



The Longbrake Letter*

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I. U.S. and Global Economies Gather Momentum While U.S. and Global Political Uncertainties Mount

Financial markets just about everywhere are doing well as global growth accelerates. But, while investors are enjoying rising prices, they worry a lot about where the U.S. is headed politically under a divisive Trump Administration and about the potential for political crisis in Europe given the rise of populist and nationalist movements and the spate of national elections on tap for this year beginning with the Netherlands on March 15.

A year ago global markets were mired in panic. There was concern especially about the stability of emerging market economies. Many thought recession might be at hand. But, global central banks pulled out all the stops, said soothing words and provided prodigious amounts of liquidity. The crisis passed and it seems almost silly in retrospect that we were so concerned.

This year the mood couldn't be more different. The U.S. economy has continued to chug along and might be picking up a bit. Europe is doing the best it has in seven years. China has not imploded. Financial markets are calm, stock prices are up and, even though interest rates have risen, they remain quite low by historical standards. All measures of optimism have risen except for those who admit to being Democrats.

For all of the political turmoil that Donald Trump's presidency has stirred up, the U.S. economic outlook looks to be relatively benign and could improve if Trump's fiscal stimulus proposals are enacted.

So what could go wrong?

Significant forces and trends remain at work which could, and probably eventually will, disrupt this apparent period of economic stability we are currently enjoying.

*The information contained in this newsletter does not constitute legal advice. This newsletter is intended for educational and informational purposes only.

The European Union is fundamentally structurally flawed and no amount of monetary largesse from the European Central Bank will save it.

Populism, nationalism, and nativism continue to spread and grow as a political force in major market economies. This is already evident in the unexpected outcomes of the recent U.K. and U.S. elections. Centrist parties in Europe may be able to cling to political power, but their strength is being sapped by more extreme parties on the right and on the left which are gathering momentum and feeding off of voter angst about economic wellbeing, the encroachment of immigration on the sanctity of their way of life, and the threat to national sovereignty. Several elections in the Netherlands, France, Germany, and perhaps Italy, in coming months will test whether Europe's time for political upheaval has arrived as it has in the U.K. and the U.S.

Brexit marches on toward a hard landing which will eventually have adverse economic consequences and could lead to the breakup of the U.K.

As I discussed in the *January Longbrake Letter*, China is stagnating economically.

Global population growth continues to slow, particularly in more developed economies, but also increasingly in emerging markets countries. Natural population growth, absent immigration, has already turned negative in countries such as Germany, Japan, and Russia, and will turn down in China in a few years. Immigration accounts for most of the U.S.'s population growth, which might slow considerably if President Trump carries through on his campaign promise to curtail immigration in the U.S. substantially. The trend of slowing population growth is a natural and inevitable outcome of improving living standards, but it also will slow economic growth and create challenges in financing social welfare programs for an aging population.

Productivity has declined substantially in all developed economies over the past 10 years. The causes are debated but the consequence of slower economic growth is clear. While optimism abounds that productivity will recover, because the phenomenon is so widespread and there is little agreement about the causes, such optimism is more a matter of faith that the system will return to a "normal" state rather than it is a likelihood based upon solid factual analytics. If low productivity, indeed, is the "new normal," this will only compound the affordability challenges that slowing population growth poses for social welfare programs.

Debt loads relative to economic output continue to grow just about everywhere. Leverage is a wonderful thing because it can accelerate economic activity and boost growth. But too much leverage can also have pernicious consequences. It can facilitate investment in low return projects and economic activity which over the longer run will not generate sufficient cash flows to service the debt. The outcome inevitably is insolvency. Worse, easy access to cheap money can spur speculation and euphoria, as we experienced not so long ago during the housing bubble. A conventional response to overleverage often is to reduce interest rates and extend maturities. This buys time, but does not address the long-run ability to service debt because debt restructuring does not change project cash flows. In fact, at the level of the firm, debt restructuring often enables inefficient zombie companies to continue to operate and interferes with the forces of creative destruction which are essential to vibrant economic growth. At the level of the nation, the consequences of too much debt leverage are less clear, but there is some evidence that low interest rates, low productivity and low growth are linked phenomena.

Then there is the problem of an overvalued dollar. This helps keep U.S. inflation low, but puts U.S.

exports at a price disadvantage in global markets, thus slowing U.S. economic growth and exporting jobs to other countries. This serves to reinforce the forces of globalization which have already resulted in the loss of numerous jobs in the U.S. and stoked the fires of populism. If U.S. tax reform includes a border adjustment tax, as proposed by Speaker Ryan, by taxing imports and exempting exports from taxation, there are four possible consequences. First, U.S. inflation would be boosted. Second, more U.S. jobs would be created. Third, federal tax revenues would be boosted because additional tax revenue on imports would greatly exceed revenue lost on exports. Fourth, the value of the dollar would rise. This fourth consequence would mitigate possible effects of the first three. But it also could lead to severe international financial market turmoil. Upwards of \$10 trillion of emerging market debt, according to the Bank for International Settlements, is denominated in U.S. dollars. A large and sustained rise in the value of the dollar would challenge the ability of issuers to service their dollar-denominated debt and could spark a plague of bankruptcies.

Yet another global trend is rising income and wealth inequality. While the surge in global economic growth over the past several decades has lifted billions of people out of poverty, the distribution of income and wealth has become progressively more unequal everywhere. But while the benefits of rapid global economic growth for people at the bottom of the income distribution have been significant in emerging economies, those similarly situated in mature economies have experienced little benefit. For example, real spendable income has risen very little for the bottom 90 percent of the U.S. population over the past 40 years. The trend toward greater income and wealth inequality is an inexorable outcome of market-based economies. Government policies can attempt to mitigate the consequences. However, the ascendancy of populism and the rise of Donald Trump imply that those policies have not been fully successful and might even have contributed to the anger and loss of hope that is propelling populism in the U.S. The phenomenon of growing income and wealth inequality along with linked trends in education is driving social and political polarization of the U.S. population which bodes ill for the future of American society, democracy and economic stability and growth.

All of these trends have been developing slowly over several decades. But like climate change, the impacts are accumulating and eventually the consequences will be apparent and significant. Perhaps with the election of President Trump, the pivot point has been reached in the U.S.

II. The Ascendancy of Populism and The Rise of Donald Trump

1. A Return to National Greatness – David Brooks

David Brooks penned an essay entitled “A Return to National Greatness,” which was published by The New York Times on February 3, 2017.¹ Several passages from that essay provide insight about the intersection of America’s historic global and the forces that lead to the election of Donald Trump. Brooks asks whether we are in the process of abandoning America’s historic role and American exceptionalism.

America is placed at the vanguard of the great human march of progress. America is the grateful inheritor of other people’s gifts. It has a spiritual connection to all people in all places, but also an exceptional role. America culminates history. It advances a way of life and a democratic

¹David Brooks. “A Return to National Greatness,” The New York Times, February 3, 2017.

model that will provide people everywhere with dignity. The things Americans do are not for themselves only, but for all mankind.

... we learn our deepest trusts through myth. Myths don't make a point or propose an argument. They inhabit us deeply and explain to us who we are. They capture how our own lives are connected to the universal sacred realities. In myth, the physical stuff in front of us is also a manifestation of something eternal, and our lives are seen in the context of some illimitable horizon.

It gave America a mission in the world — to spread democracy and freedom. It gave us an attitude of welcome and graciousness, to embrace the huddled masses yearning to breathe free and to give them the scope by which to realize their powers.

But now the myth has been battered. It's been bruised by an educational system that doesn't teach civilizational history or real American history but instead a shapeless multiculturalism. It's been bruised by an intellectual culture that can't imagine providence. It's been bruised by people on the left who are uncomfortable with patriotism and people on the right who are uncomfortable with the federal government that is necessary to lead our project.

And so along come men like Donald Trump and Stephen Bannon with a countermyth ... that deep in the heartland are the pure fold who embody the pure soul of the country — who endure the suffering and make the bread. But the pure peasant soul is threatened. It is threatened by the cosmopolitan elites and by the corruption of foreign influence.

... the Trump-Bannon myth is winning. The policies that emanate from it are surprisingly popular. The refugee ban has a lot of support. Closing off trade is also popular. Building a wall is a winning issue.

It has exposed how attenuated our vision of national greatness has become and how easy it was for Trump and Bannon to replace a youthful vision of American greatness with a reactionary, alien one.

We can argue about immigration and trade and foreign policy, but nothing will be right until we restore and revive the meaning of America. Are we still the purpose-driven experiment Lincoln described and Emma Lazarus wrote about: assigned by providence to spread democracy and prosperity; to welcome the stranger; to be brother and sister to the whole human race; and to look after one another because we are all important in this common project?

Or are we just another nation hunkered down in a fearful world?

2. What Propelled Donald Trump's Rise? — America's Crumbling Social System

Why did Donald Trump win the presidential election when the New York Times, based on a sophisticated statistical model, cited an 84 percent probability that Hillary Clinton would prevail?

The short answer is that a substantial proportion of the electorate wanted change and through the vagaries of the Electoral College, the votes for change prevailed. Donald Trump was the candidate for change; Hillary Clinton was the candidate for the status quo — continuing the policies of President Obama.

In a paper I wrote in 2013, "*America's Crumbling Social System: Potential Solutions Involving Religious*

and Non-Profit Leadership and Organizations,” I described the forces eroding America’s social system.² Some salient excerpts from the paper are quoted below:

... the American social system has become less inclusive and more extractive — serving the interests of a few.

Human beings care about their own welfare and success. But their behaviors are also motivated by family, clan and society’s wellbeing. Acting in one’s self interest does not always result in collective benefit to society. For that reason all civilizations have developed governance systems to regulate behaviors and all civilizations have embedded values, belief systems and norms that guide human interactions.

In addition to growing income and wealth inequality, the cultural divide is also growing. “The American Way of Life,” which involved a civic culture that encompassed an extremely large portion of Americans of all classes and muted differences among them, and which has been celebrated as the “Middle Class” — the backbone of American culture — appears to be giving way to a new upper and a new lower class complete with a deep cultural chasm between them. The opportunity for upward mobility, the cornerstone of the “American Dream,” appears to be diminishing. The social fabric has frayed as the institution of marriage has declined and the percentage of single-parent households has increased. The incidence of criminal behavior has increased in the new lower class. And, involvement in community-based social value creation has diminished. In short, cultural inequality has emerged as old social norms have given way to behaviors that are deleterious to overall social welfare.

Charles Murray documented the emergence of the new upper and lower classes in Coming Apart. And, Charles Blow wrote: “*America is quickly dividing itself into two separate nations, regional enclaves of rigid politics, as the idea of common priorities fades further into a distant past.*” Globalization has served to amplify the trends driving the crumbling of America’s social system.

Arthur C. Brooks, president of the American Enterprise Institute — a leading conservative think tank, and Sherrod Brown, Democratic U.S Senator from Ohio, in separate opinion-editorial commentaries have articulated the powerful human emotions and anguish of working-class America.^{3,4} Notice that both focus on the importance of “**dignity**.”

Brooks talks about the acute crisis that has been rolling through working-class America. He acknowledges concern about growing inequality but asserts that the relevant gap is “**dignity**.” “*Too many Americans have lost pride in themselves. We sense dignity by creating value with our lives, through families, communities, and especially work ... the U.S. is bifurcating into a nation a winners and losers, and this distinction is seeping into American culture ... where ... experts heard incoherent specifics, many voters heard a consistent deeper theme: A promise to work hard at restoring left-behind Americans’ dignity by bringing back jobs and striking back at the cultural elites who disdain them.*”

Senator Brown observes that the Rev. Dr. Martin Luther King, Jr. taught us that all work has **dignity**.

²William A. Longbrake. “America’s Crumbling Social System: Potential Solutions Involving Religious and Non-Profit Leadership and Organizations,” paper prepared for the Henry Kaufman Forum on Religious Traditions and Business Behavior, October 31, 2013.

³Arthur C. Brooks. “How Trump Filled the Dignity Deficit,” *The Wall Street Journal*, November 10, 2016.

⁴Sherrod Brown. “When Work Loses its Dignity,” *The New York Times*, November 17, 2016.

“People take pride in the things they make, in serving their communities in hospitals or schools, in making their contribution to society with a job well done. But over the past 40 years, as people have worked harder for less pay and fewer benefits, the value of their work has eroded. When we devalue work, we threaten the pride and dignity that come from it. . . . American workers . . . understand . . . that you build a society and an economy from the middle class out. . . . [the worker force] feels betrayed by trade and tax policies that create immense affluence at the top and take wealth from workers.”

Trump is the beneficiary of the angst and desire for change that has flowed from the loss of dignity and the erosion of the bonds that historically held together a vibrant and cohesive American society and culture.

