Strategy Quarterly

Third Quarter 2017

Executive Summary

- GDP growth is projected to average about 1.9% over the next 10 years – quite below the historical average of 3.2%, registered over the 1950-2015 period. Both labor force and productivity have been declining over time and are expected to be lower in the future.
- The investment implications of a lower long-term growth are difficult to estimate. Over the short- to intermediate-term, cyclical considerations drive investment performance of various asset classes and of sectors within the equity market.
- Perhaps the recent dramatic outperformance of growth stocks over value stocks may reflect an economic environment less favorable to value investing. Generally, these types of companies need a positive economic environment to turn around and compensate investors for the risk they are taking ("value premium"). If economic growth is anemic, it is less likely that value stocks will generate excess returns.
- Our analysis of the business cycle confirms we are still in the expansion phase. The bond-yield spread model indicates a very low probability of recession in the near future. Given our expectations of a resilient economic expansion, a benign inflationary environment and a still accommodative monetary policy, we maintain a constructive view of the equity markets. The major risk we see is current stretched valuations making the market vulnerable to any earnings slowdown. In addition, recent significant dispersion of returns across sectors and styles could suddenly reverse and whipsaw investors chasing high-momentum sectors.
- Alpha Quant Advisors offers an array of equity strategies with different sensitivity to economic conditions and appropriate for distinct risk profiles. Each strategy is driven by a distinct set of alpha-factors: fundamentals and valuation metrics demonstrating a consistent ability to predict excess returns.

AlphaQuant
Engineered for Alpha

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Economic Outlook

Over the next decade, the Congressional Budget Office ("CBO") expects economic growth to slow relative to the pace of the past few decades. Figure 1 reports the historical and projected values of the real GDP growth and its two main drivers: labor force and productivity. According to the CBO, GDP growth will average about 1.9% over the next 10 years – quite below the historical average of 3.2% registered over the 1950-2015 period. The table shows that both labor force and productivity have been declining over time and are projected to be

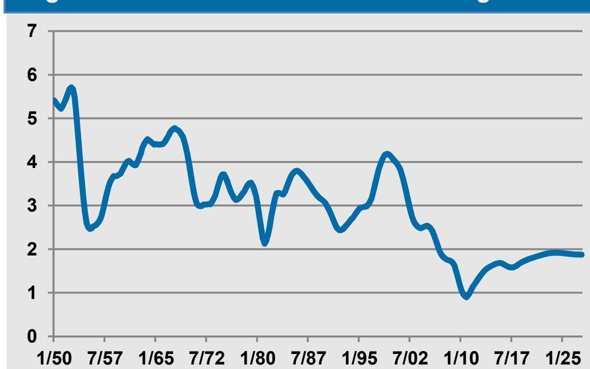
Figure 1: Components of Real GDP Growth

	1950-1973	1974-1981	1982-1990	1991-2001	2002-2015	Projection 2016-2026
Potential Output	4.0	3.2	3.2	3.3	1.9	1.9
Potential Labor Force	1.6	2.5	1.6	1.3	0.7	0.5
Potential Labor Productivity	2.4	0.7	1.5	2.0	1.2	1.4

Source: Congressional Budget Office

lower in the future. Demographics have grown less favorable for growth and could contribute to slower economic growth. In the U.S. and in many advanced economies, aging populations will generally lead to lower labor-force participation rates, adding to the demographic challenge of weaker growth in working-age populations. While the importance of productivity to future economic growth is rising, productivity growth has been on a declining trend across a broad range of economies, including most advanced economies and, more recently, many major emerging economies as well.

Figure 2: Real GDP Percent Y/Y % Change



Source: Federal Reserve, CBO

Of course, productivity is much more difficult to forecast than labor-force growth. This is due to the fact that productivity is mainly driven by innovation and technological change. Looking ahead, some questions are: What are the prospects for productivity growth? Is the recent productivity slowdown largely cyclical? Or is it more structural in nature and likely to persist?

