

# Economics Group

## Special Commentary

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# Productivity: Back from the Dead or Dead Cat Bounce?

## Executive Summary

Slow productivity growth has weighed on the pace of GDP and real income this expansion. Boosting productivity growth therefore has become a focal point for policymakers. One of the Trump administration’s primary goals of its Tax Cuts and Jobs Act and deregulatory agenda has been to boost capital investment in an effort to increase productivity growth.<sup>1</sup>

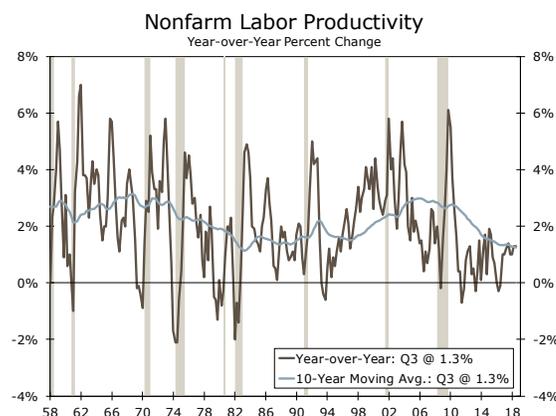
After stalling during the middle of the decade, productivity growth has rebounded back above 1% amid stronger capital investment. Yet even with the recent pickup, productivity growth is little different than its average over the past decade and notably weaker than the late-1990s and early-2000s (Figure 1). Could late-cycle dynamics, including the tight state of the labor market, spur faster productivity growth, however?

Productivity growth will likely remain around 1% this year as both capital investment and aggregate hours worked—the labor input into production—decelerate. The amount of new technology and efficiency filtering into production, known as total factor productivity (TFP), however, remains a wild card for the productivity outlook. TFP is usually thought to be independent of the business cycle. Yet, if the tight labor market supports efforts to develop better technology, productivity growth could end up on a stronger path not just through the remainder of the current business cycle, but on into the next cycle.

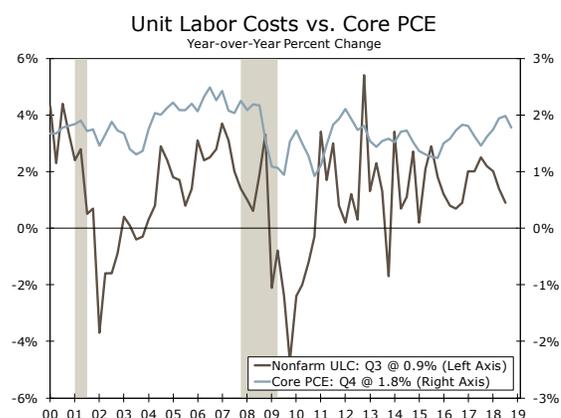
**Productivity growth will likely remain around 1% this year.**

The modest rebound in productivity growth since 2016 has kept inflationary pressures muted even as labor costs have risen more rapidly (Figure 2). At the same time, stronger productivity growth has mitigated pressure on corporate profits. Without further improvement in productivity growth, however, downward pressures on corporate profits and upward pressures on inflation are expected to mount if wages continue to accelerate.

**Figure 1**



**Figure 2**



Source: U. S. Department of Commerce, U.S. Department of Labor and Wells Fargo Securities

<sup>1</sup> “Economic Report of the President,” February 2018.