3. How Did America Get to This State?

While there are many contributing forces, two stand out. One involves the intersection of market-based capitalism and advances in communications technology; the other flows from well-intentioned social policies which have had unanticipated negative consequences.

a. The Second Gilded Age

In a book entitled Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else, published in 2012, Chrystia Freeland explains how market-based capitalism and advances in communications technology have combined to create the second Gilded Age winner-take-all society.⁵

The first Gilded Age, the title of a novel written by Mark Twain in 1873, occurred in the late 1800’s. It was an era in which the industrial revolution transformed American society. It gave rise to a new super-rich and the massive migration of workers from farms to factories lead to acute economic anxiety. Income and wealth inequality skyrocketed. Freeland argues that the emergence of the super-rich was the direct result of bigger markets facilitated by cheap national train transportation networks and expanded communications technology involving the telegraph and later the telephone.

Bigger markets and media innovations which enabled information to be disseminated cheaply to those bigger markets created a winner-take-all opportunity for a select group of individuals. Economic growth created more wealth, which benefited everyone, but the super-elite were able to commandeer a larger share of that wealth by virtue of larger markets and their ability to exploit those larger markets to their own personal advantage through use of media. By definition, if the super-rich are able to claim a larger share of a larger market’s wealth, everyone else is left with a smaller share. Inequality increases.

Income equality in the U.S. peaked in the late 1920s. For the next 30 to 40 years, income inequality diminished. Several forces appear to have contributed to the decline such as onerous income tax rates enacted during the Depression. Then came World War II, which was followed by the GI bill and other policies that boosted educational and economic opportunities for many, regardless of income level. During this time period, the natural forces of market expansion and media enablement did not disappear. They were simply eclipsed by what turned out to be temporary mitigating forces.

⁵Chrystia Freeland. Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else, The Penguin Press, New York, 2012.

But, as society and the economy moved into the 1960s, the dominating power of market-based forces of winner-take-all re-emerged. The second Gilded Age was underway but with added impetus.

Freeland cites four factors that are propelling today's growing income inequality. First, as was the case during the first gilded age, markets continue to grow in size. They have become global in scope. Second, innovations in communications have enabled a few to take an ever increasing share of income and wealth. The internet and coming of age of social media have been enablers. Third, knowledge workers, not just industrialists, can create a personal advantage through media. Clearly, Donald Trump has benefited enormously by virtue of his TV celebrity status and use of Twitter. In the world of financial services, use of knowledge and communications technology to develop complex derivatives, algorithmic trading strategies and hedge funds have created many new billionaires. Fourth, Freeland cites the multiplier effect which combines the power of larger markets and stardom propelled by media to favor the few who achieve wide-spread name recognition.

Inherent in Freeland's thesis is that the emergence of the new super-elite in the Second Gilded age is no accident. It is a direct and unchangeable consequence of the embracement of market-based capitalism by most nations. Market-based capitalism has been beneficial on balance for human society, although some of its excesses are troublesome. Societies can pursue policies and support creation of robust institutions that mitigate capitalism's excesses.⁶ Similarly, although the emergence of the super-rich is inexorable that does not prevent the development of policies and institutions to mitigate the potential consequences of income inequality.

The new super-elite are hardworking, highly educated, and transnational jet-setting meritocrats. This has given rise to a new upper class that is global in nature with limited identification with traditional geographic-based structures such as the nation-state or local community. As Charles Murray has pointed out, this new upper class tends to cluster in bubble zip codes. The use of the word "bubble" is purposeful to indicate that people living in these zip codes have become isolated from other parts of American society. Specifically, Murray's bubble is the protective barrier of prosperity and self-selected associations that increasingly shield highly educated people from contact with the rest of society. These elites cluster together in neighborhoods and are largely unaware on what is happening in the rest of America.

Freeland goes on to explain that in a winner-take-all society all others are "losers." Opportunities for advancement are limited and the availability of good jobs with good pay and dignity are diminishing. This engenders frustration and disillusionment with the established system. It is a gloomy assessment and, if realized, will ultimately lead to a revolt against the privileged few. That is what history tells us over and over again. Populism is one outlet for the anger of the underclass, which now apparently has found its leader in the U.S. president — Donald Trump.

b. Declining Dignity of Working People — Failed Policy?

Nicholas Eberhardt published an essay on February 15, 2017 entitled "Our Miserable 21st Century."⁷ It is a dark essay. In Eberhardt's words: "... *things have been going badly wrong in America since the beginning*

⁶An excellent essay discussing both the benefits and excesses of capitalism and how excesses might be mitigated is contained in a recent essay by Arthur C. Brooks, president of the American Enterprise Institute: "Confessions of a Catholic Convert to Capitalism," *American Magazine*, February 6, 2017.

⁷Nicholas N. Eberhardt. "Our Miserable 21st Century," *Commentary*, February 15, 2017.

of the 21st century.”

Eberhardt examines three trends: **wealth**, **output**, and **employment**.

The good news is that **wealth** in the U.S. skyrocketed from \$44 trillion in 2000 to \$90 trillion in late 2016, an increase of 106 percent. The bad news is that almost all of this additional wealth has been accumulated by a tiny fraction of the population.

As we know all too well, growth in **output** (real GDP) has been miserable in recent years, an increase in nominal output of 78 percent, considerably slower than the increase in wealth. Some of the disappointing growth in real output is due to slowing population and employment growth but much is due to a collapse in productivity.

However, the decline in **employment** growth has been much greater than the slowing in population growth or aging demographics alone can account for. Prime working age people (both men and women) between the ages of 25 and 54 have declined nearly 4 percentage points since 2000. This decline in participation amounts to 5 million fewer workers and most have dropped out of the labor force entirely and are not seeking employment. Between 2000 and 2016 total hours worked (nonsupervisory and production workers) grew 8.5 percent compared to 33.4 percent between 1985 and 2000. Over the 2000-2016 period the population eligible to work grew 22 percent, which translates into a decline of 11.0 percent in total hours worked per individual eligible to work.⁸

Participation of prime age males in the labor force in 2015 was lower than in any other developed economy with the exception of Italy. Sweden and Japan had the highest participation rates. Overall participation of both prime age men and women is considerably lower than the average for other developed economies and worsens with age. The negative gap is over 2 percentage points for the 25-34 age group and grows to nearly 6 percentage points for the 45-54 age group.

These data naturally raise the question as to why there has been such a drastic decline in prime age labor force participation and why participation is so much worse in the U.S. compared to other countries with mature economies. The reasons, according to Eberhardt and substantiated by a recent **GS** report,⁹ are troubling. There are three sets of reasons — deteriorating health, criminal incarceration, and inadequate policy interventions.

With respect to **deteriorating health**, death rates for white men and women aged 45-54 with high school degrees or less have risen sharply. The increase is due to a higher incidence of suicides, chronic liver cirrhosis, and poisonings (including drug overdoses). Nearly half of prime age men who are not in the labor force take pain medication on a daily basis and almost 20 percent are in poor health. More than 5 percent of the U.S. population engages in opioid pain pill use compared to less than 1 percent in European countries.

Eberhardt suggests that Medicaid has been an enabler of increased drug use by covering the cost. 21

⁸Eberhardt cites 18% growth in the population eligible to work between 2000 and 2015 and 4% for total hours worked, resulting in a decline of 12% in hours worked per eligible person. Eberhardt does not cite his data source for total hours worked. Historical Bureau of Labor Statistics data are available for nonsupervisory and production workers but are available for all employees only from March 2006 to the present. The slight differences in the data do not undercut the validity of Eberhardt's observation.

⁹Daan Struyven and David Mericle. “The Decline of the US Participation Rate in Global Perspective, US Economics Analyst, Goldman Sachs Economics Research, February 24, 2017.

percent of prime-age working men in the labor force are enrolled in Medicaid, but 53 percent of prime-age men not in the labor force are beneficiaries.

Among prime-age white men who are not in the labor force an astonishingly high 57 percent in 2013 were collecting disability benefits. This percentage has increased dramatically in recent years.

Why have so many turned to opioid use and why have so many filed for disability benefits? Everhardt argues that the underlying cause has been a substantial increase in economic insecurity in recent years. This leads to anxiety and loss of hope. The ease of access to pain killers and alcohol and the programs that finance them enable people to drop out of the work force and still have enough income to survive. Unfortunately, the reduction in labor force participation caused by health issues is not a temporary phenomenon. Not only has it resulted in slower economic growth, it has also sowed the seeds of frustration and hopelessness that have stoked populism and empowered men like Donald Trump.

Another significant contributing factor to the decline in employment participation is the high rate of **prison incarceration** in the U.S. According to data compiled by GS, the share of the U.S. population in prison is nearly 10 times that of Germany and 15 times that of Japan. In addition, The Center for Economic and Policy Research estimates that more than 6 percent of 18-64 year-old males were former prisoners in 2014 and about 14 percent had felony convictions.

Less supportive childcare **policies** and inadequate job retraining have also contributed to economic insecurity and the drop in participation in the labor force.

Eberhardt concludes his dismal essay: “*The abstraction of ‘inequality’ doesn’t matter a lot to ordinary Americans. The reality of economic insecurity does. The Great American Escalator is broken — and it badly needs to be fixed.*”

David Brooks in a recent essay summarized trends in America which describe “... a country that is decelerating, detaching, losing hope, getting sadder. Economic slowdown, social disaffection and risk aversion reinforce one another.”¹⁰ There are other troublesome trends in the U.S. which correlate with slowing growth and a less dynamic U.S. economy. Geographic mobility has declined 51 percent from the levels of the 1950s and 1960s. The share of Americans under the age of 30 who own a business has fallen 65 percent since the 1980s. Job switching has declined by 25 percent since 1990. Americans are creating 25 percent fewer international patents compared to 1999.

4. Make America Great Again — Return Power to the People

Donald Trump exploited the growing frustration of many who are not among the elite or new upper class and through the quirks of the Electoral College constitutional system is now president, even though Hillary Clinton gained 2.9 million more popular votes.

¹⁰David Brooks. “This Century Is Broken,” The New York Times, February 21, 2017.

a. Recipe for a Successful Populist

First, find a “wound” common to many. Second, find someone to blame. Third, make up a good story to tell. Fourth, tell the wounded you know how they feel; tell them you found the “bad” guys, e.g. minorities, politicians, Wall Street. Fifth, characterize the bay guys as vermin, evil masterminds, haters and losers. Sixth, paint yourself as the savior of the wounded. Seventh, Forget about policies and plans; enrapture the wounded with a tale that starts with anger and ends with vengeance — a vengeance they can participate in.¹¹

b. Populism Is Built on the Irresistible Allure of Simplicity

Populism can survive only amid polarization. That is why the split between the new upper and lower classes is so dangerous., Unfortunately for America the polarization of American society has already reached extremes are documented by Charles Murray in *Coming Apart*. And, the fault lines appear to be worsening in the early days of the Trump presidency. The initial reaction of elites and progressives has been to critique Trump’s supporters as know nothings. Such arrogance, when emotions drive populism, is counterproductive. Instead of fighting growth polarization criticisms of this sort and protest tactics are likely to drive the wedge of polarization deeper. To reduce polarization requires understanding what is causing it and seeking responses that address the causes in ways that begin to reduce the extent of polarization.

c. Some Policy Proposals to Address the Causes of Polarization

Arthur C. Brooks, president of the American Enterprise Institute, recently penned an essay in which he explored one of the factors which have been building over the past 50 years and which are driving forces behind the political upheaval now underway.¹² That one factor in Brooks’ words is “. . . *the alienation and disaffection of less educated white voters in rural and exurban areas.*” At the root of the anger that has been building and now has been unleashed is the loss of **human dignity**. “*At its core, to be treated with dignity means being considered worthy of respect. We feel a sense of dignity when our own lives produce value for ourselves and others. Put simply, to feel dignified, one must be needed by others.*” Brooks believes that many of America’s social policies, which have been crafted to help people, have failed to make people feel needed in their families, their communities, and the broader economy. He goes on to argue that what is needed is a **“neededness agenda”** that will put more people to work.

A “neededness agenda” “. . . *will require significant tax and regulatory reforms to encourage more firms to locate and expand their operations in the United States.*” Another needed initiative is to restructure social safety net programs in ways that increase people’s incentives to seek employment. This includes programs such as housing vouchers, food stamps, and federal disability insurance. Rather than focus on blunt policies such as a minimum wage, more targeted income subsidies such as the Earned Income Tax Credit and universal basic income needed to be explored with neededness in mind. The broken immigration system must be fixed. “*Making people more necessary will also require improving human capital through*

¹¹Andres Miguel Rondon. “In Venezuela, We Couldn’t Stop Chavez; Don’t Make the Same Mistakes We Did,” *The Washington Post*, January 27, 2017, Rondon compares Donald Trump to Hugo Chavez stating that they are both masters of populism.

¹²Arthur C. Brooks. “The Dignity Deficit: Reclaiming Americans’ Sense of Purpose,” *Foreign Affairs*, February 13, 2017.

better education.”

Brooks urges legislators and officials to “... *try to ensure that any social policy passes a simple test: Does it weaken family integrity or social cohesion — for example, by encouraging single parenthood, fragmenting communities, erecting barriers to religious expression, or rewarding idleness ... the keys to fulfillment are building a stable family life, belonging to a strong community, and working hard.*” “... the moral obligation of leadership ... [is] *to maximize the inherent dignity that all Americans are born with, remembering that we all possess a deep need to be needed.*”

5. The Mind of Donald Trump — Is There a Threat of Autocracy in America?

Donald Trump is the beneficiary of the anger and frustration has been building over decades and with the disillusionment with the established elite’s apparent lack of understanding and inability to address deep-seated economic and social problems. Trump is a master populist who was in the right place at the right time to become the spokesperson for the populist movement.

