OUTLOOK Economic Data and Commentary

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Getting U.S. Productivity Growing Again

One of the most confounding aspects of the U.S. economy in recent years has been persistently weak growth in productivity. From 2011 through 2015, the federal government's official labor productivity measure shows only 0.4 percent annual growth in output per hour of work – the lowest for a five-year span in over 30 years and far below the 2.3 percent average since the 1950s.

And the problem appears to be getting worse. According to the U.S. Department of Labor, productivity has actually declined for the past three quarters in a row.

One person who is particularly troubled by this trend is Douglas Holtz-Eakin, former chief economist of the President's Council of Economic Advisers during the administration of George W. Bush. He believes that worker productivity means "everything" to GDP growth and that decreasing productivity will reduce our standard of living. *OUTLOOK* recently sat down with Dr. Holtz-Eakin to look into the reasons behind the trend, its impact on the economy and his thoughts on what needs to change in order to return to rising productivity.

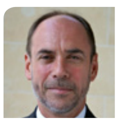
OUTLOOK: What is the correlation between productivity growth and GDP? What does it mean to our standard of living?

Douglas Holtz-Eakin: It's everything, in the long run. If we raise productivity one point, we raise the GDP growth rate one point. It's a one-to-one ratio.

Standard of living is generally defined as output per person, as opposed to output per worker, which is a definition of productivity. If we have the same labor force participation rate and unemployment rate – so essentially everybody is working – then the only way to raise our standard of living is to increase productivity.

From the end of World War II to 2007, GDP per capita rose fast enough that the standard of living doubled roughly every 35 years. In other words, the standard of living roughly doubled in one person's working career. That's quite impressive. However, if we grow at 2 percent, as the Congressional Budget Office forecasts, and add the projected population growth, GDP per capita will double every 75 years. That strikes me as a disturbingly slow approach to achieving the American dream.

This Month's Expert



Douglas Holtz-Eakin is President of the American Action Forum and recently was a commissioner on the congressionally chartered Financial Crisis Inquiry Commission. During 2001 and 2002, he was the chief economist of the President's Council of Economic Advisers (CEA), where he had also served during 1989–1990 as a senior staff economist. At CEA he helped to formulate policies addressing the 2000–2001 recession and the aftermath of the terrorist attacks of September 11, 2001.

From 2003–2005 he was the director of the nonpartisan Congressional Budget Office, which provides budgetary and policy analysis to the U.S. Congress. During 2007 and 2008 he was the director of domestic and economic policy for the John McCain presidential campaign. Dr. Holtz-Eakin began his career at Columbia University in 1985, and in 1990 and moved to Syracuse University, where he became Trustee Professor of Economics at the Maxwell School, Chairman of the Department of Economics and Associate Director of the Center for Policy Research.

OUTLOOK: Is it possible to increase GDP growth without increasing productivity?

DHE: Yes, you can increase GDP by throwing more workers at it. For instance, if we increase the size of the labor force through immigration, that will increase the amount of total output for the economy. But that doesn't raise the standard of living. You get more total GDP, but you have to divide it among more people. Productivity is a better route.

OUTLOOK: What needs to be done to get productivity going again?

DHE: I think you start with a better environment for business investment, and there are two notable avenues for that.

One is tax reform, which could bring us better international competitiveness and better growth prospects. I'm a particular fan of the recent proposal on tax reform from Republicans in the House of Representatives. On the individual level, they propose reducing the number of tax brackets from seven to three and reducing the top tax rate from 39.6 percent to 33 percent. On the business level, they would create a separate tax rate of 25 percent for small businesses and eliminate the death tax, which now takes as much as 40 percent of a business's assets if an owner dies. They would also reduce the corporate tax rate from 39.1 percent to 20 percent. These kinds of ideas support saving and investment, are internationally competitive and provide good incentives for innovation. If nothing else, it might jump-start capital expenditure and get things going on that front.

