

INVESTMENT STRATEGY UPDATE

Provided by the BTR Team

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Productivity – An Important Source of Growth

Whether and when the U.S. economy will go into recession is one of the biggest questions we face as stock and bond market participants. Economic growth ultimately drives investment returns and there are multiple factors that determine economic growth. One of the most important factors is the productivity of the labor force, that is, the economic output per hour worked. Its importance lies in the fact that without it, the economy may grow, but the quality of life of the populace doesn't necessarily improve. Productivity is what increases profits without triggering unreasonable inflation and allows for more leisure time. Having witnessed the Federal Reserve struggle with a bout of inflation and now shift its focus to job growth and the risk of recession, we felt this Investment Strategy Update was a good opportunity to look into where our economy stands from a productivity standpoint.

Population Growth

We have written in the past about the importance of demographics to the long-term health of the stock market. Population growth leads to labor force growth, which leads to economic growth that is, of course, good for stocks. Like most developed nations, the U.S. is aging and has a fertility rate that is too low to replace our population internally. Fertility first dropped below replacement level in 1972, and it stayed under for 17 years through 1989. Then in 2009, it dropped below that level again and is now at a new lowⁱ. Fortunately, we have something not all countries have: strong immigration, which has increased dramatically in the past four years.

Since 2021, immigration has resulted in more than 9 million new U.S. residents, bringing population growth to levels not seen since the early 1990s. More people means more workers, and that's a good thing, but the recent immigrants have a positive impact in other ways. First, they tend to be younger than those born here as well as, obviously, more willing to relocate for work. Second, they are what economists call "self-selected risk takers," which may imply some entrepreneurial bent. Third, they have a higher labor force participation rate than the native population. Interestingly, they also represent both extremes of the educational spectrum, with a higher incidence of college graduates as well as a larger number without high school degrees. However, less than a third are deemed lawful permanent residents.ⁱⁱ

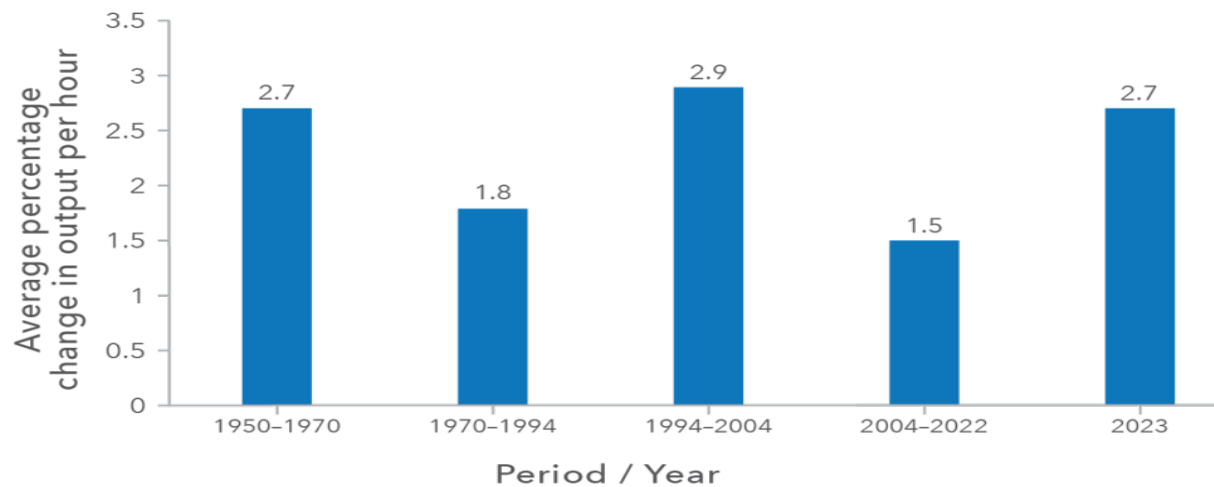
Meaningful Growth

While population growth is a good base, it doesn't necessarily lead to real economic growth. An ever-increasing population using ever-more resources is ultimately not sustainable. To be meaningful, growth must also come with an improvement in aggregate well-being of some kind. Life gets better when economic growth creates wealth that allows people to live longer and healthier lives, to work in a highly specialized field, or allows them to afford technologies that improve their physical environment. To this end, productivity is significant.