But, there is a significant question as to how Trump’s personality will impact his leadership and whether his leadership will spark America’s much needed economic and social renewal or whether his leadership will devolve into self-serving illiberal tendencies that worsen matters.

a. Trump’s Personality Profile

Psychologists have developed five personality traits that describe a person’s identity. These traits are inherent in a person’s genetic makeup. That means they are embedded and unchangeable. However, a person’s experiences can have a modifying impact to a certain extent, but that might depend to a considerable extent on where an individual is on the continuum of each of the five personality traits.

The five personality traits are: introversion/extroversion; openness/closedness, agreeableness/disagreeableness; emotional stability/instability; and conscientiousness/non-conscientiousness.

Each of the five personality traits have a continuum. The continuum can be thought of as a bell curve with the vast preponderance of people falling not far from the mid-point of a continuum.

In Donald Trump’s case, he is as extrovert and at the far end of that continuum. The other personality trait continuum that stands out for Trump is agreeableness/disagreeableness. He is literally off the chart at the disagreeableness end of that continuum.

So what does that mean in terms of Donald Trump’s identity and behavior? Basically, Trump is an extreme narcissist. The DSM-IV diagnostic criteria for an extreme narcissist are “*a pervasive pattern of grandiosity (in fantasy or behavior), need for admiration, and lack of empathy, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:*

1. Has a grandiose sense of self-importance (e.g. exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements).
2. Is preoccupied with fantasies of unlimited success, power, brilliance, beauty, or ideal love.

3. Believes that he or she is “special” and unique and can only be understood by, or should associate with, other special or high-status people (or institutions).
4. Requires excessive admiration.
5. Has a sense of entitlement, i.e., unreasonable expectations of especially favorable treatment or automatic compliance with his or her expectations.
6. Is interpersonally exploitative, i.e. takes advantage of other to achieve his or her own ends.
7. Lacks empathy: is unwilling to recognize or identify with the feelings or needs of others.
8. Is often envious of others or believes that others are envious of him or her.
9. Shows arrogant, haughty behaviors or attitudes.

The narcissist diagnostic of Donald Trump is remarkably reflective of his behavior patterns. It is important to understand that these traits are deeply embedded. That means that hopes that now that Donald Trump occupies the office of the presidency that he will modify his behaviors and act presidential will never be realized. The Donald Trump of the campaign has not changed during the first five weeks of the presidency. He will not change going forward.

b. Trump’s Illiberal Tendencies

What should be of concern, however, is how Trump might react if the narcissistic needs of his personality are thwarted.

In a recent article in Vox, Ezra Klein discusses this possibility.¹³ In the article Klein references Ron Klain’s theory involving Trump’s authoritarian impulses and troubled White House management and summarizes Klain’s view that “. . . *it’s Trump’s dysfunctional relationship with the government that catalyzes his illiberal tendencies — the more he is frustrated by the system, the more he will turn on the system.*” If Trump fails, he will not acknowledge it as his failure and he will find a narrative to explain it. In Klain’s words, “*It will not be a narrative of self-criticism. It will not be that he let you down. He will figure out who the villains are, and he will focus the public’s anger at them.*” As a case in point think about Trump’s rant about the “fake press” as “an enemy of the American people” in his Conservative Political Action Conference address on February 24.

Klein goes on to summarize a discussion with Yascha Mounk who studies the way liberal democracies tip back toward authoritarianism. Recent examples include Hungary and Turkey. “*The distinction you need to make with Trump, Mounk argues, is that he’s not an ideological authoritarian but a contextual one. He is not entering office with a program to weaken the judiciary and bulldoze legislative roadblocks, as Viktor Orban did in Hungary. His dangerous tendencies, rather, are reactive to the situations in which he finds himself. In a world where they don’t let him do what he wants, he thinks these institutions are unpatriotic and need to be destroyed.*” Klein states that Trump’s illiberal tendencies come to the fore when he’s losing, not when he’s winning. “*The threat Trump poses is of illiberal policies and, potentially, an illiberal political movement, not autocracy. It is easy to imagine Trump, in a year, cornered in his own*

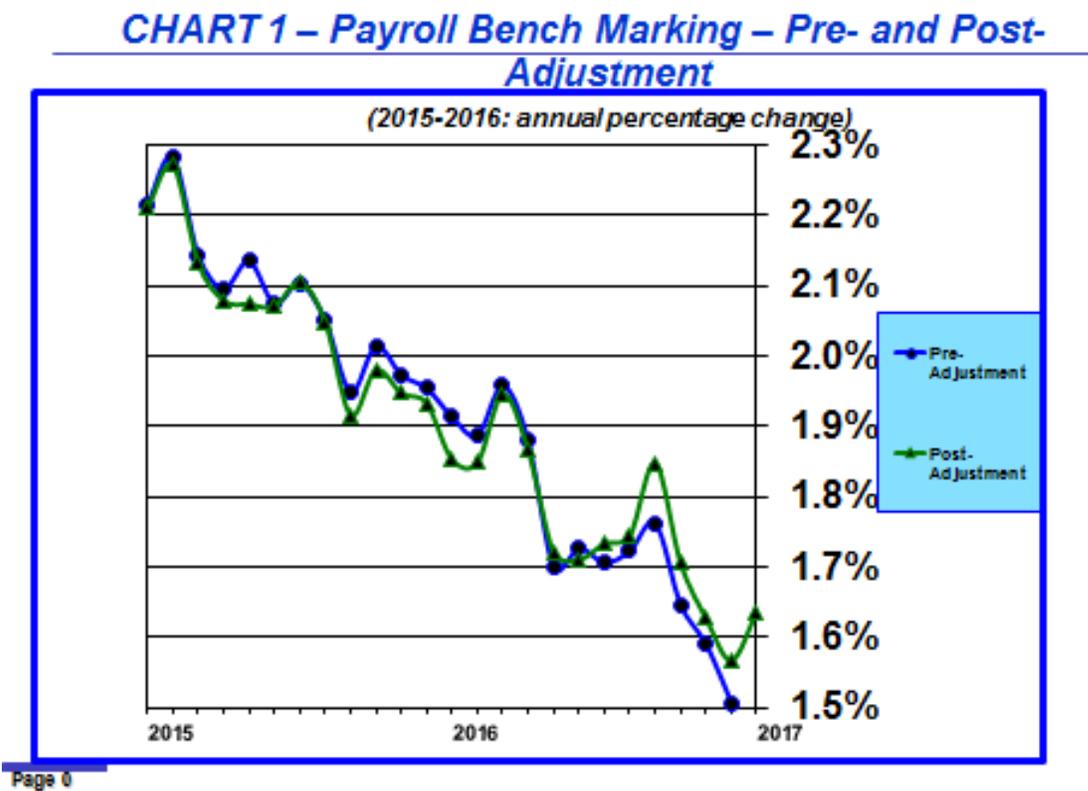
¹³Ezra Klein. “Donald Trump Is Dangerous When He’s Losing,” Vox, February 22, 2017.

White House, furious at the manifold enemies he blames for his failures, and cocooned within an ever-smaller and more radical group of staffers and media outlets that tell him what he wants to hear and feed his grievances and resentments.” And, we know that a cornered rat is a very dangerous beast.

III. Payroll Employment Data Revision

During January of every year the Bureau of Labor Statistics (BLS) benchmarks payroll employment data for the previously ten years. In some years the adjustments to historical payroll data can be substantial. That was not the case with this year’s benchmarking, which involved only modest revisions.

This is done annually and involves two kinds of adjustments. The most important adjustment encompasses updating payroll employment data from April 2015 through March 2016 to incorporate more detailed information from the Quarterly Census of Employment and Wages, which collects data on jobs covered by the Unemployment Insurance tax system. **Chart 1** compares the pre- and post-adjustment annual growth rates.



It is evident in **Chart 1** that payroll growth has slowed steadily over the past two years. Benchmarking did not change this trend. Benchmarking, however, lowered the rate of growth slightly during the second half of 2015 and raised it a little during the second half of 2016.

Annual bench marking also involves recalibrating monthly seasonal adjustment factors. Ordinarily, this adjustment covers the previous five years — 2012-2016. In this year’s benchmarking there were some other

minor adjustments that changed data from 2007-2011 as well.

IV. Congressional Budget Office (CBO) Data Revisions

In either late January or early February the Congressional Budget Office (**CBO**) updates its ten-year federal budget forecast. **CBO** bases its budget forecasts on current law and thus revisions will reflect the expected impact of any legislation enacted since **CBO**'s previous update. In addition, **CBO** updates key economic assumptions that affect forecast tax revenues, spending and the size of the federal debt and interest expense on that debt. **CBO** updates its forecast twice annually. The January update drops the most recently completed fiscal year (2016) and adds a fiscal year (2027).

CBO combines data from congressional legislation covering taxes and spending with projections of economic variables to determine federal revenues and expenses for the next ten years. The difference between its projections of revenues and expenses is its forecast of the annual budget deficit (once in a very great while it is a surplus). This exercise requires **CBO** to project key economic variables including population, employment, GDP, inflation, interest rates, housing prices, income, profits, productivity and several other measures.

Some of the perplexing data forecasts, such as employment growth, which were included in the August 2016 update, modified considerably. Overall, **CBO** forecasts are much closer now to those of others, including mine, although **CBO** will always be constrained by current law even when it is highly likely that Congress will change current law.

1. My Econometric Model and Scenarios of the Future U.S. Economy

Before examining **CBO**'s economic data revisions and commenting on the implications, it may be helpful to describe briefly how I construct my economic scenarios since they can serve not only as a means of making my own forecasts but can also test the soundness of forecasts made by others.

a. Forecasting Perils

Forecasts can be made for individual economic variables or they can be derived from more complex models that attempt to measure the interaction of many variables, the flow through effects of feedbacks and time lags, and the impacts of policy interventions.

Few economists attempt to create their own complex forecasting models and instead either make estimates of economic variables based upon their experience and intuition or rely on "canned" econometric models prepared by others. There are risks to both methods. The "educated guesses" may be well conceived and reasonable, but much of the time the easier and safer approach is to make a forecast that differs little from the consensus of others.

Complex interactive models reduce the risk of overlooking linkages and feedback effects and, arguably, provide more reliable forecasts. However, models generally have two limitations. First, models generally

have a fixed architecture. For example, the architecture of most of the commercially-available econometric models, as well as the Federal Reserve's model, is built around a DSGE — dynamic stochastic general equilibrium — architecture which assumes that over time the economy will always revert to a general equilibrium. These models did not work particularly well in foreshadowing the Great Recession — partially because they did not include non-rational behavioral phenomena and partially because they did not incorporate adequately the interaction between activity in financial markets and real economic activity.

Second, forecasting outputs of models rely upon stochastic equations of historical data relationships. Forecasting outputs will be dependable if the current structure of the economy and relationships among economic variables are similar to the historical structure and relationships upon which the model's predictive equations are based. Significant changes, such as in the structure of the economy stemming from technological innovations, societal culture influencing behavioral responses, or political governance, can change relationships among economic variables in ways that are not captured particularly well, if at all, in stochastic equations based upon historical data. All models, including my own, suffer from the risk that the past is not a good predictor of the future.

b. Integrate Model Outputs With Logical Analysis and Critical Thinking

For these reasons I have long argued that the forecasting outputs of models need to be combined with rigorous logical analysis of current developments and trends which are often not captured well or at all in models based on historical data.

One can see the wisdom in these cautions about economic models and reliance upon the stability of past relationships by asking why virtually the entire professional academic and policy establishment missed the dramatic slowdown in real potential GDP growth (see **Chart 2** below). Real potential GDP growth depends upon growth in total hours worked and productivity. The establishment missed significant changes in the behavior of both variables which have persisted long enough that they can no longer be dismissed as temporary cyclical casualties of the Great Recession.

c. Persistence of Lower Than Expected Growth in Total Hours Worked

Debate among academicians and policymakers about the decline in the growth rate of total hours worked is more advanced than debate about the causes in the collapse of productivity. The emerging consensus is that the “surprising” decline in the labor participation rate is not surprising at all when cultural changes and demographic trends are factored in. This has resulted in a new consensus that total hours worked will grow about 0.5 percent annually in the long run compared to a 0.9 percent growth rate in the population. This means that there will be a steady decline in the employment participation rate. While this development has negative implications for the long-term solvency of social welfare programs, such as social security and Medicare, general agreement that this will be a persistent phenomenon dilutes the typical tendency to engage in denial and spurs two types of policy debates. First, policymakers begin to examine how to respond to the consequences because they can no longer assume that the problem will be self-curing. Second, policymakers can explore ways to boost the employment participation rate through a variety of initiatives, such as free community college tuition and government infrastructure investment. Both of these potential policy changes are likely to be proposed by the Trump Administration and considered by

Congress in coming months.

d. Persistence of Lower Than Expected Productivity Growth

Productivity debate is at a much earlier state and denial is still the main driver. There is general acknowledgement that long-term productivity improvement has moderated some, but most believe that recent weak productivity, averaging 0.7 percent over the past seven years compared to a long-term average of about 2.2 percent, is an aberration driven by short-term and temporary factors. Thus, most models of economic activity assume that productivity will rise over the next few years to a much higher rate than has prevailed over the past seven years. This is typical of a mean-reversion mentality and assumptions embedded in standard econometric models. However, the expected rebound has yet to materialize. The persistence of poor productivity as the economy approaches full employment is eroding complacency and denial and debate about the causes and future course of productivity is building. As I said, these debates are still at an early stage and thus there is less of a consensus about appropriate policy responses. However, there is growing global sentiment that greater government intervention may be warranted through fiscal spending programs. This sentiment is also being influenced by the failure of monetary policy to lift potential economic growth rates.