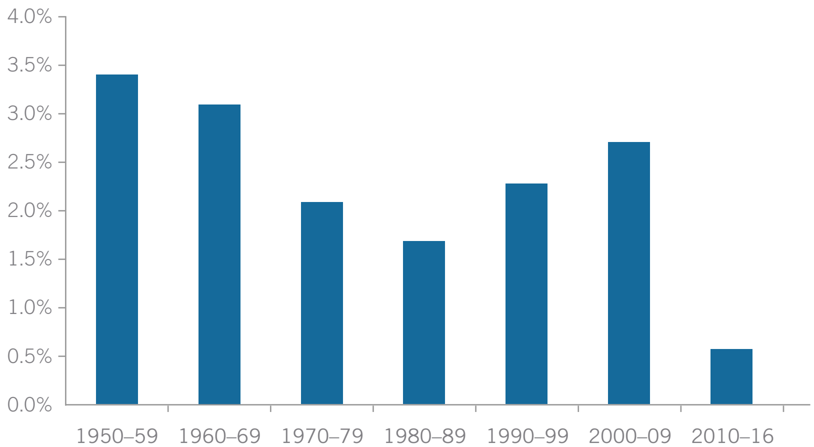
Second would be regulatory reform. At the American Action Forum, we track every regulation finalized by the federal government. In the years of the Obama administration, it has implemented more than one costly regulation a day, on average. The cumulative burden of these regulations is $800 billion, or about $100 billion a year.

OUTLOOK: Beyond low productivity, where do you see the impacts of taxes and regulation playing out in the economy?

DHE: One statistic that jumps out at me is that in the past couple of years – for the first time in measured history – the rate at which firms are born in the U.S. economy has dropped below the rate at which firms fail. For the first time, the business birth rate is less than the death rate.

The birth rate of firms and the competitive vitality they bring and the embodiment of new ideas and business models and technologies has been a source of productivity to the U.S. It tells you something is troublingly wrong when that's not happening. The tax and regulatory burdens have to be considered as part of the problem.

AVERAGE ANNUAL PRODUCTIVITY GROWTH



Source: U.S. Bureau of Labor Statistics

OUTLOOK: What should we hope for from the two candidates for president in terms of increasing productivity?

DHE: I am at odds with both presidential candidates in that I would push forward with trade agreements – the Trans-Pacific Partnership [TPP] in particular, and trade in general. These agreements are very beneficial to U.S. economic growth and productivity. They open up competition and force our firms to be more productive. That was true when we eliminated tariffs on semiconductors back in the late 1990s. Everyone said it would be the end of the U.S. computer industry, and it's been far from that. We have the best technologies on the planet, even now.

It also provides us access to growing global markets. The bulk of income growth will occur outside the U.S., and the vast majority of customers are out there. That gives our firms the opportunity to exploit economies of scale. It allows them to make investments in specialization and focus on the things they do well.

OUTLOOK: How would approval of the TPP affect our productivity growth?

DHE: From a broad perspective, what you want to do in trade is to specialize in the things you're good at – your comparative advantage. As a very rough generalization, the U.S. is good at two things: We invent things like no other country, and we grow things.

We're the world's most inventive economy. We've created these global brands – led by companies such as Microsoft, Google and Apple – that no other nation has produced. We also have a very productive agricultural sector.

We should evaluate the TPP on the basis of its capacity to support these things. Although it's not as much as we would like, the TPP would open Japan to U.S. competition and agriculture. That's a very important step. It would be the same with Canada. The TPP supports the things we do well and will reward those who are the most innovative in those areas. That's where productivity comes from.

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OUTLOOK: How have the various global trade agreements affected U.S. productivity in the past?

DHE: I think they've been largely beneficial. I'm quite frustrated at the ease with which the political classes are dismissing, for example, the North American Free Trade Agreement as a failure. Their criticism just isn't valid. You can't find a serious study that looks back at NAFTA and concludes that it has harmed the U.S. economy.

OUTLOOK: Are you seeing anything from either of the candidates that would give you optimism about a potential increase in U.S. productivity?