Labor productivity is comprised of several factors. The first is labor composition, which reflects changes in the overall skill level of the workforce. There are plenty of ways for a worker to become more productive. Even without external inputs, almost everyone becomes more productive in their job over time, as they get over the learning curve and figure out how to be efficient with their time, or even come up with a new way of

approaching their jobs. Increasing one's educational level can also help. The second is capital intensity, which reflects the relative utilization and cost of capital versus labor. New tools, whether a nail gun that replaces a hammer or a software program that replaces paper, add to the effect. Third, there is multi-factor productivity, which is "everything else," an essentially unmeasurable catch-all category that represents changes in technology, production processes, managerial approaches, etc.ⁱⁱⁱ

Of course, labor productivity has varied over time. While the chart below presents productivity growth data a little differently than the Bureau of Labor Statistics itself, it clearly shows multiple waves during the postwar period, for which the average is 2.1%.



Source: Luke Pardue, Aspen Institute, based on Bureau of Labor Statistics data.

What's interesting about this chart is that the figure for 2023 suggests there is some hope for a new wave just beginning.

Are We Getting More Productive Again?

Before we can assess whether we are starting a new wave of productivity, it's useful to have some understanding of what caused the previous waves. After all, lower productivity growth means less overall output, and for the 19 years ending in 2022, productivity has trailed not only the historical average, but even the weak wave of the 1970s and 1980s.

Some of the greatest growth in multifactor productivity was seen in the 1920s and, perhaps surprisingly, in the 1930s. The explanation seems to be that these periods, economically volatile though they were, were continuing to benefit from the ongoing effects of four technologies of the late 19th and early 20th centuries: electricity, internal combustion engines, chemicals, and telecommunications.^{iv} Such "transversal" technologies are so important they impact deeply many industries for an extended period. In fact, the influence of these four carried through to the period of strong growth following World War II.

This begs a critical question. Has our economy actually produced any innovations that could drive that kind of productivity growth again? Most people would point to the growth of the late 1990s and early 2000s, presumably a result of the computing revolution, and say yes. Some academics, however, do not believe it, suggesting instead that the 10-year period was a fortunate but impermanent interlude in an ongoing productivity slide that will last a long time. For example, there has been plenty of technological innovation since the early 2000s, but most people would not argue that social media, for example, is a productivity enhancer. While we acknowledge that transversal technologies are rare, we

don't believe we have to look back to the early 20th century to find them. A lot of factors have to come together for a transversal technology to take hold, but a key element is enterprising people looking for a way to improve lives and get ahead.

Ironically, the Covid pandemic may well have been the trigger of a reawakened entrepreneurialism. We may tend to look at the period 2020-2021 as one of extreme risk aversion: the government in many states essentially shut down the economy in an attempt to slow the spread of Covid. Many businesses closed at least temporarily, with "exits" for the whole year 20% higher than in the pre-Covid period. However, within months, new businesses sprang up, in part to address the needs of a new way of life under lockdown. The net result has been more total businesses than before Covid.^v The Census Bureau's chart of new business applications shows an obvious step-function increase in 2020 that has not let up since. While we could attribute some of the willingness to take a chance on opening a business to the massive stimulus provided by the Fed's zero interest rate policy and support provided by the federal government, in our view it argues that the entrepreneurial spirit in America is alive and well.

That's a great sign for the long term. While the businesses started were naturally small, every big business started that way. More importantly, the evidence seems to suggest that these new businesses are more efficient. A recent analysis by the *Wall Street Journal* found that new business owners are finding it easier to operate with a smaller permanent staff, supplemented with contractors in far-flung locations, even outside the U.S. Remote work, along with communications and collaboration technology, allow for this.^{vi}

Investment Implications

Aside from the burst of entrepreneurship the pandemic seems to have triggered, we could also be seeing an increase in productivity growth that hearkens back to the major waves of the post-war period and the 1990s. It's too early to tell, but 2023 was a good start. According to the Bureau of Labor Statistics, productivity growth was low in the first quarter of 2024 but bounced back up over 2.2% in the second quarter. The stakes are high. McKinsey believes that maintaining average productivity of 2.2% from 2023 through 2030 will add \$10T to aggregate GDP.^{vii} As long-term investors, we need to assess whether there is a chance of this nascent trend continuing. To a large degree, we believe that means deciding whether new technologies or methodologies that have recently been put into play will ultimately result in hoped-for benefits.