Table 1 shows average productivity over past time periods, as well as projections of future productivity. Over the 50 years from 1955-2004 productivity rose 2.19 percent annually. In the 12 years from 2005 to 2016 productivity has risen 1.24 percent annually. **CBO** assumes partial mean reversion to an average annual productivity gain over 2021-27 of 1.78 percent. Over the same time period I assume productivity averages 1.50 annually in my “**BASE**” scenario and 1.74 percent in my “**Strong Employment**” scenario. I have also constructed an alternative “**Low Productivity**” scenario in which productivity rises 1.35 percent annually during this period.

Table 1
Historical Average Productivity and Forecasts — CBO, “BASE,” “Strong Employment,”
and “Low Productivity”

	1955-2004	2005-2016	1955-2016	2021-2027	2017-2020
Actual	2.19	1.24	2.01		
CBO				1.78	1.68
BASE				1.50	1.52
Strong Employment				1.74	1.67
Low Productivity				1.35	1.30

e. Bill’s Approach to Econometric Modeling

Like other econometric models, I construct predictive equations for key economic variables based on logical relationships with other available data measures and estimate the parameters of these equations based upon historical data. So, in that regard, my modeling is subject to the same historical structural rigidity risks as are inherent in other econometric models. I do adjust for historical structural shifts. This limits the likelihood that forecasts are flat out wrong right out of the box, but does not accommodate the possibility of future structural shifts or those that might be underway but are too recent to be visible in the data.

This is why logical analysis of current developments is important. It is always appropriate to raise the question of whether economic relationships are shifting and what potential impact such shifts might have on model forecasts. Thus, it is always important to consider the viewpoints and analytical justifications offered by others, even when they might be considered to be far-fetched.

In addition to the risk of structural changes in the relationships among economic variables, there is ever present the potential that the historical equations do not properly define the underlying relationships. In economists' jargon, this is called "specification error." For example, it is accepted theory that employment influences inflation. When unemployment is low, labor becomes scarce, labor's wage bargaining power increases, wages grow more rapidly, and inflation pressure builds. Economists refer to this relationship as the "Phillips Curve." But, although there is logic in the relationship between employment and inflation, there is not set agreement as to exactly how that relationship will play out. There are timing lags, changes in labor bargaining power, shifts in the composition of the labor market and other factors which may or may not be important to include in specifying the statistical impact of employment on inflation. I have a methodology, which differs in details from the methodology of others. I do not claim that my methodology is better or best. But, I do regularly review my methodology and change it when there is additional information that I judge to be relevant.

Like others, the historical data inputs I use come from publically available data sources. However, when it comes to forecasting values for economic variables I do have choices. I can accept the forecasts of others or I can make my own, either arbitrarily based on logic and "common sense" or derive them through modeling. The only forecasts of data from others I use as model inputs come from **CBO**. These data inputs are limited to historical (not future) growth in potential real GDP, non-inflation increasing rate of unemployment (NAIRU) — both historical and future, future growth in the non-institutional population, future growth in the eligible labor force, and the annual federal budget deficit over the next ten years. I could provide arbitrary assumed values for each of these variables in my model, but have chosen to rely on **CBO**'s expertise.

In addition, I provide arbitrary assumptions for several variables, which I judgmentally vary for each economic scenario. These include: payroll employment, oil prices, housing prices, stock prices, business investment growth, and government investment growth. I can choose values for anyone of these measures based on the assumptions of others. I have done this for payroll employment growth in the "**BASE**" scenario where I have replicated **CBO**'s January 2017 forecast for payroll employment growth. But, I hasten to add that my assumptions for payroll growth differ from **CBO**'s in my other economic scenarios.

Forecast values for all other economic variables are derived from the model itself.

f. Summary Comment

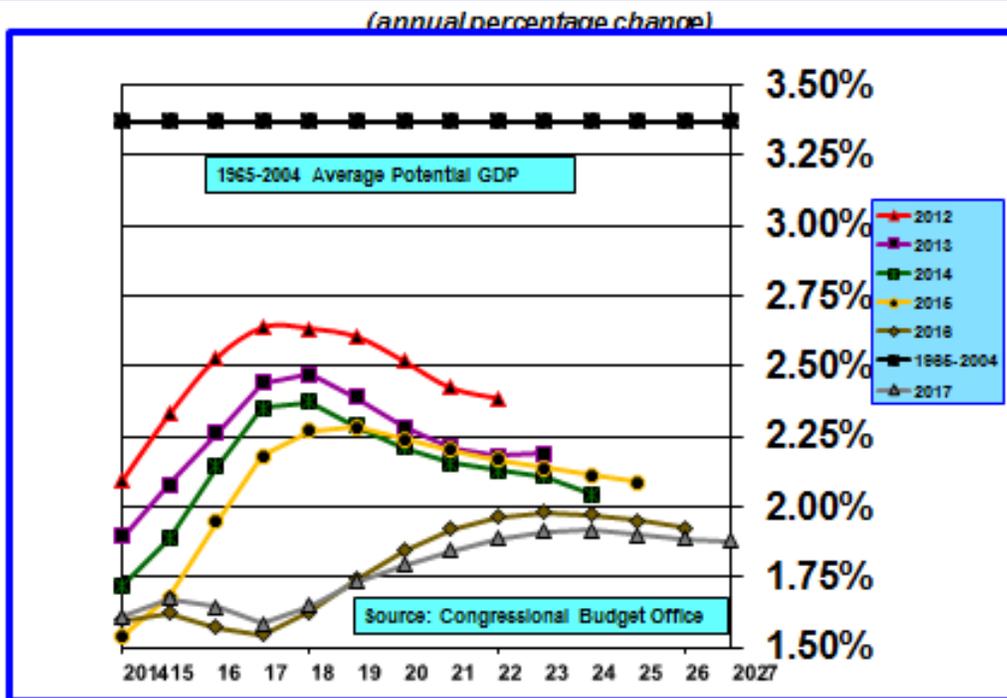
In summary, models can be useful tools, but if their use is not accompanied by critical thinking their data inputs and outputs can be misleading. Keep these observations in mind as I summarize **CBO**'s January 2017 update of its economic assumptions and forecasts. The tendency to engage in "reversion to the historical mean" is present at times as is a tendency to craft data inputs to conform to predetermined views of "what should be."

2. GDP Growth — Actual and Potential

CBO reduced expected 2017 real GDP growth by 0.04 percent and lowered 2018 by 0.20 percent. This continued an ongoing trend of lowering its forecasts with each revision and acknowledges the reality that weak growth is likely to continue.

More importantly, **CBO** once again reduced potential real GDP growth slightly in the long run, although there were small upward revisions in coming quarters. As can be seen in **Chart 2**, reductions in projected potential growth were modest.

CHART 2 – CBO Potential Real GDP Rate of Growth



Page 1

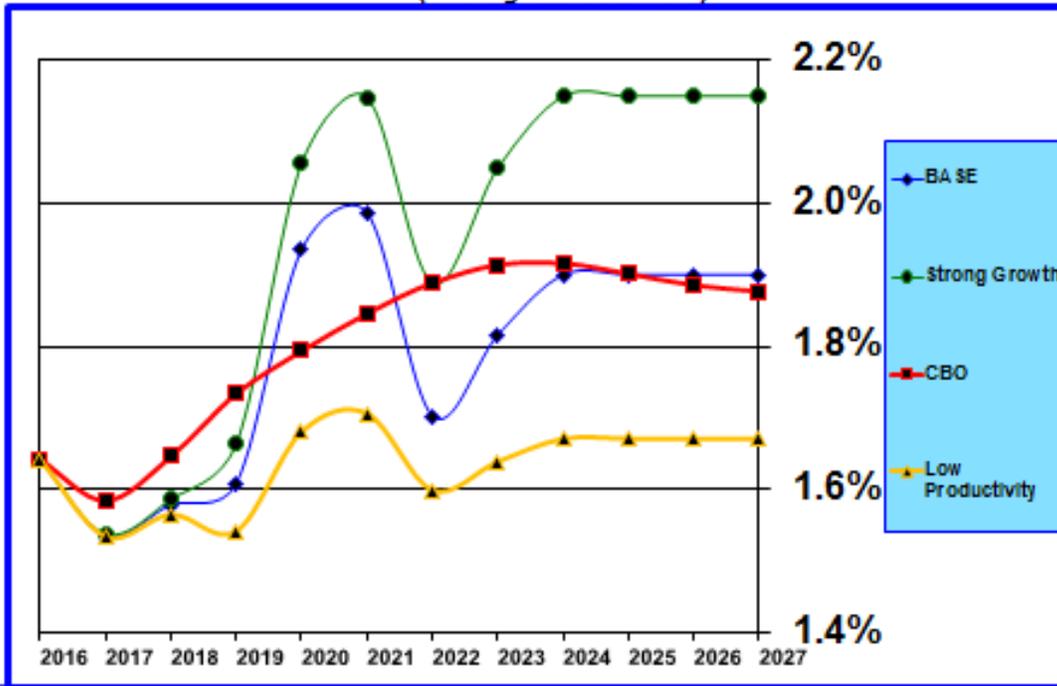
I calculate potential real GDP growth by combining assumptions about potential growth in total hours worked and productivity. **Chart 3** compares my potential GDP growth projections for my “**BASE**” and “**Strong Employment**” scenarios with **CBO**’s January 2017 projections.

Notice that my “**BASE**” potential real GDP is very similar to **CBO**’s. That is because my assumptions about growth in total hours worked and productivity are virtually the same as **CBO**’s during this time period.

My somewhat lower projection of potential real GDP growth over the next two years is due to my less optimistic assumptions about productivity growth that flow directly from recent experience. Unlike **CBO**, I am not optimistic that productivity will bounce back quite as quickly. Productivity assumptions are shown in **Chart 4**.

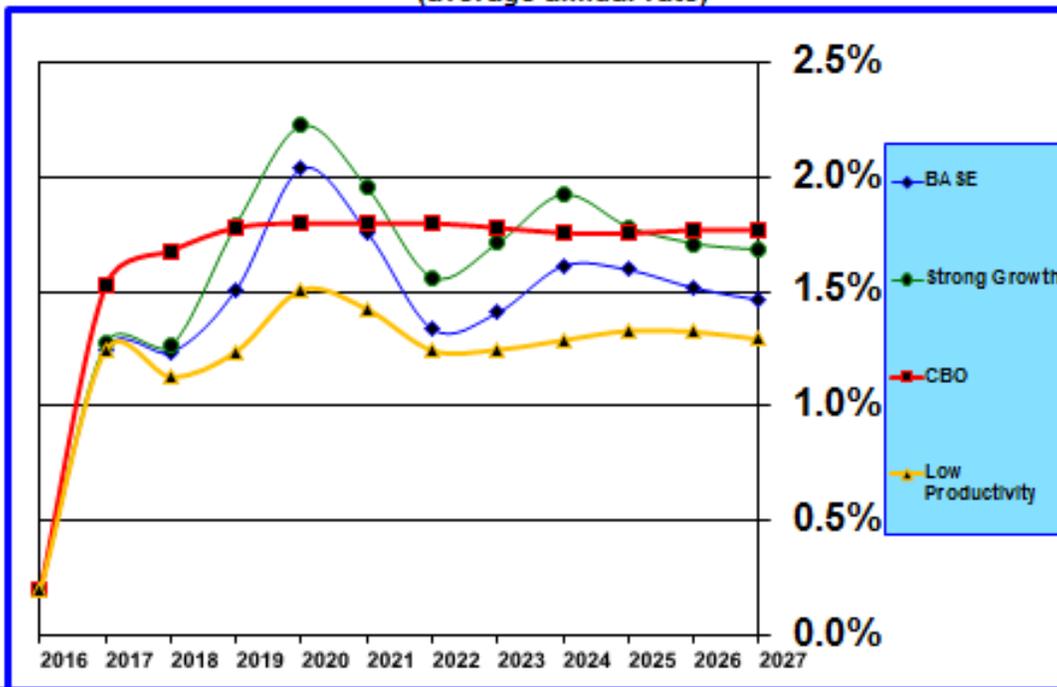
CBO revises its estimates of potential real GDP retroactively as well. This means that the historical

