



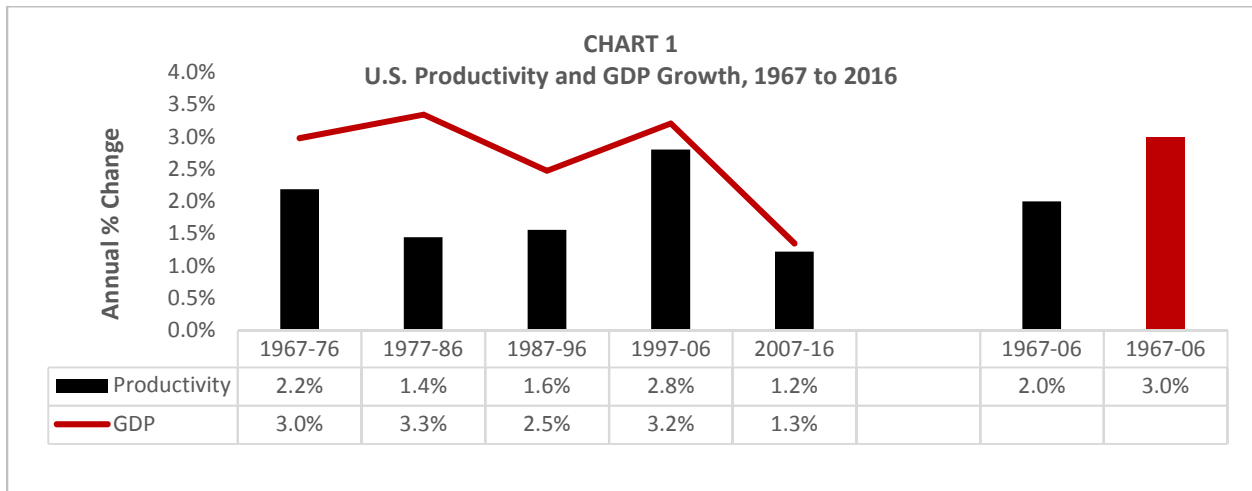
# ANALYTICS INVESTMENT ADVISORS, LLC

## Labor Productivity and GDP Growth

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### What?

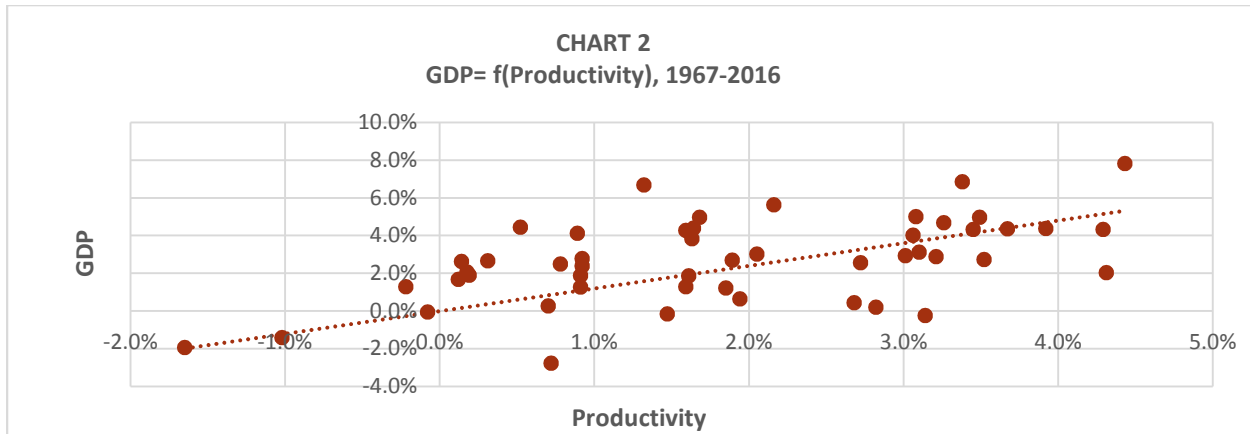
- Labor productivity is output per hour, and growth in labor productivity is the change in output per hour over time.
- Growth in labor productivity enables workers to produce more goods and services for a given number of hours worked, and has the potential to increase the standard of living in the form of higher consumption of goods and services.
- The Bureau of Labor Statistics measure of labor productivity is a principal economic indicator used to understand and analyze current and historical changes in the economy.<sup>1</sup>
- Chart 1 presents the last fifty years of productivity and GDP growth in ten year intervals. Average productivity decreased from 2.8% to 1.2% between 1997-06 and 2007-16; whereas the average GDP growth for these same time periods declined from 3.2% to 1.3%,<sup>2</sup>
- A linear regression model comparing these two variables on an annual basis over the most recent fifty years (Chart 2) indicates that: 1) for every 1% increase in productivity there was an average 1.2% increase in GDP for the U.S. economy between 1967 and 2016; 2) labor productivity growth accounts for 66.2% of the variability in GDP growth; and, 3) these two variables have a correlation coefficient of 81.4%.



