



MACRO STRATEGY

A Creativity Boom? Possible Productivity Gains After the Pandemic

As of August 6, 2020

Key Takeaways

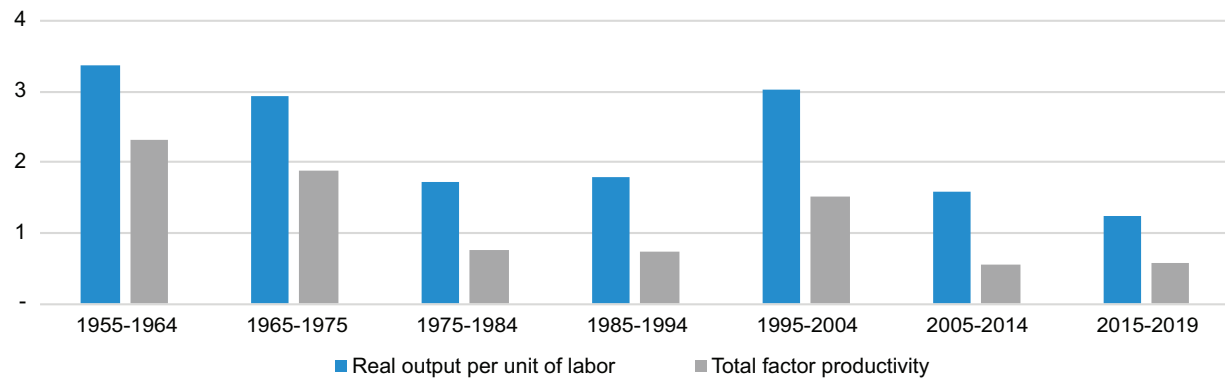
- Conditions appear ripe for an innovation, and innovation adoption, boom.
- Sustained capital investment beyond the current COVID-19-inspired scramble will be critical to any increase in productivity, but faces considerable headwinds.

A productivity boom would be a silver lining to the COVID-19 pandemic and recession. Although such a boom is by no means guaranteed, conditions appear good for an uptick in productivity.

Fifteen years of low productivity

The U.S. has been going through a lengthy period of low productivity.¹ The most oft used measure of productivity, labor force productivity, has been low since the internet boom of the early 2000s ended.

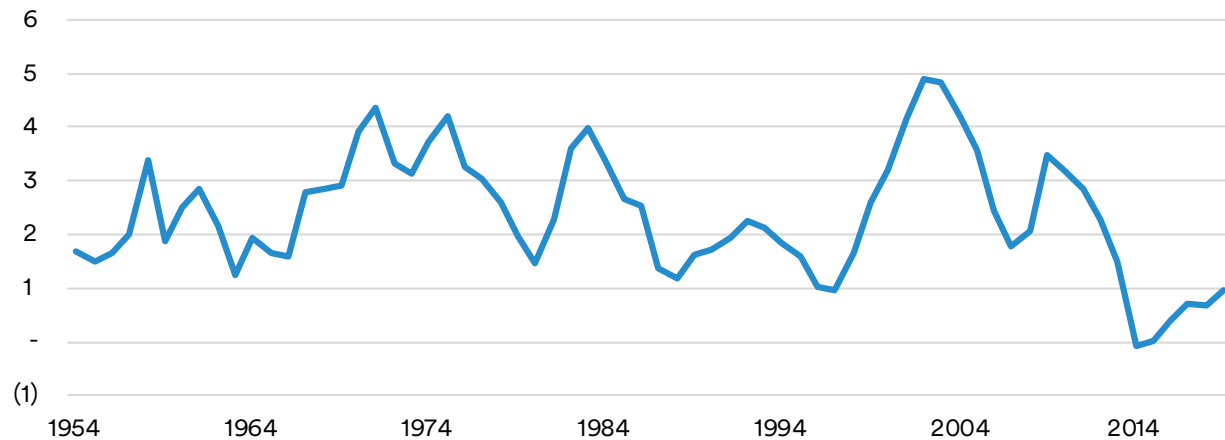
Figure 1 | The Decline in Capital Deepening



Source: BLS, MIM

The decline after the dot-com boom was exacerbated by the Global Financial Crisis (GFC) and the subsequent failure of the economy to recover. Despite a small uptick in the last two years, labor productivity remains painfully low.

Figure 2 | Capital Deepening YoY % Change 5 Year Moving Average



Source: BLS

Total factor productivity (TFP), a broader measure of productivity that is measured as total output divided by all factors of inputs (capital, labor, energy, materials and services), is effectively technological innovation. TFP improves by improving processes, training a current worker, or installing newer technology. Despite the substantial technological advancement that has taken place, innovation adoption into the real economy has been weak.

A common measure of capital output, capital deepening, has also been weak. Capital deepening is the growth in capital each worker has available to work with. This measure has declined since 2008.² Some of this may be due to price decreases in technology products (which makes the measurement appear low), and the shift to a services-based economy from capital intensive manufacturing activity. But the sharp decline since the GFC also points to a lack of investment.

Only in the past few years have green shoots of productivity improvement started to appear. The recovery after the GFC was particularly weak and may have been because it was a financial crisis rather than a more typical recession. The zero lower bound on rates and the distortionary investment decisions this produced, as well as lack of fiscal support and the deleveraging of consumers as they worked to safeguard their balance sheets, led to a deep and long-lasting decline in investment.³

Although this COVID-19 recession has begun in a distinctive way, it may have a more typical recovery. More than that, the eventual recovery has the potential to be not just more normal but accelerated.