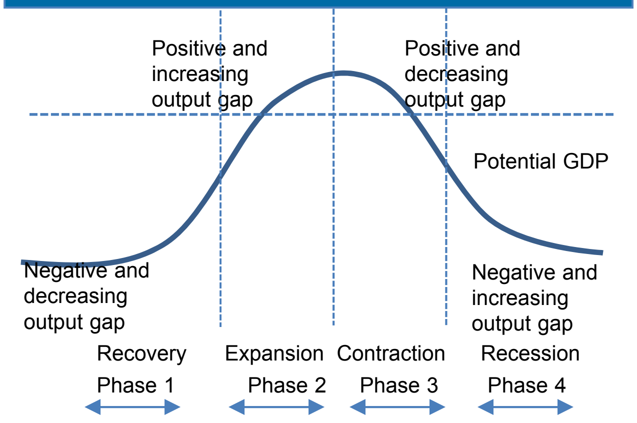
According to Fidelity Investment research, while complex and more difficult to predict, productivity is poised to help drive GDP growth in the coming decades. First, human capital – educational and scientific achievements are key drivers of future innovation and adoption of new technologies, and should help to power growth. Second, complex economies like the U.S. tend to be more competitive, use technology more effectively, and have better business climates and more business-nurturing institutions. As a result, higher complexity typically means higher productivity. Third, there is potential for "catch-up" by less advanced economies, which should grow faster than more mature economies thanks to their ability to grow off a lower base, adopt existing technologies, and converge to the higher income levels of developed countries. In practice, however, this convergence does not occur automatically; it is conditional on other factors, such as the labor force and structure of an economy.

What are the investment implications of a lower long-term economic growth rate? Over the short- to intermediate-term, cyclical considerations drive investment performance of various asset classes and of sectors within the equity market. The impact of lower long-term economic growth on equity investing is more difficult to estimate. Perhaps a structurally low-growth environment may favor growth stocks over value stocks. Depressed market valuations usually reflect a company's weak fundamentals, increasing competition, and operational challenges. These companies may need a positive economic environment to turn around and compensate investors for the risk they are taking ("value premium"). If economic growth is anemic, it is less likely that value stocks will generate excess returns. Conversely, when economic growth is "scarce," companies that display higher growth rates of earnings may be favored by investors.

Business Cycle Analysis

Consistently with past issues of this report, our departure point for assessing the dynamics of the business cycle is the long-run sustainable real growth rate of the economy – or potential real GDP. The availability and growth of capital and labor determine the long-term potential growth rate of the economy. Thus, the output gap deviation in GDP growth from potential indicates disequilibrium within the economy and it can be either unsustainable (positive output gap is inflationary) or suboptimal (negative output gap is deflationary).

Figure 3: Stylization of Output Gap Cycle



Source: Adapted from Taylor (1998)

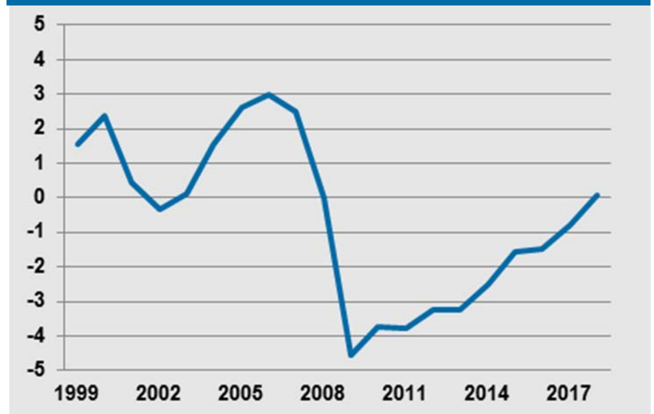
The magnitude of the output gap and its direction (increasing or decreasing) has implications for inflation, monetary policy and overall direction of the economy. The output gap's magnitude and direction also define the four phases of the economic growth cycle:

- Phase 1: Recovery
- Phase 2: Expansion
- Phase 3: Contraction
- Phase 4: Recession

Each phase is characterized by distinct trends in the corporate earnings cycle, inflation, credit cycle and monetary policy. More importantly, the four phases of the cycle affect the relative performance of various asset classes and economic sectors.