CHART 3 – Potential Real GDP Growth
(average annual rate)



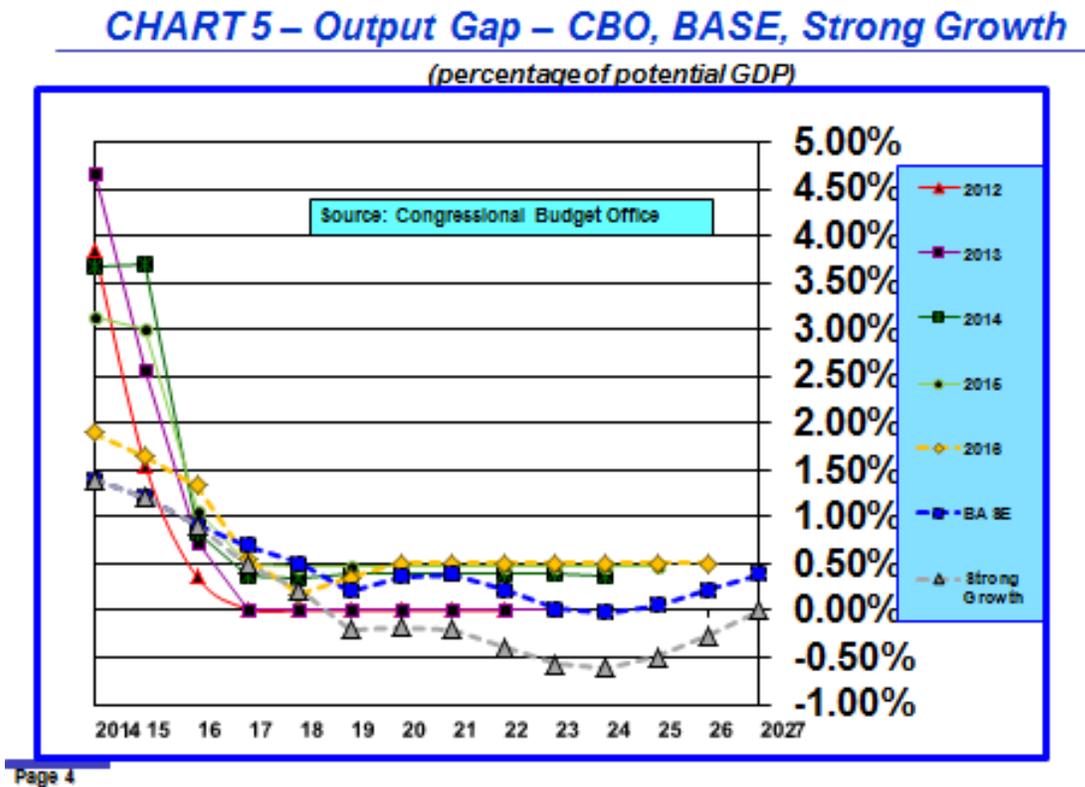
Page 2

CHART 4 – Productivity
(average annual rate)



Page 3

output gap, defined as the difference between potential and actual real GDP, can change. **Chart 5** shows **CBO**'s calculated output gap for the past few years as well as my estimates for the “**BASE**” and “**Strong Employment**” scenarios.



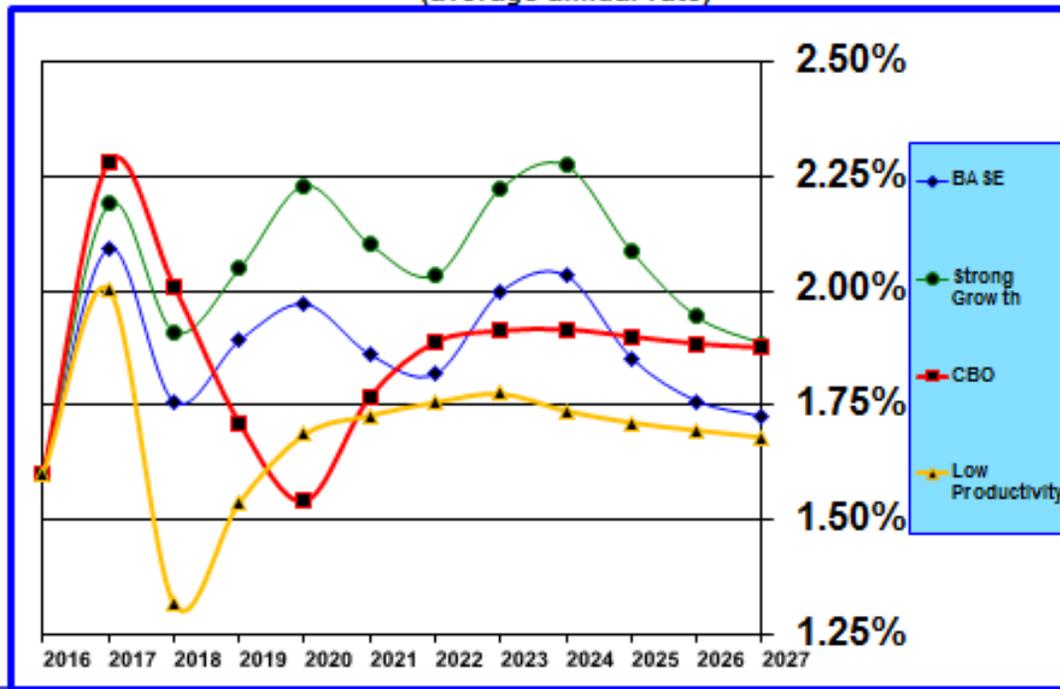
CBO's January 2017 estimate of the 2013 output gap is now 2.21 percent, but in 2012 its estimate of the 2013 output gap was 6.04 percent. Almost all of the decrease in the size of the 2013 output gap has been caused by **CBO**'s retroactive reduction in potential real GDP for 2013. I do not attempt to estimate the current output gap, preferring instead to accept **CBO**'s measure of the current output gap. I also accept **CBO**'s retroactive adjustments. The divergence between my measures of the output gap and **CBO**'s measure only occurs in future years and depends on my model's forecasts for actual and potential real GDP. My higher projected output gap results from lower estimates of potential real GDP, as shown in **Chart 3**, but also from even smaller increases in actual real GDP, as shown in **Chart 6**.

Table 2 and **Chart 6** show real GDP growth forecasts for the next several years. Based upon its January 2017 revisions, **CBO**'s real GDP forecasts are now similar to those of others, including my “**BASE**” scenario.

3. **CBO**'s Real GDP Estimates

Notice that my projections for real GDP in my “**BASE**” scenario track **CBO**'s very closely for 2021-2027, but differ somewhat from 2017 to 2020. These near-term differences appear to be rooted in **CBO**'s employment growth assumptions, which I incorporate in my analysis of the “**BASE**” scenario, and higher

CHART 6 – Actual Real GDP Growth
(average annual rate)



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Table 2
Actual Real GDP Growth Rate Forecasts

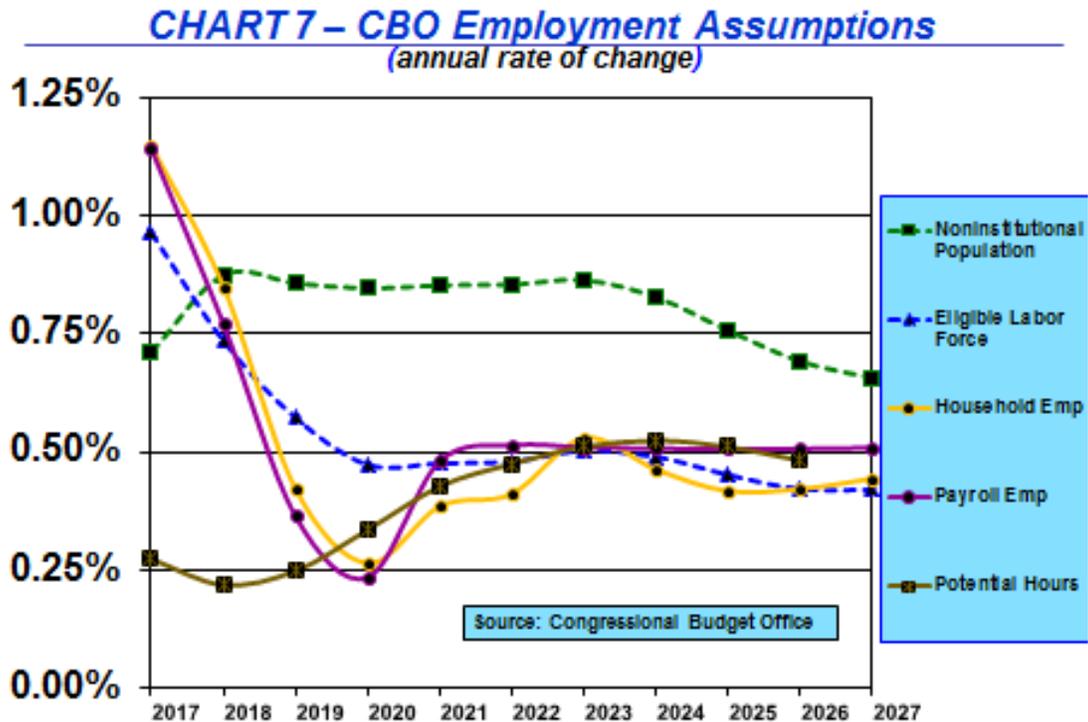
	2017	2018	2019	2020	2021	2022	2023	2024	2025
CBO	2.28	2.01	1.71	1.54	1.77	1.89	1.91	1.92	1.90
B of A	2.14	2.36	1.99	1.69	1.69	1.69	1.69	1.69	1.69
GS	2.26	2.24	1.88	1.75	1.75	1.75	1.75	1.75	1.75
Fed High (Q4/Q4)	2.30	2.20	2.00					Long	2.00
Fed Low (Q4/Q4)	1.90	1.80	1.80					Term	1.80
BASE	2.09	1.76	1.89	1.97	1.86	1.82	2.00	2.03	1.85
Strong Employment	2.19	1.91	2.05	2.23	2.10	2.03	2.22	2.27	2.09
Low Productivity	2.00	1.32	1.54	1.69	1.73	1.76	1.78	1.74	1.71

productivity, which I do not incorporate in my analysis. While **CBO** indicates that its higher productivity assumption is based on potential, it appears to have used its estimate of potential productivity in calculating its forecast of actual real GDP in 2017 and 2018.

4. CBO’s Employment Assumptions

Some of **CBO**’s estimates of employment growth in its August 2016 update didn’t make a whole lot of sense. Payroll employment growth plunged to nearly zero before rebounding. This pattern appeared to

be contrived to force a return to a long-term stable real GDP output gap of 0.5 percent (see **Chart 5**). By lowering the historical output gap in its January 2017 update, **CBO** was able to maintain its long-run stable real GDP output gap assumption of 0.5 percent without forcing employment growth to zero in coming months. Thus, as can be seen in **Chart 7**, the January 2017 employment assumptions now appear much more reasonable and the large differences between my projections for various economic variables and those of **CBO** have largely disappeared.



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There are other interesting observations about the data in **Chart 7**. Growth in all employment measures converges to approximately 0.4 to 0.5 percent after 2020. Growth in the non-institutional population is the outlier. In a stable employment environment, this measure should be growing at the same rate as the others. The fact that it is not means that participation in the labor force is declining steadily over time. This is primarily the consequence of an aging population. CBO assumes a participation rate of 62.84 percent at the beginning of 2017. It falls to 60.95 percent by the end of 2027, which amounts to 17 basis points annually or about 280,000 fewer workers annually than would be expected if the participation rate remained constant.

As I mentioned above, I rely on some of **CBO's** assumptions to provide the basic economic inputs for my statistical work. Key among them are data about growth in the non-institutional population and the eligible labor force. I do not use **CBO's** household or payroll employment survey data as basic inputs because these are variables I choose to test in scenario analysis. I do, however, replicate **CBO's** payroll employment projections in my "**BASE**" scenario. Then, I derive estimates of household employment and the unemployment rate from the payroll data. Payroll and household employment are tightly correlated over time.

In the next three years, according to assumptions published by **CBO** in January 2017, growth in payroll employment is projected to fall to 20,000 monthly from 2016's monthly average of 186,833 and then rises back to 65,000 from 2021 to 2027. Long-term monthly employment growth would be about 90,000, if the participation rate remained constant.

Table 3 compares **CBO**'s August 2016 and January 2017 assumptions for various measures of employment.