We believe that semiconductors, software, and the computing revolution of the later 20th century, together qualify as a transversal technology. It has led to extremely impactful innovations, including the Internet, big data, and cloud computing. Artificial Intelligence ("AI") could well be the next phase, if not a transversal technology in its own right. The greatest driver of stock market returns in the past two years has been the AI investment cycle, which can largely be summarized as follows: four hyperscale cloud computing companies invest tens of billions of dollars each in the training of large language AI models that will, eventually, hopefully, mimic or even exceed human intelligence.

Much of that money has been going to semiconductors that run specialized computers in massive data centers. None of this is to suggest we intend to invest heavily in AI-related chip manufacturers. The point is that transversal technologies can impact many industries. All of those AI-related servers, for example, consume unbelievable amounts of energy, which may in part explain the fact that utilities are the best performing sector this year. The question is whether all of this activity is truly productive and profitable. Some companies are clearly benefiting from the trend, but not necessarily the ones that are doing the investing in all those chips.

Stepping back from the long-term promise of AI, there are ways in which AI is already improving productivity. One area of focus is call centers. A study of call center agents found that use of an AI-based assistant helped them resolve 14% more customer issues per hour on average, and 34% more for newer, less-experienced employees.^{viii} That's a fine start, but so far only around 4% of companies are utilizing such technology.^{ix} Another area of focus is using coding "copilots" to help software engineers be more productive.

In the Health Care sector, insurers can and are using AI to analyze their patient data in an attempt to improve health outcomes. Biopharma companies are hoping AI can speed up the drug discovery process. Most banks have already done their best to replace tellers with ATMs and websites, but one large bank has hired a thousand people to work on AI-driven financial applications. Even in the construction industry, long an area of negative productivity growth, AI is being implemented to estimate the cost of new projects and find issues in construction plans.^x

Productivity improvement through adoption of new technologies is not a smooth or painless process. Payoff may come only after a long period of investment and some attempts at increasing productivity may ultimately fail. We believe the jury is out on the value of self-checkout at retail establishments. Furthermore, the short-term impact on workers can be painful. Those who keep their jobs may find the new technology disruptive. Those who lose their jobs certainly will. In fact, the irony of the current employment situation is that unemployment for IT workers themselves is 6%, well above the average of all workers and up from 5.6% in July.^{xi}

Conclusion

Like demographics, productivity trends are measured in decades, not months or even years. Innovations that are truly groundbreaking can still influence productivity long after their introduction. So, we don't look for an immediate connection between productivity numbers and stock market performance^{xii}. This Update is an attempt to better understand an important element of long-term economic growth and, more to the point, prosperity. One element of recent GDP growth that concerns us is that so many of the jobs created in the past year have been in government and social work, as well as health care, a private sector with historically poor productivity growth^{xiii}. On balance, though, we believe entrepreneurialism and a culture of innovation will ultimately lead us to better times, and for that reason, we're still happy to be investing in America.

This information is not intended as a recommendation. The opinions are subject to change at any time and no forecasts can be guaranteed. Investment decisions should always be made based on an investor's specific circumstances.

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- ⁱ St. Louis Fed, based on World Bank data.
- ⁱⁱ Paul Kiernan, Wall Street Journal, “How Immigration Remade the U.S. Labor Force.” September 4, 2024.
- ⁱⁱⁱ Bureau of Labor Statistics, “Monthly Labor Review.” April 2021.
- ^{iv} Robert Shackleton, Congressional Budget Office, “Total Factor Productivity Growth in Historical Perspective.” March 2013.
- ^v Ryan A. Decker and John Haltiwanger, “Business entry and exit in the COVID-19 pandemic: A preliminary look at official data.” May 6, 2022
- ^{vi} Ruth Simon, Wall Street Journal, “Rise of the Pint-Size Startup Is Reshaping the U.S. Economy.” September 3, 2024.
- ^{vii} Atkins, White, et al, McKinsey Global Institute, “Rekindling US Productivity for a New Era.” February 2023.
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- ^x Christopher Mims, Wall Street Journal, “What is AI Best at Now? Improving Products You Already Own.” September 13, 2024.
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- ^{xii} CXO Advisory Group, study of labor productivity v. S&P 500 returns, 1950-2019. July 1, 2019.
- ^{xiii} Wall Street Journal Editorial Board, “Job Growth Slows, Stocks Slump”. September 7, 2024.