Where are we now in the cycle? We have updated the actual output gap chart (Figure 4), which shows little change from last quarter. The U.S. economy has steadily moved from its 2009 cyclical trough and is forecasted to close the gap in 2018.

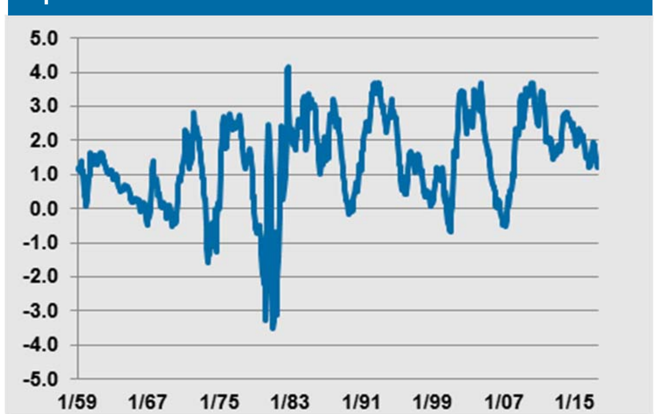
Figure 4: U.S. Output Gap



Source: OECD

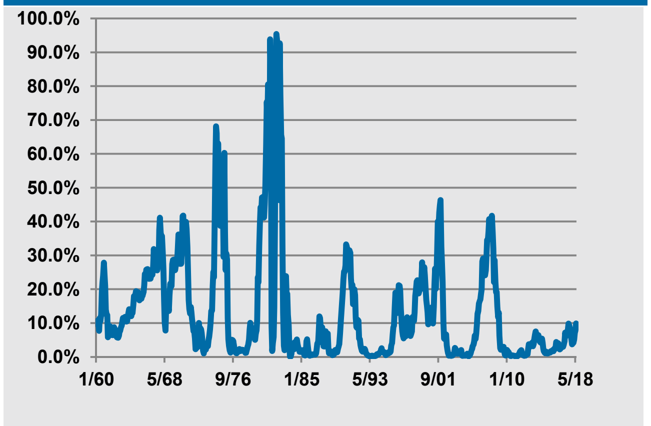
According to this framework, we are only about to complete the recovery phase – where the economy reaches a position of equilibrium. However, if the OECD is overestimating the potential GDP growth, we may have already passed that point and could be well into the expansion phase. In any cases, we believe that we are not close to the cycle peak yet and that the economy should continue to expand along its cyclical path. Our analysis is in contrast with some investors who have called in question the ability of the economy to continue to grow and even warned that a recession may be closer than currently believed. The spread between the 10-year Treasury bond and the 3-month T-bill has been historically a good predictor of recessions. While its predictive power is not infallible, the yield spread has a quite strong track record at forecasting recessions. In fact, a negative spread (implying an inverted yield curve) has anticipated the last six

Figure 5: 10-Year Treasury – 3-Month T-Bill Yield Spread



Source: Federal Reserve, New York

Figure 6: Implied Probability of Recession



Source: FED New York

recessions by few quarters. Figure 5 shows that the yield spread has been narrowing, but it is still positive at about 100 basis points. Figure 6 displays the probability of recession based on the yield spread and signals that no recession is on the horizon for now.

Other indicators do not point to an economy in danger of overheating. For example, capacity utilization – a measure of the overall slack in the economy – is at about 76% (Figure 7). In previous recessions capacity utilization surpassed 80%. This shows that companies can still increase production without adding new plants. This is one of the reasons why inflationary pressures seem to be absent still. And as long as inflation is not spiking, the Federal Reserve ("the Fed") will not be pressured to accelerate the pace of interest rate hikes.

Figure 7: Capacity Utilization

Source: Federal Reserve

Given our expectations of a resilient economic expansion, a benign inflationary environment and a still accommodative monetary policy, we maintain a constructive view of the equity markets.

Evidence of a global synchronized economic growth acceleration is a positive development; it eases the burden on the U.S. as the world's economic engine and directly supports U.S. corporations with significant exposure to international markets. The Institute for Supply Management's U.S. factory index climbed to 57.8 in June, up from 53.2 a year ago. Data also show euro-area manufacturing accelerating with the eurozone PMI at 57.4 versus 51.9 a year ago. China PMI has also improved from 49.9 to 51.7 over the same period.