Table 3
Comparison of CBO August 2016 and January 2017 Assumptions for Various Measures of Employment

		August 2016	January 2017	Pct. Change
Non-institutional Population Growth	2021-26	0.915%	0.807%	-.108%
Eligible Labor Force Growth	2021-26	0.534%	0.470%	-.064%
Household Employment Growth	2021-26	0.542%	0.475%	-.067%
Payroll Employment Growth	2021-26	0.518%	0.504%	-.014%
Potential Hours Worked Growth	2021-26	0.488%	0.488%	
Participation Rate	2017	62.64%	62.84%	.20%
Participation Rate	2026	60.10%	61.25%	1.15%
Non-institutional Population	2017	255,067,000	254,866,000	-.08%
Non-institutional Population	2026	279,173,000	276,232,000	-1.05%
Eligible Labor Force	2017	159,775,000	160,163,000	0.24%
Eligible Labor Force	2026	167,778,000	168,746,000	0.54%
Household Employment	2017	152,612,000	152,562,000	-.03%
Household Employment	2026	159,507,000	160,427,000	.58%
Payroll Employment	2017	145,438,000	145,656,000	.15%
Payroll Employment	2026	151,982,000	153,375,000	.92%

The average growth rate over 2021-2026 has slowed for all measures. Growth rates fell less for the eligible labor force and household employment than for the non-institutional population because of the increase in the assumed participation rate. The growth rate in payroll employment fell even less for the same reason but also because **CBO** marked up the starting value to reflect recent strong payroll employment growth.

In its January 2017 update, **CBO** raised its assumed labor force participation rate by 20 basis points in 2016 and by 100 basis points in the longer run, which more than reversed the cut of 50 basis points in the longer run participation rate that occurred in its August 2016 update.

While annual growth in the non-institutional population is now expected to be just 0.81 percent, which means the population is now expected to grow by about 3 million people over the next ten years, the eligible labor force is expected to increase by about 1 million due to higher expected participation. Household employment also increases by nearly 1 million and payroll employment is 1.4 million higher.

CBO increased its long-run assumed rate of growth in the employment cost index (ECI) by 2 basis points to 3.08 percent.

5. CBO's Interest-Rate Projections

CBO reduced short-term interest rate assumptions to better match market expectations and acknowledge the “lower for longer” expectations that have emerged from a permanently lower neutral rate. It now assumes that short-term interest rates will rise slowly to 0.5 percent by the first quarter of 2017, 1.0 percent by the end of 2017, 1., 2.4 percent by the end of 2019 and edging up further to 2.8 percent in the longer run., 2.4 percent by the end of 2019 and edging up further to 2.8 percent in the longer run. Longer-term rates also rise very slowly and top out at 3.6 percent, which is a 50 basis points reduction from its previous assumption.

6. CBO's Fiscal Projections

Overall the 10-year aggregate budget deficit did change from the August 2016 revision to the January 2017 revision. Annual deficits were slightly lower from 2017 to 2021 and a little higher from 2022 to 2026. The long-term interest rate was reduced from 3.63 percent to 3.60 percent and the short-term rate was reduced from 2.84 percent to 2.80 percent.

V. Components of U.S. Real GDP

According to the Bureau of Economic Analysis' “**Advance Estimate**,” real GDP grew 1.9 percent in the fourth quarter.

While the trend in growth over the past several quarters has been one of gradual deterioration in growth, this downward pattern may be stabilizing and might even reverse in coming quarters if the burst in optimism following Donald Trump's election as president translates into stronger economic activity. Thus, the relevant question for 2017 is whether policies of the Trump Administration and the newly emergent spirit of optimism combine to reverse the recent trend.

Data in **Table 4** and **Chart 8** paint a graphic picture of progressively decelerating growth over the past six quarters, even including the relatively strong third quarter. Markets are notorious for emotional overreaction. The question one should ponder is whether Trump's election marks a true turning point or whether the recent euphoria will prove to be misplaced and yet another episode of wishful thinking is not validated by subsequent events.

Recent survey data indicate that animal spirits have been unleashed. Typically, this prompts increased risk taking and willingness to act rather than to wait-and-see. Significant shifts in sentiment can have dramatic impacts on economic activity — both favorable and unfavorable. But sentiment shifts based upon expectations can have short time spans unless the expectations are ratified by substantive policy actions that impact economic activity.

Currently, market participants are expecting the Trump Administration to roll back regulatory impediments to economic activity and for Congress to enact significant tax reform and fiscal stimulus programs. While there certainly is considerable merit to these expectations, the anticipated benefits could fall short for several reasons. First, the full extent of expected changes may not become law and policy. Second,

Table 4
Composition of 2016 and 2015 Quarterly GDP Growth

	Fourth Quarter 2016 Advance Estimate	Fourth Quarter 2016 Preliminary Estimate	Fourth Quarter 2016 Final Estimate	Third Quarter 2016	Second Quarter 2016	First Quarter 2016
Personal Consumption	1.70%			2.03%	2.88%	1.11%
Private Investment						
Nonresidential	.30%			.18%	.12%	-.44%
Residential	.37%			-.16%	-.31%	.29%
Inventories	1.00%			.49%	-1.16%	-.41%
Net Exports	-1.70%			.85%	.18%	.01%
Exports	-.53%			1.16%	.21%	-.09%
Imports	-1.17%			-.31%	-.03%	.09%
Government	.21%			.14%	-.30%	.28%
Total	1.88%			3.53%	1.41%	.84%
Final Sales	.88%			3.04%	2.57%	1.25%
Private	.67%			2.90%	2.87%	.97%
Private Domestic	2.37%			2.05%	2.69%	.96%

timing lags for law and policy changes to have substantive impact may take much longer than expected. Third, and probably most importantly, the impacts of the change in sentiment, such as a stronger dollar and higher interest rates, and the prospective consequences of fiscal stimulus and reforms, could spur feedbacks that limit the expected favorable impacts on growth or might even foster disruptive consequences.

When market optimism overshoots, as may be the case currently, it is usually because the potential negative forces at work in the economy have been discounted or because the potential consequences of the feedbacks unleashed by the sentiment shift are not understood and thus not anticipated.

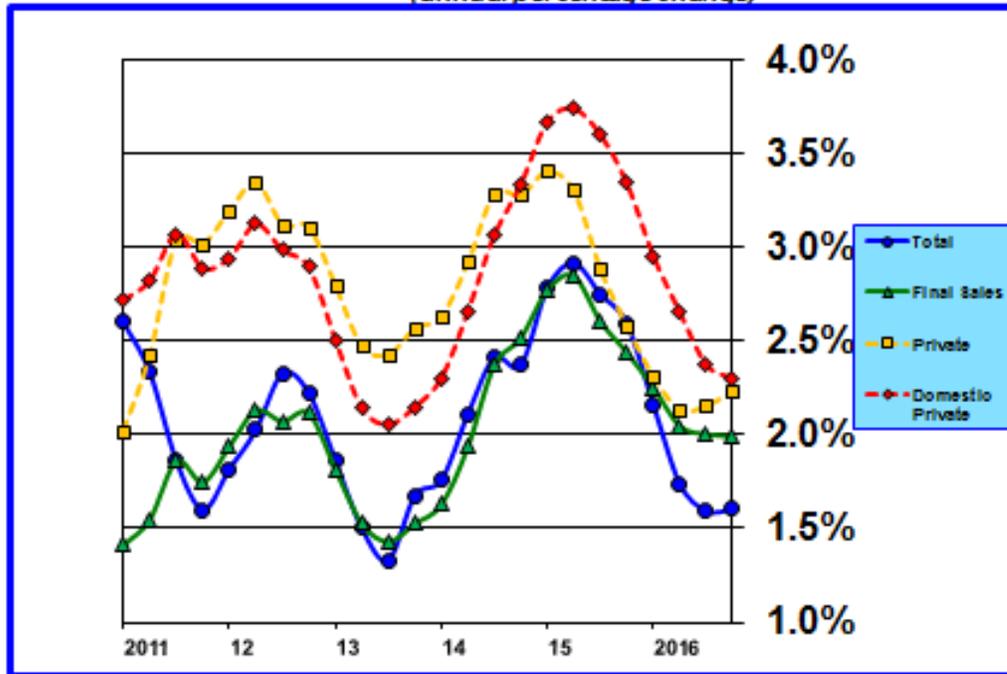
1. “Advance Estimate” of Fourth Quarter GDP

Annualized fourth quarter real “**Total**” GDP growth in the “**Advance Estimate**” was 1.88 percent (blue line with circles in **Chart 8**). Alternative GDP measures, shown in **Table 4** and **Chart 8**, reveal that economic growth was skewed by large anomalous changes in inventories and net exports. In particular, the outsized change in net exports from adding 0.85 percent to real growth in the third quarter to subtracting 1.17 percent in the fourth quarter — a total swing of 2.02 percent — makes all fourth quarter GDP growth measures, with the exception of “**Private Domestic**,” virtually meaningless

“**Final Sales**” omits inventory changes which tend to be volatile over the cycle, rising when the economy slows and falling when the economy accelerates (green line with triangles in **Chart 8**). This measure of real GDP was 0.88 percent in the fourth quarter because inventory restocking added 1.00 percent following on the heels of the second quarter’s rare outright decline in inventories which subtracted 1.16 percent from second quarter real GDP growth. Netting out inventories, growth in “**Final Sales**” slowed from 3.04

CHART 8 – Real GDP Growth – Alternative Measures

(annual percentage change)



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percent in the third quarter to 0.88 percent in the fourth quarter. As mentioned in the previous paragraph, because of the extreme volatility of contributions of net exports to growth in both the third and fourth quarter, the comparison of third and fourth quarter growth rates for “**Final Sales**” is of little value.

“**Private**” GDP is a measure of non-governmental economic activity. It omits both inventory changes and government investment spending (yellow dotted line with squares in **Chart 8**). Growth in government expenditures rises during periods of economic weakness and falls during periods of strength or when fiscal austerity is the order of the day. Growth in “**Private**” GDP was greater than growth in “**Total**” GDP during 2011, 2012, 2013 and 2014, a period when fiscal policy was contractionary. Since 2015, with the exception of the second quarter of 2016, fiscal policy has been mildly supportive of “**Total**” real GDP growth. Government activity added 21 basis points to “**Total**” real GDP growth during the third quarter. “**Private**” GDP growth was 0.67 percent in the fourth quarter and 2.90 percent in the third quarter. Again, the quarterly comparison is not meaningful because of the volatility in net exports.

“**Private Domestic**” GDP is a measure of domestic non-governmental economic activity. It omits inventory changes, government investment spending and net exports (red dotted line with diamonds in **Chart 8**). Since mid-2014 net exports have depressed “**Total**” real GDP growth. That development has flowed directly from the stronger dollar and was corroborated by the slowdown in industrial production and manufacturing, which are more directly linked to international trade than other sectors of the economy. Like inventories, net exports typically are highly volatile on a quarterly basis. This was particularly the case in the third and fourth quarters as net exports inflated “**Total**” GDP by 85 basis points in the third quarter and subtracted 117 basis points in the fourth quarter. Netting out the impact of net exports,

annualized “**Private Domestic**” GDP declined from 2.69 percent in the second quarter to 2.05 percent in the third quarter and rose to 2.37 percent in the fourth quarter.

Thus, when the noise of inventories, government and net exports is swept out of the way, fourth quarter annualized real GDP was modestly higher than the same measure in the third quarter and 49 basis points better than the topline measure of “Total” GDP growth.

There are four takeaways from **Chart 8**. First, all four measures of real GDP growth peaked in either the first or second quarter of 2015. Second, the deteriorating trend appears to be slowing and one measure, “**Private**,” has begun edging up. Third, “**Private**” GDP growth, which omits government spending and inventory accumulation, grew more rapidly than “**Total**” GDP during 2011-2014, converged during 2015 but then began to grow slightly more rapidly again during 2016. Fourth, “**Total**” GDP growth has been consistently dragged down by a higher growth rate in net foreign sales. This differential has worsened in the last two years because of strong dollar appreciation that has boosted domestic demand for imports and depressed foreign demand for exports.

Table 5 provides numeric year-over-year data (four-quarter rolling average) for the four measures of GDP shown in **Chart 8**. **Table 5** also includes year-over-year data showing the year-over-year growth rates for key components of real GDP — personal consumption, nonresidential investment, residential investment, net exports, and government.

Deceleration in economic activity over the past six quarters is evident in most measures of real GDP. The decline in “**Total**” GDP is greater than the decline in “**Final Sales**,” reflecting slow growth in inventories. And, if most analysts are on the mark in expecting long-run potential real GDP to increase annually in a range of 1.7 to 2.0 percent, the “**Final Sales**” year-over-year growth rate of 1.99 percent in the fourth quarter may still have room to fall further now that the economy is close to full employment.

Growth in personal consumption, nonresidential investment and residential investment, which collectively contribute 86.1 percent to “**Total**” GDP, has weakened steadily over the past six quarters.

Slowing real personal consumption growth in recent quarters seems premature given strong employment gains and small increases in wages, but is not surprising given the downward trend in real disposable income growth from 3.9 percent in the third quarter of 2015 to 2.8 percent in the fourth quarter of 2016. In fact as should be expected, the decline in real personal consumption growth parallels the decrease in real disposable income growth. This means that the much ballyhooed increase in employment in excess of underlying fundamental expansion of the labor force in recent months has not been accompanied by commensurate increases in spending, which is what should have been expected in a normal cyclical recovery in employment and economic activity. Again, the data reflect a weakening trend.