U.S. Bureau of Economic Analysis

<sup>1</sup> *Beyond the Numbers*, "What Can Labor Productivity Tell Us About the U.S. Economy, May 2014, Vol 3, No, 12.

<sup>2</sup> The null hypothesis of equal means for these two variables and time series is rejected (P=.01)



### Why?

- The intrinsic relationship between productivity and GDP growth demonstrated above dictates that for GDP growth to improve there must be a significant and commensurate increase in labor productivity.
- The slowdown in labor productivity and GDP growth between 2007 and 2016 can be allotted in general to: 1) a lack of new products; 2) a reduction in quality to cost ratios; and, 3) political forces that have created non-technical barriers to market efficiency and growth.
- More specifically, a recent report by Gallup, Inc.<sup>3</sup> argues that the deterioration of large influential sectors of the economy (i.e., healthcare, education, and housing), is not inevitable, but in fact reversible by changing specific policies, rules and regulations accumulated after years of weak political leadership, by taking into account factors such as:
  1. Conventional theories that are unpersuasive and which often ignore long-term problems;
  2. Changes in living standards that are fundamentally linked to how cost and the quality of goods and services are related;
  3. The deterioration in the quality-to-cost ratio for healthcare, housing and education that are hindering economic growth;
  4. Working age labor force participation in health care services that has declined due to an increase in self-reported disability and decrease in health status for working age adults;
  5. Housing costs which required a larger share of income without a corresponding increase in the quality of housing;
  6. The cognitive performance of children and adults that have poor rates of literacy and numeracy in spite of high growth in spending; and,
  7. Increasing regulatory and administrative burdens that explain why underperforming inefficient sectors tend to attract less talented owners and employees relative to manufacturing, retail and computer services.

### How?

- The historic relationship between changes in labor productivity and GDP growth provides valuable insight into the concomitant decline of both variables between 2007 and 2016.
- The 2016 Gallup, Inc. report affords convincing rationale for the ability of new action programs to reverse unfavorable trends in productivity in underperforming industries.
- The Trump administration proposed fiscal and regulatory policies appear to suggest an awareness of the potentially favorable and immediate impact of new leadership on the U.S. economy.

<sup>3</sup> Rothwell, Jonathan “No Recovery: An Analysis of Long-Term U.S. Productivity Decline”, Gallup, Inc. 2016.

## Performance Summary

- **Cautious Strategy:** Cautious investors seeking better than nominal returns, but with low risk and emphasis on preservation of wealth (Risk Score: 111-200).
- **Moderate Strategy:** Prudent investors desiring a portfolio designed to accomplish medium to long term financial goals and an investment strategy which accounts for taxes and inflation. Calculated risk is acceptable to achieve good returns (Risk Score: 201-290).
- **Assertive Strategies 1 & 2:** Assertive investors with sufficient income to invest mostly for capital growth. Higher volatility, moderate risk, and more aggressive investments are acceptable to accumulate wealth over time (Risk Score: 291-390).
- **Aggressive Strategy:** Aggressive investors intending to compromise portfolio balance in pursuit of higher long term returns. Security of capital is secondary to potential wealth accumulation (Risk Score: 391-450).

	Average*	YTD*					
	2012 - 2016	03/31/2017					
<b>S&amp;P 500</b>	<b>12.90%</b>	<b>5.04%</b>					
<b>Barclay US TR</b>	<b>2.23%</b>	<b>0.82%</b>					
			%AUM	Alpha**	Beta**	R2**	SD**
<b>Cautious</b>	8.30%	4.88%	<1%	-2.19	1.37	0.71	4.96
<b>Moderate</b>	11.29%	5.36%	47%	0.41	1.27	0.87	4.47
<b>Assertive 1</b>	13.92%	5.02%	33%	0.77	1.30	0.53	5.46
<b>Assertive 2</b>	17.68%	10.15%	10%	1.54	1.49	0.73	6.22
<b>Aggressive</b>	17.56%	15.01%	9%	1.59	2.59	0.62	10.05

\* Net Equal Weighted Returns, PortfolioCenter, Schwab Portfolio Technologies. Returns are net of fees, which are negotiable and range between 50 and 125 basis points.

\*\*Risk Return Statistics, Analytics Investment Advisors, LLC; most recent 24 months.

