulation in all parts of the economy, and in particularly anticompetitive market distortions. For more on the nature and extent of overregulation, see the essay by Abbott and Singham in the volume of essays released as part of the Heritage Foundation's 2016 Index of Economic Freedom. Also see the annual 'Heritage Foundation Red Tape Rising' report, for a discussion of American overregulation. In short, what is needed is a strong dose of free market economics, a fact which seems to escape the mainstream neo-Keynesian economists."
Visit Alden Abbott's blog Truth on the Market. You can also follow him on Twitter

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Constantinos Charalambous

"Well that is an interesting question and indeed there are answers on both the macro and micro level as well. For me the explanation lies in the assumption that labour is paid its marginal product. If we are to believe that this is the case, the fall in GDP witnessed from the financial recession of 2007-2008 negatively affected the wage level all over the globe. The fall in wages undoubtedly affected productivity levels. This situation was also the cause for the renegotiation of psychological contracts which also negatively affected productivity. See, when workers are not happy with their remuneration package (and they rarely are when their wage is negatively affected) they will be less prepared to go out of their way to enhance their productivity."
Visit Constantinos Charalambous's blog Everyday Economics Explained

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Timothy Taylor

"Part of an explanation for low productivity growth seems to be that the technologies and practices that lead to higher levels of productivity are not diffusing as quickly across economies. For example, an OECD study in 2015 found that the the productivity gap between the leading 100 firms in various industries and the rest of the firms in that industry is rising. A study by economists Jae Song, David J. Price, Fatih Guvenen, and Nicholas Bloom found that the dispersion of wages within US firms hasn't changed much, but the dispersion of wages between US firms has risen substantially. Andrew Haldane of the Bank of England recently gave a talk arguing that the diffusion of productivity across national economies. has been falling rather than rising in recent years. From this perspective, the hard question here is whether so many firms lack the ability to make productivity-related improvements (perhaps because they lack organizational or human capital needed to do so) or whether they lack incentives to make such investments (perhaps because it is hard for firms to be confident of earning a profit on such investments)."
Visit Timothy Taylor's blog The Conversable Economist. You can also follow him on Twitter

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Dean Baker

"I think much of the story is endogenous in the sense that a weak labor market forces workers to take low pay and low productivity jobs. In other words, if we pushed the economy with more spending (e.g. larger budget deficits or smaller trade deficits) we would see more productivity growth as workers shifted to better paying, higher productivity jobs, and firms adjusted to a more expensive workforce with labor saving innovation. The weak growth of the last decade has meant more jobs in low productivity sectors like retail and restaurants and less capital investment.
"I also think there are pro-growth policies that we could do. For example, a financial transactions tax that reduced wasteful trading in the financial sector, as would measures that reduced waste in the health care sector. But the waste in these areas is not new, so they can't explain the slowdown.
"Since the slowdown has been nearly universal, I think it is hard to explain as anything other than the impact of weak demand growth. Countries were at very different stages of technological development, so if the explanation involved something inherent with technology, we would expect the further back countries to still be seeing rapid growth."
Visit Dean Baker's blog CEPR Beat the Press blog. You can also follow him on Twitter

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Carola Binder

"Byrne et al. (2016) provide some evidence that the apparent slowdown in productivity growth is real, and not simply driven by measurement error. It is still possible, however, that some undiagnosed measurement issues may be causing us to overestimate the severity of this slowdown. I think that the 3% annual productivity growth between the end of World War II and the early 1970s is unlikely to quickly return for a sustained period, but intermittent shorter waves of higher productivity growth are certainly possible as various innovations that are in process eventually result in productivity gains. If macroeconomic and financial stability can be maintained, I think this should improve the odds of stronger productivity growth by encouraging capital formation and investment in innovation."
Visit Carola Binder's blog Quantitative Ease. You can also follow her on Twitter

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John H. Cochrane

"In my view, the increasing sclerosis imposed by the regulatory state is a large part of the problem. It takes years to get permits to do anything, if you can get it done at all. More and more industries are becoming less and less competitive as regulatory barriers get stronger. We see the results — fewer new businesses forming, and high corporate profits despite low investment. In addition, the misguided incentives of well intentioned social welfare programs keep people from moving to better jobs.

"Is that the whole explanation? Maybe not. But it is clearly part of the problem. And it's one we know how to fix!"
Visit John H. Cochrane's blog The Grumpy Economist. You can also follow him on Twitter

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 Livio Di Matteo

"Low productivity growth is one of those puzzles that just does not seem to go away. I think productivity growth has fallen because economies have become more service oriented and service industries in general are more labour intensive and the productivity gains of new technology have materialized more slowly than goods production. As well, very often each country can be a special case and poor institutions can further slow adjustment as can aging populations. I think the pace of technological diffusion will pick up in the next decade and then the question will be why is productivity growing so fast."
Livio Di Matteo blogs on Worthwhile Canadian Initiative. His personal blog Northern Economist 2.0.