Weakness in nonresidential investment is particularly worrisome because strong productivity gains in the long run depend on robust investment spending growth. Recent weakness is due in part to the decline in oil prices and the collapse in energy investment, but the declining trend in nonresidential investment is much broader-based than energy. With the recent surge in business optimism there is some reason for optimism; however, capacity utilization is quite low, which does not bode well for robust investment activity.

Residential investment growth has been a bright spot, but accounts for only 3.6 percent of “**Total**” GDP. And, growth in this component of GDP has slowed over the last four quarters.

Table 5
Year-Over-Year Growth Rates for Components of Real GDP

	GDP Component Weight	Fourth Quarter 2016	Third Quarter 2016	Second Quarter 2016	First Quarter 2016	Fourth Quarter 2015	Third Quarter 2015
Personal Consump- tion	69.1%	2.68%	2.61%	2.70%	2.86%	3.18%	3.42%
Private Investment	17.0%						
Nonresi- dential	13.2%	-.43%	-.30%	.33%	1.08%	2.07%	3.10%
Residential	3.6%	4.90%	7.83%	10.77%	12.11%	11.70%	9.98%
Net Exports	-3.4%	4.02%	8.13%	17.23%	21.68%	26.83%	26.60%
Exports	12.8%	.37%	-.56%	-1.14%	-.66%	.11%	1.42%
Imports	-16.2%	1.11%	1.12%	2.21%	3.26%	4.58%	5.48%
Govern- ment	17.5%	0.87%	1.30%	1.65%	1.97%	1.79%	1.32%
Total	100.0%	1.60%	1.59%	1.74%	2.16%	2.60%	2.75%
Final Sales	99.9%	1.99%	2.00%	2.05%	2.25%	2.44%	2.61%
Private	82.4%	2.23%	2.16%	2.13%	2.31%	2.58%	2.89%
Private Domestic	85.8%	2.30%	2.38%	2.66%	2.96%	3.34%	3.60%

Overall, as the economy verges on full employment, the deceleration in real GDP appears to be ratifying forecasts of meager potential growth in the range of 1.7 to 2.0 percent. Perhaps, as the market expects, the proposed fiscal policies of the Trump Administration will reverse the trend.

Rising wealth boosts personal consumption spending. Over the last 12 months, rising wealth contributed approximately 30.9 percent of the growth in real consumer spending — 24.4 percent from rising stock prices and 6.5 percent from rising home prices.

Obviously, a decline in stock prices would have a negative impact but not an immediate impact because the wealth effect feeds into consumer spending over a considerable period of time. Based upon my econometric model, a 10 percent instantaneous decline in stocks prices that remains in place for the next 24 months would reduce the increase in real consumer spending by 20 percent over the next 12 months and by 12 percent over 24 months. This would reduce real GDP by 0.3 percent in the next 12 months and 0.2 percent in the following 12 months.

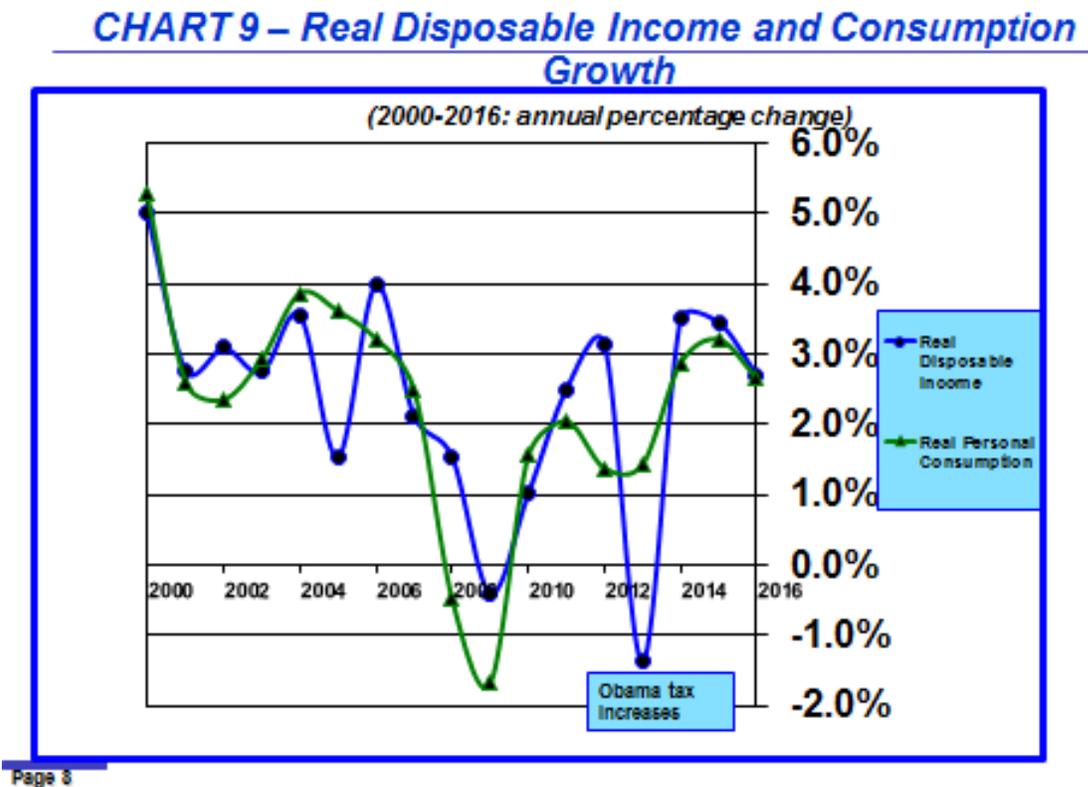
And, none of this factors in the impact of slowing employment growth, although business optimism and fiscal stimulus could offset the natural slowing in employment growth that ordinarily occurs when the economy has reached full employment. Thus, in spite of sunny prognostications by many forecasters, downside risks to real GDP growth in a maturing economy in the face of likely monetary policy tightening are much greater than commonly acknowledged.

2. Consumption

Personal consumption contributed 1.70 percent to fourth quarter real GDP growth compared to 2.03 percent in the third quarter. The year-over-year growth rate rose slightly from 2.61 percent to 2.68 percent, but is little different from the second quarter growth rate of 2.70 percent.

In the long run, growth in nominal disposable income and consumer saving preferences determine growth in nominal personal consumption. Nominal disposable income depends upon a lot of things but the most important ones are the level of employment and wage rates. Tepid growth in employment and in wage rates will result in slow growth in disposable income.

As can be seen in **Chart 9**, over the last year and a half growth in both real disposable income and real personal consumption has slowed slightly. This pattern is reflective of a gradual subsidence in the overall rate of economic growth and mirrors the pattern of slowing real GDP growth shown in **Chart 8**.



Other indicators are sending a similar message of a gradual deceleration in consumer spending growth.

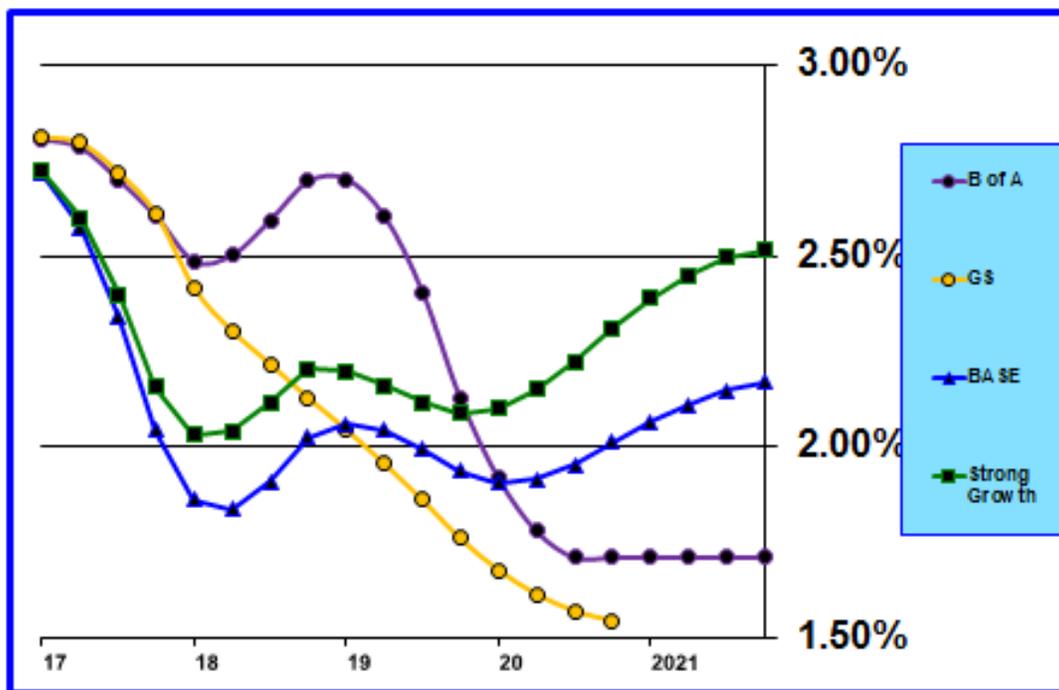
For example, state retail sales tax receipts, which are sensitive to fluctuations in purchases of durables such as autos, have slowed over the last year.

Forecasts of growth in real consumer spending are shown in **Table 6** and **Chart 10**. Real consumer spending increased 2.66 percent in 2016. This is not the final number as several more revisions will occur over the next few years.

Table 6
Real Personal Consumption Growth Rate Forecasts

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Actual	1.43	2.88	3.21	2.66					
B of A					2.60	2.70	2.13	1.71	1.71
GS					2.61	2.13	1.76	1.55	
Bill's BASE					2.04	2.03	1.94	2.01	2.17
Bill's Strong Growth					2.16	2.20	2.09	2.31	2.52

CHART 10 – Real Consumer Spending Forecasts
(annual rate of change)



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Over the longer run growth in real consumer spending generally should follow growth in employment and growth in real wages (disposable income). Now that the economy is very close to or at full employment, employment growth is set to slow to match underlying demographic dynamics. This is why all forecasters expect real consumer spending growth to slow in coming years.

This is the general pattern apparent in the data in **Table 6** and **Chart 10**. Growth in wages (disposable income) might moderate the forecast decline in growth, but only if the growth rate in real wages (disposable

income) increases. That would require productivity to improve from its recent very low level. That would be a welcome result, but is not at all assured.

GS cites several other reasons why consumer spending growth should slow over the next three years. First, growth in capital-related income accounts, which include income from individual proprietorships, rental properties and interest and dividends, has slowed and that is likely to continue because of slow growth in profits and low interest rates. Second, the benefit from the plunge in oil prices has passed. In addition, real disposable income available for spending will be squeezed increasingly by rising rents and medical care premiums. Third, borrowing is likely to become more difficult as financial institutions begin to tighten credit standards, particularly for auto loans and credit card debt. Credit availability for home mortgages never eased much following the housing bubble. Fourth, pent-up demand for consumer durables, such as autos, has largely been satisfied. Indeed, purchases may already be above the long-term trend level due to easy credit.

My forecasts, shown in the “**BASE**” and “**Strong Employment**” scenarios, reflect slowing growth in 2017 and 2018, but then generally follow the same trend as **GS**’s forecast. My forecasts dip below **GS**’s in 2017, 2018 and 2019, but rise slightly in 2020 and 2021.

In summary, because it is likely that employment growth will slow in coming months and because the cyclical components of consumer spending are deteriorating, the contribution of consumer spending to real GDP growth is likely to decline. In combination with weakening growth in trade and investment, this does not bode well for robust real GDP growth in coming quarters.

But, consumer optimism (reduction in the saving rate) and easy access to credit (leverage) could bolster consumer spending growth for a few more months. Also, the recent surge in consumer and business optimism could boost employment and consumer spending for a period of time and additional fiscal stimulus beginning in late 2017 or 2018 could also raise consumer spending growth.

3. Investment

Real private investment consists of three principal categories — business investment, which is labeled “nonresidential” in the National Income Accounts, residential investment, and changes in inventories. While changes in inventories are volatile from quarter to quarter, over the very long run the growth rate in inventories generally tracks growth in business and residential investment.

Table 7 shows growth rates for real private investment and separately for two of its three principal components — nonresidential (business) and residential investment. Residential investment is 20 percent of total investment, nonresidential investment is 77 percent, and growth in inventories accounts for approximately 3 percent.