Hope after the pandemic

The current recession has so far been sharper and deeper than even the GFC.⁴ But, unlike the GFC, the origin and evolution of the pandemic recession was relatively concrete. Many of the problems in this recession—creating safe working and shopping conditions, the supply chain fragility, digitization—can be relatively easily understood and addressed by individuals across a broad range of activities. This has provided fertile ground for invention and innovation. Some of the more complex problems—particularly COVID-19 treatment and prevention—are seeing an enormous inflow of resources. Finally, the pandemic is forcing a rethink of the status quo and business as usual. All of this could provide a conducive environment for both innovative and innovation adoption.

It's unclear how much this will translate into an economic-wide transformation, but there is great potential for some positive to come out of this difficult time.

A Collection of Examples

The plural of anecdotes is not data; still, there are numerous examples that help bring the point home about the sheer volume of inventiveness that has developed alongside the global pandemic response.

Digitization: Nearly all parts of the economy have had to speed up adoption of digital-only processes. Hard data on increased technology expenditures during the shutdown are not yet available, but the adoption of technology has been accelerated, perhaps by as much as two years.⁵ Even if many activities eventually revert back to in-person experiences, large parts of the economy have been modernized.

Examples:

- Accelerating the rural dissemination of high-speed internet.^{6,7}
- Accelerating cloud adoption; widespread dissemination of video collaboration tools, network security, and identity and access management.^{8,9}

Artificial Intelligence (AI): AI has been instrumental in analyzing the vast quantities of data that are being produced in the fight against COVID-19.¹⁰ More broadly, increased digitization implies more data is available, and should further enable the use of AI.

- Projected spending in healthcare AI may rise to \$6.6 billion by 2021.¹¹
- Artificial intelligence (AI) models are learning about rare events by feeding in experiences during the pandemic and our response to them.¹²
- Medical research is being conducted without violating data privacy.¹³

Healthcare and medical innovation: Obviously the medical field is receiving a large infusion of investment and support. Beyond the investments directly related to COVID-19 vaccine development, other innovations are taking place including the rapid development of telemedicine.¹⁴

Examples:

- Risk-mitigation technologies, such as robots in China used to interact with infected materials and people (e.g. delivering medicines, dealing with hospital garbage).¹⁵
- Investments by health agencies to track self-isolations.¹⁶
- “Fast and frugal” healthcare inventions.¹⁷

Automation is already proving itself to be increasingly important. A key bottleneck to reopening is the density of people in work environments, whether factory floors or office buildings. Automation of specific tasks can reduce workforce density. Even in a world where we are no longer vulnerable to COVID-19 automation is likely to remain important, since this accelerates what has been an underlying trend.

- Contactless technology reduces person-to-person interactions.^{18,19}
- Factory work may move onshore, requiring automation to complement relatively more expensive labor.²⁰

Re-examining the status quo. Finally, there has been the disruption of quite literally business as usual. Conventions such as a daily commute and in-person business meetings are likely to be reconsidered, even as we expect people to eventually resume many of their pre-pandemic habits. Re-examining the way things have been done could have positive productivity improvements as scarce resources – such as consumers’ and employees’ time—are reallocated. Innovation may see a particularly fertile period in an era of disruption; if there is no clear status quo, a wider range of changes may be palatable.

Example:

- Consumer may look for a different shopping experience going forward.²¹
- Reduced stigma of remote work also puts into question how much business travel is required.²²
- Reduced focus of efficient global supply chains, and greater focus on resilient supply chains.²³

What else is needed

More than a whirl of innovation is needed to produce a productivity boom. Capital investment needs to increase to support the dissemination of technological improvements through the economy.

In prior innovation periods, the government has played an important role in accelerating innovation.²⁴ This may happen less this time around, as there may be less political will and less trust in government now than during the Cold War and World War II.²⁵

Interest rates remain very low. This is a problem for capital allocation, with poorly performing companies managing to stay in business by beating the current very low hurdle rates. Without higher interest rates, capital may not be properly channeled to its best use, and recent innovations may struggle for funding.

The mostly unrelated but contemporaneous U.S. decoupling from China may provide some support. The U.S. appears to be considering industrial policies, including providing funding for 5G development in order to reduce reliance on Chinese technology.²⁶ If properly managed, this could provide a favorable investment climate with longer-term productivity benefits.

Finally, human psychology will play a role following the pandemic. After the GFC, U.S. consumers responded by becoming more reluctant to carry debt. The deleveraging was a significant drag on recovery.²⁷ How will consumers – and firms – react in a post-pandemic world? Will they grow even more cautious and try to save even more, or will they become more hedonistic or more entrepreneurial, trusting institutions less and their own ingenuity more?

Conditions may be right for a reinvigorated focus on risk taking, but many things need to fall into place.

Endnotes

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Author



TANI FUKUI

Global Economic & Market Strategy

Tani Fukui is an Economist and Associate Director for the Market Strategy and Research Group. Her responsibilities include assessing and communicating economic conditions and overseeing coordination of the global economic view. Prior to joining MetLife in 2015, Tani was an economist at the U.S. International Trade Commission, an independent Federal agency. Tani holds a B.S. in Finance from the Wharton School at the University of Pennsylvania, an M.A. in International Affairs from Columbia University and a Ph.D. in International and Macroeconomics from UCLA.

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