**Low productivity growth is a challenge for GDP growth and living standards.**

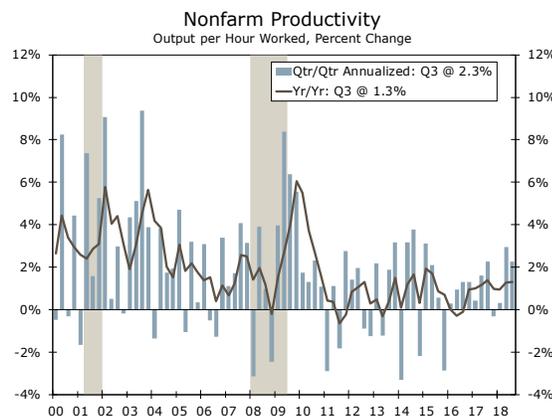
**Productivity Growth Has Rebounded**

Dismal productivity growth has been one of the defining characteristics of the current economic expansion. Since 2011, nonfarm labor productivity has increased at an average pace of 0.7% per annum, compared to an average of 2.3% over the post-World War II period.<sup>2</sup> That’s a challenge to real per capita income, i.e. living standards. According to economic theory, workers are paid the marginal product of their labor. Therefore, as productivity increases, so does real pay (assuming the share of income flowing to labor is unchanged). Low productivity growth is also a challenge for the long-run rate of U.S. GDP growth; the slower productivity grows, the slower the economy grows for a given amount of inputs.

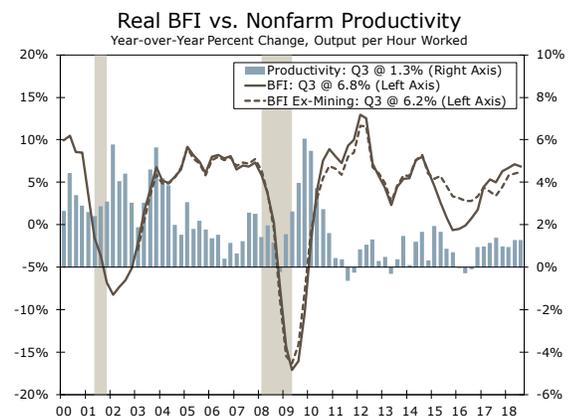
Output per hour worked, or labor productivity, is the simplest way to measure productivity. By this measure, productivity is based on the amount of capital utilized, the quality of workers and how well capital and labor are combined. What cannot be explained by the amount of capital or the skill level of labor is known as total factor productivity (TFP), and represents technology and other intangible factors like process improvements.

Productivity growth has improved recently. After stalling in 2016, labor productivity was up 1.3% in Q3 compared to the same quarter a year earlier (Figure 3). The pickup coincides with a rebound in investment spending (Figure 4). As commodity prices and the global economy regained their footing after the 2015-2016 slowdown, spending in the capital-intensive energy and manufacturing industries bounced back.

**Figure 3**



**Figure 4**



**Source: U.S. Department of Commerce, U.S. Department of Labor and Wells Fargo Securities**

The broader economic environment has generally been supportive of capital spending as well; interest rates have kept borrowing costs low and business confidence has been elevated. Corporate profits have also soared to all-time highs, amid stronger economic growth and changes to the corporate tax code earlier this year, which generated more after-tax cash for corporations. While the jury is still out as to what extent the fiscal stimulus from the 2017 Tax Cuts and Jobs Act is behind the recent pickup in investment, labor productivity growth has certainly experienced a lift.

**Can the Productivity Rebound Last?**

While capex has helped boost recent readings on productivity growth, the latest figures only put productivity back in line with the current cycle’s anemic trend (refer back to Figure 3). Looking ahead, a meaningful break from the current trend in productivity growth is not immediately apparent.

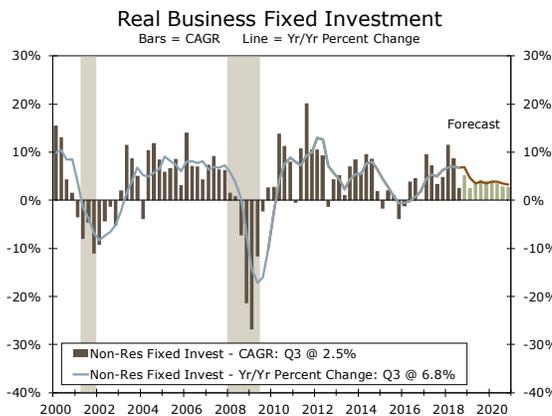
For starters, capital spending looks set to slow in 2019. After growing 7% in 2018 by our estimates, we expect business fixed investment to increase only 4% in 2019 (Figure 5). Core capital goods

<sup>2</sup> Since productivity receives a cyclical boost coming out of a recession, as output rebounds yet businesses remain reluctant to hire, we calculate productivity growth for the cycle beginning in 2011, the first full year hiring expanded.