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 Colin Lloyd

"It was Robert Solow who in 1987 stated 'You can see the computer age everywhere but in the productivity statistics.' Back in 1993 Brynjolfsson identified four reasons for what has become known as the productivity paradox:-
1. Mismeasurement of outputs and inputs.
2. Lags due to learning and adjustment.
3. Redistribution and dissipation of profits.
4. Mismanagement of information and technology.
As recently as 2014 Return of the Solow Paradox? Published in the American Economic Review finds the paradox still unresolved. More worryingly the authors find that when productivity improvement can be identified 'it is driven by declining relative output accompanied by even more rapid declines in employment.'
We are entering an era where machines replace humans rather than enhance their performance. This is among the greatest challenges facing society today and in the future."
Visit Colin Lloyd's blog In the Long Run. You can also follow him on his weekly webcast Linear Talk

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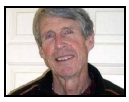 Elliott Morss

"My first response is that this concern about declining productivity is of secondary importance. The problem is normally formulated as follows: Output per man-hour is not increasing. That means without more people, output will not increase. The fact is that productivity grew rapidly during and after the 2008 depression because people lost their jobs. That provided a spike in productivity. Now, companies realize they fired more than they should have and are hiring more back. These adjustments are minor when compared with the effects of automation that is wiping out jobs worldwide in both the production of goods and services."
Visit Elliott Morss' website Morss Global Finance. You can also follow him on Twitter

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 Mike "Mish" Shedlock

Many believe productivity is understated. They cite cell phones and other technological advances. That's actually a reason to believe productivity is declining. People are tied to their phones for work. How many hours do people spend on the phone while on vacation, on weekends, or on their days off answering corporate emails? There are no numbers on the above, nor are there any numbers on the hours that supervisors at McDonald's, Target, Macys etc, put in. Given performance pressures on big box retailers, pressures to work more than 40 hours while getting paid for 40 hours must be intense.
Read the rest of Mish's Productivity Myths Shattered. You can also follow him on Twitter


George Selgin

"There are of course all sorts of factors contributing to the productivity decline, including demographic ones that we can do little about—such as the low labor participation rate. But there are others that policy can and should address.

"Topping my list of such factors, both because it is the one I study most closely, and also because it is generally regarded as important by students of economic growth, is the reduction in banks' contribution to productivity stemming from policies hindering their capacity to serve as efficient financial intermediaries. "Macroprudential" and monetary policies have both contributed to this reduction, by steering savings away from productive lending and investment, and toward the government and its agencies. Thanks to the combination of low market interest rates, interest on excess reserves, and new Liquidity Coverage Ratio requirements, for instance, commercial bank loans and leases, which used to be almost equal to total commercial bank deposits, are now but 80 percent of such deposits, while bank reserves, which used to be a trivial share of deposits, are now about 20 percent of those deposits. All this translates into less productive investment of savings, and hence into lower productivity generally.

"Economists of economic development have long bemoaned 'financially repressive' policies—their name for policies, such as high bank reserve requirements, generally found in poorer countries, aimed at diverting scarce savings from those countries' private sectors to their governments. These policies, they say, are among the more important causes of world underdevelopment. Many of today's supposedly enlightened macroprudential and monetary policies are no less financially repressive. They are reducing productivity in the world's more advanced economies just as their lower-tech counterparts have reduced in poorer countries."

George Selgin contributes to the Cato Institute's blog Alt-M. You can also follow Alt-M on Twitter

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David Andolfatto

"Why would one ever expect productivity growth to grow smoothly, year after year, at some constant rate?"

Visit David Andolfatto's blog MacroMania. You can also follow him on Twitter

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Jeff Miller

"From my investment manager perspective – I am interested in excellent research, but also attentive to unusual events. "In 2000, the Y2K issue pulled many people back into the labor market and also plenty of computer sales forward. In the following recession, and again in 2008, companies laid off workers but tried to produce the same output. We have all seen businesses like that. "The result? Productivity increased as payrolls were cut and has slowed down as it has normalized."

Visit Jeff Miller's blog Dash of Insight. You can also follow him on Twitter

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Antonio Fatas

"That's a tough question. I am not sure we have a definite answer. There are two explanations that I find plausible and there is empirical evidence supporting both: "For the US, I am big fan of John Fernald's work and his view that productivity declined as the effects of the IT/New Economy wave died out and some of this started before the crisis. He has documented this hypothesis very clearly for the US economy.