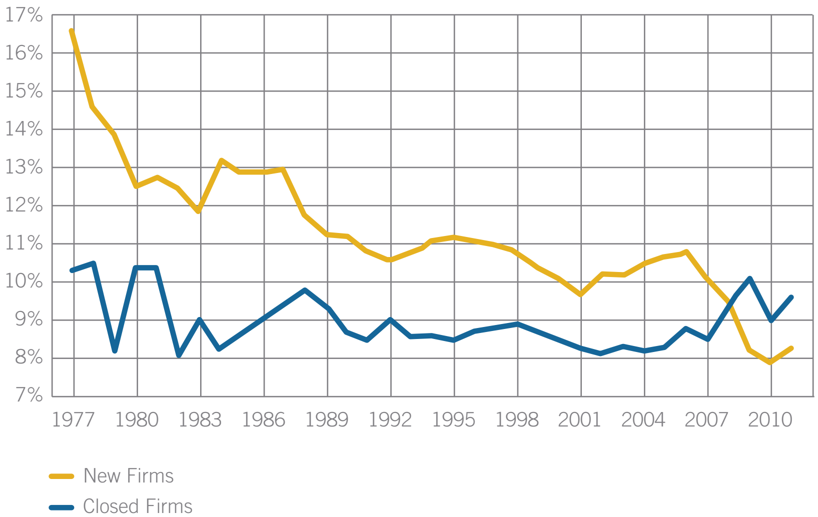
DHE: On the whole, not really. I think these are two very unexciting economic platforms, some of which is just counterproductive and some of which is just blah.

Each will point to infrastructure as something that is going to be good for productivity. I'm certainly going to endorse having sensible infrastructure parameters for the U.S., but there's a long history of infrastructure being overly touted. It doesn't benefit things as fast as everyone wants it to, largely because the notion of "shovel-ready" projects doesn't really exist. Infrastructure doesn't increase productivity by nearly as much as people might hope.

OUTLOOK: Why is that?

DHE: There's a limit to how much you can spend on infrastructure and how quickly you can spend it. If we spent it in an economically efficient fashion, we would do better. But we spend it through the political system, and it doesn't always go to the places that yield the most benefit.

BUSINESS CLOSINGS VS. BUSINESS STARTUPS



Source: U.S. Census Bureau, Business Dynamics Statistics

OUTLOOK: In the past, technology has fueled a lot of productivity growth. Why hasn't the growth of the Internet and its accompanying technologies led to higher productivity?

DHE: I think it probably has. But I can't say what fraction of productivity comes from the Internet. And it's quite possible that productivity is being measured poorly because of the advent of so many new products.

For example, my phone allows me to no longer have to carry change in my pocket because I can use my parking app to pay for my parking wherever I go to the city. That's fantastic, but where does that show up in measured productivity? I don't know exactly. It's a tough area, and we will need to consider how to measure this kind of productivity more accurately as these technological changes continue to take hold.

OUTLOOK: Would a higher minimum wage impact productivity growth?

DHE: I'm not a big fan of raising the minimum wage. It's very much a "be careful what you wish for" kind of proposition. It will matter most in places like retail stores, and bars and restaurants, and what we will see is the substitution of capital for labor. We'll have more kiosks where people check themselves out instead of cashiers. We'll have to bus our own restaurant tables because the busboys will be gone. We've already seen it in other parts of the economy, and we'll see more of it.

It will make the few workers in those industries much more productive. Measured productivity will rise, there's no doubt about it. However, there will be a lot fewer workers and unemployment will rise.

Total GDP growth comes from an increase in the number of workers and growth in output per worker, which is what we mean by productivity. We will get the productivity part, but we will diminish work.

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OUTLOOK: Where does the U.S. stand with respect to productivity growth in the rest of the world and among other developed economies?

DHE: The rest of the developed world is not doing as well as the U.S. is, and that's quite a statement. The patterns in other developed economies are very similar to what we're seeing in the U.S. – low overall growth rates, poor capital investments, lower rates of productivity growth than historically was the norm. This issue is not unique to the U.S.

Developing new economies have an advantage in that they can get productivity growth through adoption of technologies. They can go from largely manual agriculture to mechanized agriculture and make tremendous productivity gains quickly. That opportunity is still out there for the less developed world.

OUTLOOK: Are you optimistic or pessimistic that we can get productivity growth back on track?

DHE: I am cautiously optimistic. I don't believe there is an absence of innovation opportunities. I think there are policies that would help. The question is whether the politics will align with the policies. ■

Interest Rates and Economic Indicators

The interest rate and economic data on this page were updated as of 8/31/16. They are intended to provide rate or cost indications only and are for notional amounts in excess of $5 million except for forward fixed rates.