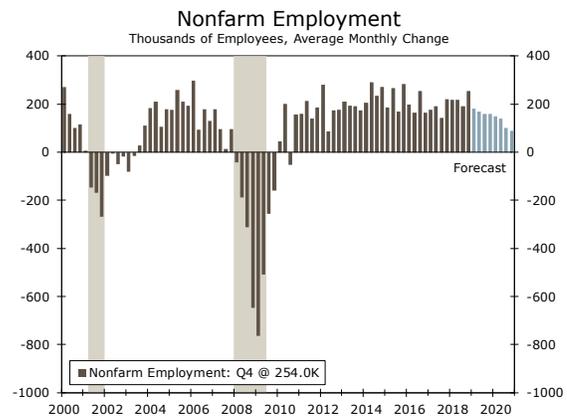
**A meaningful break from the current trend in productivity growth is not immediately apparent.**

shipments data have fallen in three out of the past four months, presaging some softness in equipment spending. While we have drawn attention to the gap between hard and soft measures of business spending throughout this cycle, more recent survey data indicate that the sturdy anecdotal evidence appears to be retreating. The ISM manufacturing index descended in December from the euphoric levels over the past couple of years. Continued trade uncertainty and increased concern surrounding slower economic growth appear to be weighing on manufacturers, as regional PMI readings also gave up ground in December.

**Figure 5**



**Figure 6**



***The slowdown in capex represents a headwind to productivity growth.***

**Source: U.S. Department of Commerce, U.S. Department of Labor and Wells Fargo Securities**

Gauges on capital spending plans have come down, including the share of small businesses expecting to increase capital spending falling to a two-year low. Not only have spending plans come down, but credit conditions have tightened, as indicated by wider corporate bond spreads. Given that the capital workers have at their disposal is a key determinant of productivity, the slowdown in capex represents a headwind to productivity growth.

While capital spending is poised to slow in 2019, so is the key labor component of productivity growth—aggregate hours worked. Employers report a near-record rate of job openings and that finding qualified labor is their single largest challenge. Wages and training opportunities are rising in response, pulling more workers back into the labor market. But the labor force has been growing by roughly 140,000 workers per month, meaning talent is becoming increasingly scarce. We expect hiring to fall back below 200,000 jobs per month in 2019, as employers struggle more to find workers, and slower growth more broadly lessens the need to hire (Figure 6). That should keep productivity growth running a touch above 1% in 2019, assuming employees work the same number of hours per week.

**Late-Cycle Considerations for Productivity Growth**

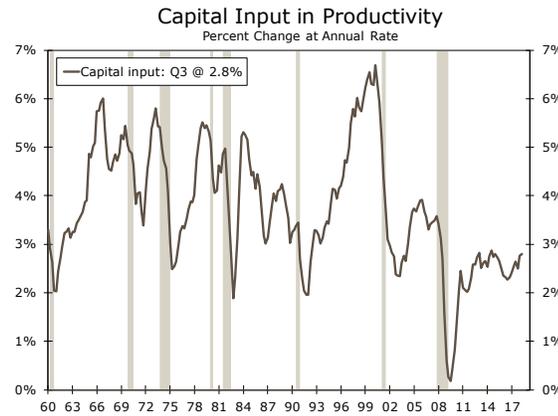
Could late-cycle dynamics, including the tight state of the labor market, spur faster productivity growth, however? With wages rising and firms facing difficulty finding workers, investment in labor-saving technology looks increasingly attractive. Late in the economic cycle, the capital contribution to labor productivity tends to rise as firms begin to rely relatively less on workers and step up investment (Figure 7).