The major risk we see is current stretched valuations making the market vulnerable to any earnings slowdown. In addition, recent significant dispersion of returns across sectors could suddenly reverse and whipsaw investors chasing high-momentum sectors.

Alpha Quant Strategies

Alpha Quant Advisors offers an array of equity strategies with different sensitivity to economic conditions and appropriate for distinct risk profiles.

The next page depicts the range of Alpha Quant Equity Strategies – what we call the Equity Strategy Spectrum. The strategies on the far left are built to be less sensitive to economic conditions (or "defensive"). As you move to the right, both volatility and strategies' sensitivity to market conditions increases.

Each strategy has a well-defined sector composition and is driven by a distinct set of "alpha-factors" – fundamentals and valuation metrics that have historically been associated with future excess returns.

Investors with a long-term investment horizon and an aggressive risk profile could benefit from exposure to our Cyclical Growth and Cyclical Value Equity Strategies. Risk-averse investors should stick with more conservative equity strategies such as our Dividend and Defensive Equity Strategies. For investors seeking a solid core allocation to be maintained throughout various market conditions, we believe our Core Equity strategy is appropriate.

Less Sensitive ← Equity Market Sensitivity → **More Sensitive**

Defensive Value	Defensive Growth	Dividend	Quality	Core	Value	Cyclical Growth	Cyclical Value
Focused strategy of 30 non-cyclical stocks with attractive valuations	Focused strategy of 30 non-cyclical stocks with above-average earnings momentum	Focused portfolio of 30 stocks with strong dividend persistence, broadly diversified across sectors	Focused portfolio of 30 high-quality large- to mid-cap stocks with strong profitability and lower leverage at reasonable valuations	Diversified portfolio of 50 to 60 stocks across Quality and Value strategies	Focused portfolio of 30 attractively valued large- and mid-cap stocks with high free cash flow, lower leverage and lower valuations	Focused strategy of 30 cyclical stocks with above-average earnings momentum	Focused strategy of 30 cyclical stocks with attractive valuations
Aims to outperform the market during periods of economic contraction and recession		Aims for high risk-adjusted returns by emphasizing dividend growth potential	Aims to outperform over a full market cycle	Aims for a more consistent return pattern	Aims to exploit investors' short-term biases and under-appreciation of cash flow trends	Aims to outperform the market during periods of economic recovery and expansion	
Composite Inception Date							
8/1/2013	8/1/2013	1/1/2012	1/1/2012	1/1/2012	1/1/2012	2/1/2015	2/1/2015
SmartALPHA® Index Start Date*							
7/1/2012	7/1/2012	—	—	—	—	7/1/2012	7/1/2012

Massimo Santicchia is a co-founder and chief investment officer of Alpha Quant Advisors, LLC. Mr. Santicchia develops and manages equity strategies and funds and oversees all aspects of Alpha Quant's investment process. Previously, he also served as chief investment officer of Cypress Capital Group and Cypress Trust Co. He has more than 18 years of investment experience, including at S&P Investment Advisory Services LLC as developer and portfolio manager of the four JNL/S&P funds. He also co-managed the JNL/S&P Managed and Disciplined funds. Prior positions include: consultant with the investment banking divisions of Goldman Sachs and Credit Suisse First Boston and international equity analyst at Nicholas-Applegate Capital Management. Mr. Santicchia holds a B.A. in Economics and Political Science from the University of Perugia, Italy; an MBA from the U.S. International University, San Diego; and an M.S., Investment Management, from Pace University, New York.

Important Notes

The analysis, tables and charts presented herein are based on the most recent data available as of July 2017.

Any opinions herein, including forecasts, reflect our judgment as of the reporting period and are subject to change. The Alpha Quant strategies and each client's portfolio composition will change depending on economic and market conditions. This report is not a complete analysis of market conditions and therefore, should not be relied upon as investment advice. Although information has been compiled from reliable sources, Alpha Quant Advisors, LLC makes no representation as to the completeness or accuracy of the statements contained herein.