KEY ECONOMIC INDICATORS

Gross Domestic Product (GDP) measures the change in total output of the U.S. economy. The Consumer Price Index (CPI) is a measure of consumer inflation. The federal funds rate is the rate charged by banks to one another on overnight funds. The target federal funds rate is set by the Federal Reserve as one of the tools of monetary policy. The interest rate on the 10-year U.S. Treasury Note is considered a reflection of the market's view of longer-term macroeconomic performance; the 2-year projection provides a view of more near-term economic performance.

ECONOMIC AND INTEREST RATE PROJECTIONS

Source: Insight Economics, LLC and Blue Chip Economic Indicators

				US Treasury Securities	
2016	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q3	2.80%	2.00%	0.42%	0.71%	1.48%
Q4	2.30%	2.20%	0.52%	0.79%	1.59%
2017	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q1	2.20%	2.30%	0.60%	0.93%	1.74%
Q2	2.30%	2.40%	0.64%	1.07%	1.91%
Q3	2.20%	2.40%	0.68%	1.23%	2.05%

PROJECTIONS OF FUTURE INTEREST RATES

The table below reflects current market expectations about interest rates at given points in the future. Implied forward rates are the most commonly used measure of the outlook for interest rates. The forward rates listed are derived from the current interest rate curve using a mathematical formula to project future interest rate levels.

IMPLIED FORWARD SWAP RATES

Years Forward	3-month LIBOR	1-year Swap	3-year Swap	5-year Swap	7-year Swap	10-year Swap
Today	0.85%	0.95%	1.09%	1.20%	1.30%	1.43%
0.25	0.92%	0.99%	1.12%	1.22%	1.32%	1.44%
0.50	0.99%	1.03%	1.16%	1.24%	1.34%	1.46%
0.75	1.04%	1.08%	1.18%	1.29%	1.38%	1.50%
1.00	1.07%	1.11%	1.20%	1.30%	1.39%	1.51%
1.50	1.12%	1.15%	1.26%	1.36%	1.45%	1.56%
2.00	1.16%	1.20%	1.29%	1.40%	1.48%	1.58%
2.50	1.21%	1.25%	1.34%	1.45%	1.52%	1.61%
3.00	1.26%	1.30%	1.40%	1.49%	1.57%	1.65%
4.00	1.35%	1.39%	1.50%	1.58%	1.64%	1.71%
5.00	1.46%	1.52%	1.60%	1.68%	1.71%	1.76%

HEDGING THE COST OF FUTURE LOANS

A forward fixed rate is a fixed loan rate on a specified balance that can be drawn on or before a predetermined future date. The table below lists the additional cost incurred today to fix a loan at a future date.

FORWARD FIXED RATES

Cost of Forward Funds

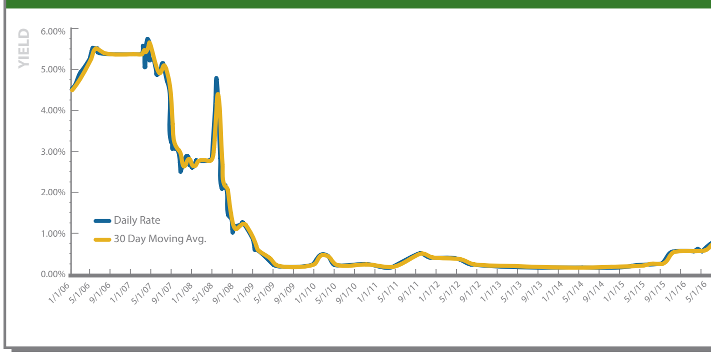
Forward Period (Days)	Average Life of Loan			
	2-yr	3-yr	5-yr	10-yr
30	5	5	5	5
90	5	9	8	7
180	5	11	10	11
365	7	21	20	20

Costs are stated in basis points per year.

SHORT-TERM INTEREST RATES

This graph depicts the recent history of the cost to fund floating rate loans. Three-month LIBOR is the most commonly used index for short-term financing.