Additional machines and software may help firms through a labor crunch, but that is likely to help productivity growth only so much. After all, firms still need workers to run the equipment and software, generating diminishing returns to new investment. However, if firms are investing in *better*, not just *more*, machines or programs, productivity would rise more meaningfully. This implies an increase in TFP.

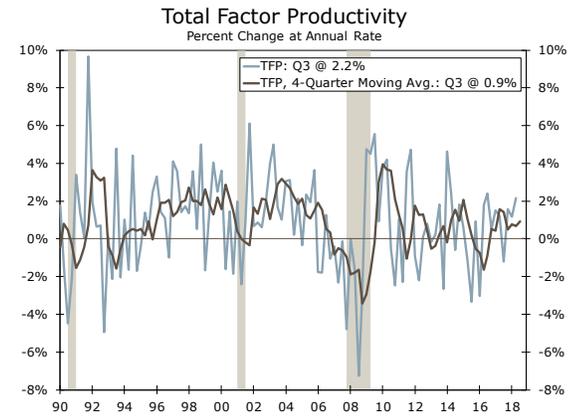
TFP has picked up since the middle part of the decade, but, like labor productivity, remains within its lackluster realm of this expansion (Figure 8). New technology is typically considered to be a supply-driven factor in output, independent of the business cycle. Yet, there is a debate about the

role of demand in driving new, productivity-enhancing technology. When labor is relatively cheap, as it has been through most of the current cycle, firms may view the financial risks associated with developing new technology as unnecessary. Yet, if labor availability and costs are becoming particularly vexing issues, it could encourage businesses to devote more resources toward research and development and help speed any subsequent breakthroughs along.<sup>3</sup>

**Figure 7**



**Figure 8**



**Source: Fernald 2014<sup>4</sup> and Wells Fargo Securities**

***The diffusion of new technology into everyday commerce can take decades.***

There is plenty of debate about the outlook for another technological boom along the lines of the 1950s–1960s and mid-1990s–mid-2000s. While some argue that emerging technologies are likely to be less revolutionary than prior breakthroughs like electricity and the internet, others believe that big data, artificial intelligence and robotics are about to usher in another surge in productivity.<sup>5</sup> When such technology is likely to have a broad effect on output is another question, however. The diffusion of new technology into everyday commerce can take decades. Nobel Prize winning economist Robert Solow famously observed in 1987 that “You can see the computer age everywhere but in the productivity statistics.” It was another decade until the computer age ushered in another productivity boom, or at least until the data-measurement tools observed it.

While the next big invention may be some time away, there are indications that productivity may be benefiting in smaller ways from the aging business cycle. The tight state of the labor market might be burdening businesses through a shortage of qualified labor, but it is an advantage to workers. Employees are increasingly confident with their job prospects and are pursuing different positions, as evidenced by the high quit rate (Figure 9). The reallocation of labor via increased job turnover is supportive of productivity gains.

Business dynamism, or the creation and destruction of firms, is also believed to contribute to productivity growth and reflect a healthy economy. Firm turnover results in capital being better allocated to more productive firms. When less efficient firms exit a market, the productivity average across existing firms will experience some lift. The creation of new firms may also benefit productivity, either by bringing new and innovative ideas to the market, or by pressuring existing firms to innovate more.<sup>6</sup> The rate of establishment destructions has been anemic this cycle, which may be an unintended byproduct of ultra-low interest rates providing cheap credit for weaker firms.

<sup>3</sup> Allen, Robert C. (2009). *The British Industrial Revolution in Global Perspective*. Cambridge, Cambridge University Press.

<sup>4</sup> Fernald, John G. "A Quarterly, Utilization-Adjusted Series on Total Factor Productivity." FRBSF Working Paper 2012-19 (updated March 2014).