"From my own work that combine business cycles in models with endogenous growth, I believe that recessions have a permanent effect on productivity though hysteresis effects. My recent empirical work on this suggests that this was the case as well during the current crisis. This is a level effect, not a growth effect and should not last beyond the recession — unless we believe that there is more to it. Some of the recent work by Blanchard and others looks into the idea of interactions between confidence and productivity growth that could suggest the possibility of multiple equilibria (you could call it superhysteresis).
"So will it bounce back? My sense is that if we manage to stay away from recessions it will bounce back relative to what we have seen during the crisis but it will not go back to the early 2000s period unless there is something fundamentally new in technology and innovation. "But all these statements come with large standard errors - trying to understand trends with 10+ years of data is not obvious."
Visit Antonio Fatas' blog Antonio Fatas on the Global Economy. You can also follow him on Twitter

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Miles Kimball

"Here is one factor other people may not have emphasized: as long as the major categories of goods and services each have a price elasticity less then one, if they get cheaper relative to other things, they also become a smaller and smaller share of the budget. So continued improvement in things we are already good at, like agriculture and manufacturing, adds less and less to overall measures of economic growth per percent that they themselves improve. So unless there is a truly dramatic improvement in something we are already good at, improving at what we are already good at won't get us good overall growth. We have to improve at things that have not been improving very fast. I think why the rate of technological progress in construction is so slow an excellent example of the kind of puzzle we need to figure out and fix. If we could combine that with reduced land-use restrictions, we could bring down the cost of housing, which is a huge item in household budgets. That would add a lot to overall economic growth.
"Medical care is another huge chunk of GDP. Here, what would get better measured growth is also the direction we need to move medical care. Here I follow Clay Christensen, Jerome Grossman and Jason Hwang: "Get pinpoint diagnosis so you know exactly what needs to be done in the vast bulk of common situations. Have technicians and nurses (not doctors) specialize in doing the procedures needed in all of these common situations. Doctors then only take care of the hard cases where diagnosis is difficult. If you know what to do right away, a doctor shouldn't do it! Someone less expensive should.
"Good diagnosis and well-defined procedures for most common situations also makes it possible to measure productivity improvement in medicine much better: number of procedures (that are clearly indicated by the situation) done at what cost and with how few complications.
"By the way, low productivity growth as measured isn't our only problem. The rise in obesity and the complications to which it gives rise is a huge drag on welfare that doesn't reduce GDP. Just think how much better off the US would be if it had exactly the same measured GDP it has now but the obesity rates we had 50 years ago."
Visit Miles Kimball's blog Confessions of a Supply-Side Liberal. You can also follow him on Twitter

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Neven Valev

"We had a period of higher than normal productivity growth after the fall of communism when globalization took off, and trade and foreign investment intensified. The freer reallocation of assets globally allowed for more effective specialization while more open trade allowed for greater production scale. This process did, however, slow down over time as countries converged technologically and in terms of institutions and wage levels. With that, the growth in productivity slowed down. At the same time, the new digital economy does not seem to contribute to productivity growth, at least not yet and not in measurable terms. I see no reason for a dramatic change going forward. There will be innovation in various areas of the economy and the average worker will be able to put out more output over time but without major leaps forward."
Visit Neven Valev's websites TheGlobalEconomy.com and GlobalPetrolPrices.com.
You can also follow the TheGlobalEconomy.com on Twitter and Facebook


John Quiggin

"I think we are seeing a breakdown of the relationship between the financial sector and real economic activity. That's partly because the financial sector has ceased to be concerned with the productive allocation of capital and partly because the relationship between socially productive activity and market returns is weaker in an information economy."

Visit John Quiggin's blog here. You can also follow John Quiggin on Twitter

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David T. Flynn

"When we write the economic history of this period I think the changing nature of the economy, e.g. transition from a manufacturing based economy to a service based economy, will be seen to have changed the fundamental nature of the knowledge and technology diffusion. This transition, combined with decreased policy focus on basic research and development funding, and the large public/private disruption due to the financial crisis, combined to generate a low investment, low knowledge diffusion environment making general productivity gains scarce. I do think the OECD report emphasis on the fact that high productivity firms remain highly productive, but the gaps between those firms and others expand is very compelling in this regard.

"I concur with Ms Lagarde'a assessment that the situation is likely beyond the capacity of the private sector alone. Prompt resolution of the issue necessitates some version of a public/private combination. There are many directions that could encourage expanded investment in productivity enhancements but here again is a reason to be skeptical. It does not appear to be an issue likely to resolve itself of its own accord, nor do recent policy and political statements from world leaders suggest we are moving in the right direction on this front. For example, diffusion through trade or the movement of factors of production to highest/best use seems at risk with issues like Britain out of the EU or the anti-free trade approach of President Trump."

Visit David T. Flynn's blog Barter is Evil. You can also follow David T. Flynn on Twitter

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Steve Keen

"My main explanation here is that much business investment is debt-financed, and with the accumulated corporate debt we now have worldwide (see the data page on my new website for details), the level of investment in the aggregate has fallen so less innovation is occurring, and less still is being manifest in new technology. Since labor productivity really measures the output to employment ratio, a decline in investment will turn up as declining growth in labor productivity.

"Japan went through the same process starting back in 1990. It's why the stories of "The Rising Sun" have evaporated, and Tesla and Apple dominate where once Toyota and Sony ruled."

Visit Steve Keen's blog ProfSteveKeen. You can also follow Steve Keen on Twitter