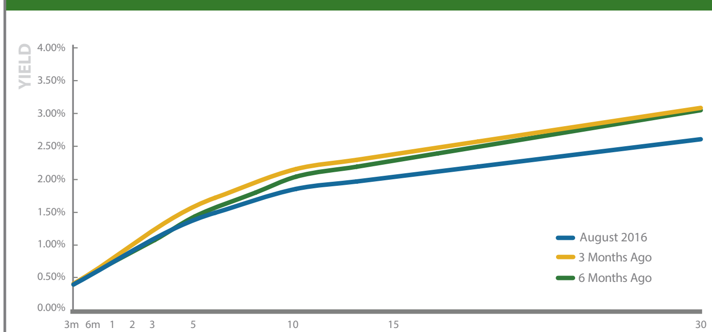
3-MONTH LIBOR



RELATION OF INTEREST RATE TO MATURITY

The yield curve is the relation between the cost of borrowing and the time to maturity of debt for a given borrower in a given currency. Typically, interest rates on long-term securities are higher than rates on short-term securities. Long-term securities generally require a risk premium for inflation uncertainty, for liquidity, and for potential default risk.

TREASURY YIELD CURVE



CoBank Announces Board Election Results

CoBank has announced results of shareholder elections for the bank's 2017 Board of Directors. A total of four board seats were on the ballot. CoBank is in the process of a shareholder-approved downsizing of its board and will have 23 elected directors from six regions in 2017. The bank's governance bylaws also call for two outside, independent board members with no customer or Farm Credit affiliation and up to four additional appointed directors.

The winning candidates for each open seat are listed in the table below, along with occupation, region, type of seat, residence, and term expiration date.

REGION	TYPE OF SEAT	NAME	OCCUPATION	RESIDENCE	TERM EXPIRES
Central	One Stockholder, One Vote	David J. Kragnes*	Owner, David Kragnes Farm	Felton, MN	2020
East	One Stockholder, One Vote	Russell G. (Rusty) Brown	Community banker & director, Northern Neck Electric Cooperative	Warsaw, VA	2020
Mid Plains	One Stockholder, One Vote	Scott H. Whittington*	GM, Lyon-Coffey Electric Cooperative, Inc.	Burlington, KS	2020
South	Modified Equity	Robert M. Behr*	CEO, Citrus World, Inc	Lakeland, FL	2020

**Incumbent board member*

"On behalf of our entire board, I would like to thank all of this year's board candidates for their commitment to CoBank," said Everett Dobrinski, chairman of the board. "CoBank benefits greatly from having a board of directors that not only reflects the bank's national scope and the diverse industries it serves, but also shares CoBank's passion for serving rural America. We look forward to working with the executive management team to continue building CoBank's foundation of strength and stability in the coming year and positioning the bank for long-term success."

About CoBank

CoBank is a $125 billion cooperative bank serving vital industries across rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all 50 states. The bank also provides wholesale loans and other financial services to affiliated Farm Credit associations serving farmers, ranchers and other rural borrowers in 23 states around the country.

CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture, rural infrastructure and rural communities. Headquartered outside Denver, Colorado, CoBank serves customers from regional banking centers across the U.S. and also maintains an international representative office in Singapore.

For more information about CoBank, visit the bank's web site at www.cobank.com.

CoBank also announced that Mike Brown will join the board as an appointed director, effective January 1, 2017. Brown will succeed Barry Sabloff, a retired banking executive who was appointed to the board in 2005 and has served as the board's designated financial expert.

Brown is a retired banking executive who served in a number of executive positions for J.P. Morgan including managing director and global head of multinational coverage, Asia Pacific corporate banking head, and chief operating officer and branch manager of J.P. Morgan Securities based in Tokyo. Brown has held leadership roles with the American Chamber of Commerce in Hong Kong, the International Bankers Association in Japan and served on the executive committee of the U.S. Korea Business Council. He holds a bachelor's in finance from Indiana University and a master's in management from the Kellogg School of Management at Northwestern University.

"Mike's global perspective and deep understanding of banking and finance will be enormously valuable for our board, and we're grateful he has accepted our appointment," Dobrinski said. "We are also deeply grateful to Barry Sabloff and extend heartfelt thanks to him for his many years of service to CoBank."

The bank uses an independent Nominating Committee to develop a slate of qualified director candidates for each election. No current board member may serve as a member of the Nominating Committee. No member of management sits on the CoBank board.