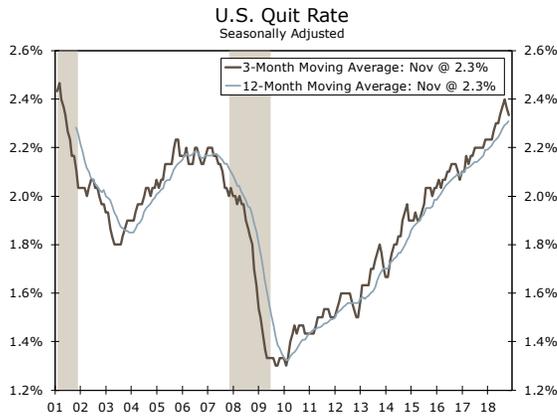
<sup>5</sup> Gordon, Robert. (2014). "The Demise of U.S. Economic Growth: Restatement, Rebuttal, and Reflections" National Bureau of Economic Research Working Paper #19895

<sup>6</sup> Cowen, Tyler. (2011). *The Great Stagnation: How America Ate All the Low-Hanging Fruit, Got Sick, and Will (Eventually) Feel Better*. New York, Dutton.

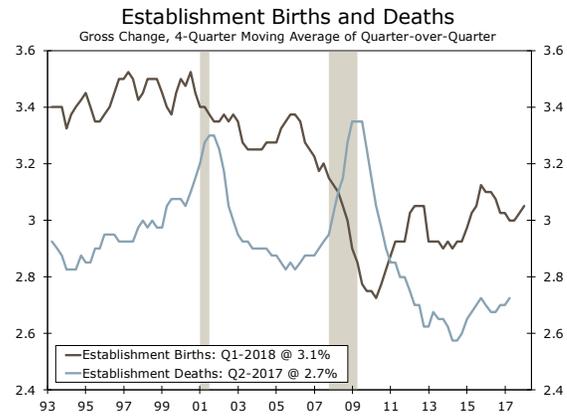
<sup>6</sup> Li, Huiyu, "How Does Business Dynamism Link to Productivity Growth?" Federal Reserve Bank of San Francisco (January 9, 2017).

But establishment “deaths” have slowly inched higher as the Fed has raised rates, while establishment “births” have also trended higher (Figure 10).<sup>7</sup>

**Figure 9**



**Figure 10**



Source: U.S. Department of Labor and Wells Fargo Securities

**What’s a Monetary Policymaker to Do?**

The uncertain and lagged effect in which new technology generates prolonged periods of stronger productivity growth puts monetary policymakers in a tricky position. Productivity growth mitigates the impact of rising labor costs on inflation and corporate profits, limiting the need for the Fed to head off inflation or contend with weaker hiring as profits decline. In 1996, as productivity statistics were still not showing a clear acceleration, Fed Chairman Alan Greenspan thought that the United States was on the precipice of a productivity boom.<sup>8</sup> Despite unemployment falling, wages strengthening and core inflation around 2.5%, the FOMC did not raise rates until the spring of 1997. If the economy is on the precipice of a similar technology boom today as some argue, the FOMC could afford to be similarly patient and potentially facilitate another era of strong productivity growth by not tightening policy excessively. If a significant diffusion of new technology into the economy is not imminent, however, such a bet could stoke inflation and a rapid erosion in corporate profits.

***Productivity growth mitigates the impact of rising labor costs on inflation and corporate profits.***

For now, inflationary pressures look to remain in check, thanks in no small part to the rebound in productivity growth. Unit labor costs have slowed recently and remain well within the past decade’s range despite average hourly earnings rising at the fastest pace of the expansion (refer back to Figure 2 on page 1). Corporate profits are also getting some insulation from the pickup in productivity growth. Despite slowing sales and faster growth in labor costs, we see economy-wide profits edging a bit higher this year. Without a meaningful improvement in productivity growth, however, downward pressures on corporate profits and upward pressures on inflation are expected to mount if wages continue to accelerate.

<sup>7</sup> Data on business “deaths” lags business “births” by one year to confirm seasonal businesses that close do not reopen the following year.

<sup>8</sup> “Technological Advances and Productivity.” Remarks by Chairman Alan Greenspan at the 80<sup>th</sup> Anniversary of the Conference Board in New York, New York. October 16, 1996.

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