Nonresidential investment (business) growth was crushed in 2015 and 2016 by the collapse in oil prices. But investment is down in other sectors as well. As a result, investment growth was negative -0.43 percent in 2016. Recovery in investment growth is expected to occur in 2017, 2018 and 2019 to a level well above average trend growth of 2.36 percent over the last 18 years. In recent weeks, forecaster optimism about investment growth has been rekindled. I have been consistently skeptical in the past about what I felt were overly optimistic forecasts and that skepticism has been merited. I find little reason to jump on

Table 7
Real Private Investment (Residential and Nonresidential) Growth Rate Forecasts

	2013	2014	2015	2016	2017	2018	2019	2020	Ave. 1947-2016
REAL PRIVATE INVESTMENT									
Actual	5.02	5.54	3.90	0.66					3.74
B of A					3.41	5.08	3.95	3.03	
GS					3.65	4.09	3.63	3.12	
Bill's BASE					1.96	2.17	2.27	2.20	
Bill's Strong Growth					2.60	3.03	3.03	3.03	
REAL NONRESIDENTIAL INVESTMENT									
Actual	3.50	6.04	2.07	-0.43					2.36*
B of A					3.55	4.98	3.91	3.03	
GS					3.33	3.48	3.06	2.70	
REAL RESIDENTIAL INVESTMENT									
Actual	11.88	3.49	11.70	4.90					-0.24*
B of A					2.88	5.42	4.10	3.03	
GS					4.83	6.33	5.65	4.58	

*Average 1999-2016; real private investment = 1.56% for 1999-2016

the bandwagon now. I continue to expect that investment growth will remain near the average of the past 18 years.

B of A is optimistic about the outlook for business investment to accelerate in 2017 and particularly in 2018 and 2019 because it expects corporate profits to accelerate, credit conditions to remain benign and uncertainty to diminish. A potential weakness in **B of A**'s business investment model is the possibility of cumulative negative effects over time of low interest rates and depressed innovation, as reflected in a slower rate of new business formation. Also, because firms are operating at less than full capacity, the incentive to invest is dampened.

GS believes that about 50 percent of the non-energy investment spending slowdown has been caused by the collapse in commodity prices and stronger dollar. If this is true, then stabilization in commodity prices and the dollar should contribute to a recovery in investment spending. The forecast rebound in investment spending in 2017 reflects this expectation.

I expect annual business investment growth in coming years to average about the same or a little less than the 2.36 percent annual growth rate that has prevailed since 1999.

Residential investment growth was very strong in 2015. Growth in 2016 slowed considerably but remained well above the long-term trend. Housing inventories are lean and demand is relatively strong, resulting in upward pressure on housing prices. However, oversized housing price increases will eventually dampen single-family residential demand and inventories should improve with the consequence that residential investment growth should slow in coming years. Generally, forecasts reflect this scenario.

Housing starts are still historically low relative to family formation rates. The trend rate in housing starts should be about 1.4 million. However, starts were 1.18 million in 2016, up 6.1 percent from 1.11 million in 2015. Starts are expected to rise only modestly in 2017 and will still be considerably below 1.4

million.

Housing starts were 1.28 million in January 2017, which was 13.4 percent above the pace of January 2016.

4. Inventories

Inventories added 1.0 percent to “**Total**” GDP growth in the fourth quarter after adding 0.5 percent in the third quarter and subtracting 1.2 percent in the second quarter. As can be seen in **Table 8**, real inventory accumulation declined each quarter from the first quarter of 2015 to the second quarter of 2016. Inventory growth was actually negative in the second quarter of 2016. Based on the \$48.6 billion increase in inventories in the fourth quarter of 2016, it appears that the inventory correction may have run its course for the time being.

Table 8
Quarterly Real Inventory Data
(most recent data are in red)

	Advance Estimate	Preliminary Estimate	Final Estimate	First Annual Revision	Second Annual Revision	Third Annual Revision
2016 Q4	48.7					
2016 Q3	12.6	7.6	7.1			
2016 Q2	-8.1	-12.4	-9.5			
2016 Q1	60.9	69.6	68.3	40.7		
2015 Q4	68.6	81.7	78.3	56.9		
2015 Q3	56.8	90.2	85.5	70.9		
2015 Q2	110.0	121.1	113.5	93.8		
2015 Q1	110.3	95.0	99.5	112.8	114.4	
2014 Q4	113.1	88.4	80.0	78.2	76.9	
2014 Q3	62.8	79.1	82.2	79.9	66.8	
2014 Q2	93.4	83.9	84.8	77.1	55.2	
2014 Q1	87.4	49.0	45.9	35.2	36.9	31.7
2013 Q4	127.2	117.4	111.7	81.8	87.2	103.6
2013 Q3	86.0	116.5	115.7	95.6	93.6	109.0
2013 Q2	56.7	62.6	56.6	43.4	39.6	52.6

Inventories generally add between 0.1 and 0.2 percent to annual real GDP growth. Based on the historical record, inventory accumulation in both the second and third quarters of 2016 was anomalous. The 1.2 percent decline due to inventory de-accumulation in the second quarter painted a weaker picture

and the 0.5 percent increase in the third quarter and the 1.0 increase in the fourth quarter painted a stronger picture of “**Total**” GDP growth than long-term trends warrant.

As can be seen in **Table 8**, initial inventory data are crude estimates and are subject to substantial revision over the next three years. This means that the 48.7 billion inventory accumulation fourth quarter “**Advance**” estimate will be revised at least five more times in the next three years.

To add to the data quality problem, quarterly changes are annualized and this can greatly amplify the impact of data errors and contribute to misperceptions about the trend in real GDP growth. Volatile inventory data are especially troublesome in this regard.

There are two ways to gain a better sense of the underlying trend in real GDP growth. One way is to omit highly volatile data, especially data that are subject to substantial subsequent adjustment. That is why many analysts report the growth rate in “**Final Sales**,” which omits inventory data, as I do in **Tables 4** and **5**.

Another method that helps give a better sense of the underlying trend in real GDP growth is to focus on year-over-year growth rates, which are calculated by dividing the average of the most recent four quarters by the average of the preceding four quarters. The result of that calculation methodology is shown in **Table 5** and **Chart 8**. Quarterly data volatility in growth rates largely disappears — the impact of inventories on “**Total**” GDP growth is very small and the growth trends in “**Total**” GDP and “**Final Sales**” are very similar.

Year-over-year growth rates give a much better sense of trends but they do not eliminate entirely the potential for oscillations in inventories to skew the observed trend up or down from the underlying unobservable “true” trend. For example, year-over-year growth in “**Total**” GDP peaked at 2.92 percent in the second quarter of 2015 and has since declined to 1.60 percent in the fourth quarter of 2016. Year-over-year growth in “**Final Sales**” also peaked in the second quarter of 2015 at 2.85 percent but has declined less since then to 1.99 percent in the fourth quarter of 2016 — a total of 86 basis points versus 132 basis points. Both measures indicate GDP growth is decelerating, but without knowing what the “normal trend” contribution of inventories is to GDP, it is unclear whether the level of GDP and GDP growth are too high, which would be the case if inventories remain above the “normal trend” level, or whether the reverse is the case, which would be the case if inventory liquidation has taken inventories below the “normal trend” level.

So, we still are left with the question of whether underlying GDP growth is 1.99 percent, 1.60 percent, or some other number.

And it’s actually even more complicated. While over an entire cycle inventories grow at approximately the same rate as GDP, inventories increase faster during the expansion phase of the cycle and fall more quickly during the contraction phase.

To shed some light on the question of whether inventories are too high or too low requires discerning what the normal trend in inventories is and also determining what phase the inventory cycle is in. Armed with this knowledge we can estimate whether accumulation of inventories over time is above or below trend. That knowledge, in turn, should provide some insight as to whether inventories currently are too high or too low and this analysis will illuminate whether the observed growth rate of “**Total**” GDP is too high, too low, or about right relative to the unobserved “true” trend growth rate.

Data for inventories were not reported separately in the National Income Accounts until 1999. From 1999 through the fourth quarter of 2016 “**Total**” GDP grew at an annual rate of 1.7347 percent and “**Final Sales**” grew at an annual rate of 1.7356 percent. This means that inventories grew only slightly slower than the rest of GDP — approximately 1.3182 percent. A slower growth rate in inventories is reasonable because of steady improvements in inventory management.

Without going into the details of the math, inventories should have contributed \$36.8 billion to “**Total**” GDP in the fourth quarter of 2016. The actual contribution of inventories was \$48.7 billion, which means that inventory accumulation was \$11.9 billion above its trend level in the fourth quarter. But, by itself, this still does not answer the question of whether the overall stock of inventories was too high or too low in the fourth quarter.

We can gain a little more insight by looking at the past several quarters. In 13 of the past 15 quarters (the period covered in **Table 8**), inventory accumulation exceeded the trend level. During this 15-quarter period, \$918.8 billion was added to inventories, but a “normal” trend amount would have been only \$539.0 billion, meaning that an excess buildup of \$379.8 billion remains. This probably overstates the excess amount since we are still in the expansion phase of the business cycle when inventories typically accumulate at an above trend rate. But, even so, this rate of inventory accumulation is an average of \$25.3 billion per quarter, or 69 percent, above the “normal” trend level.

For comparative purposes, a similar 13-quarter cyclical expansionary period occurred from the first quarter of 2004 to the first quarter of 2007. During that period inventory accumulation was \$848.8 billion compared to “normal” trend accumulation of \$412.2 billion, for an excess of \$436.6 billion, or an average excess of approximately \$33.6 billion quarterly. In this context, recent excess inventory accumulation looks reasonable.

Putting this all together, if you are an optimist, inventory accumulation should return to its trend level of about \$37 billion per quarter. If you are a pessimist, the current expansion is getting a bit long in the tooth, which is to say that GDP growth will decelerate in coming quarters as employment growth and consumer spending slow. If that were to occur, inventory accumulation would probably stay at a below trend level in coming quarters.

But, this is a longer-term view and may be swamped in the short run by the surge in optimism that followed Donald Trump’s election as president. Small business optimism reported by the National Federation of Independent Businesses (NFIB) skyrocketed in December to 105.8, the highest level since December 2004. It held steady at 105.9 in January. The substantial improvement in optimism in December was driven almost entirely — 73 percent of the increase — by expectations for better business conditions and improved sales. Another 15 percent of the improvement in December was due to optimism about the climate for business expansion, which reflects at least in part optimism about less intrusive government regulation. Thus, 88 percent of the surge in optimism was based on expectations compared to just 12 percent on realized changes in business conditions.

Improved expectations could turn out to be fleeting. However, the NFIB data strongly suggest that small businesses will act affirmatively commensurate with their improved optimism to increase capital spending. If favorable feedbacks kick into action, improved sales and continued optimism will lift inventory accumulation. So, the stage is set for at least a temporary rebound in inventory accumulation to above long-term trend levels. Slightly above trend Inventory accumulation in the fourth quarter was consistent

with this possibility. However, it is worth noting that NFIB's measure of plans to increase inventories showed no change in December and actually decreased in January. Thus, the evidence remains ambiguous about prospects for greater inventory accumulation in coming months. But, the balance of risks appears to have shifted toward greater inventory accumulation and this in turn boosts prospects for somewhat greater real GDP growth in coming quarters.

5. Net Exports

In the “**Advance Estimate**” net exports subtracted an outsized 1.70 percent from fourth quarter real GDP growth (see **Table 4**). This decrease was extremely unusual and partly reflected a reversal of a huge increase in the third quarter due primarily to a temporary rise in food exports in response to a weak soybean harvest in South America. Growth in exports added 1.16 percent to third quarter real GDP and subtracted -0.53 percent in the fourth quarter. However, the large decrease in net exports in the fourth quarter was also driven by a large increase in imports, which subtracted -1.17 percent from real GDP. Acceleration in imports may be linked to the slight decline in the dollar's value that prevailed for much of 2016 prior to the presidential election.

Net exports is the difference between exports and imports and when reported as a net number obscures underlying trends in exports and imports. Over the long run, both exports and imports should rise in tandem with overall growth in the economy. But, in the short run growth rates can vary. The biggest factor influencing short-term growth rates is the trade-weighted exchange value of the dollar. When the dollar is rising in value, as it did from April 2011 through January 2016 — a period during which the dollar's value rose 37.1 percent, exports become less competitive and growth slows or even turn negative. Correspondingly, imports become less expensive and they grow faster as cheaper imports are substituted for domestically produced goods and services.

This phenomenon can be seen in the year-over-year growth in exports of goods and services from 20 percent in the first quarter of 2011, when the dollar's value troughed, to -2 percent in the fourth quarter of 2016 (**Table 2** shows the trend in export growth for the last six quarters). The reverse trend did not occur in imports, as would be expected all else equal. Year-over-year growth in imports was 23 percent in the first quarter of 2011, but declined 3 percent in the fourth quarter of 2016. All else was not equal as growth in imports was depressed by the substantial decline in commodity prices and the surge in U.S. oil production. The declining growth rate in imports over the last six quarters can be seen in **Table 5**.

Part of the slowing growth in imports is also due to a world-wide decline in trade. The decline in global trade does not appear to be a temporary phenomenon. The declining trend is traceable at least in part to technological advances and the related shift in economic activity toward knowledge-based services, which generally are located near the point of consumption. The decline in trade has not been limited to the U.S.; it is a global phenomenon.

Anti-trade policies seem more likely than not to materialize under the Trump Administration. To the extent that turns out to be the case, the deteriorating trend in U.S. and global trade could worsen.

Since peaking in January 2016, the dollar's trade-weighted value has moved in a narrow range, initially down more than 6 percent but returned to January's peak level in December and January. Higher interest rates, the possibility of stronger real GDP growth, tax reform, and trade restrictions in coming months

could drive the value of the dollar higher. In addition, the waning benefit of lower energy prices on imports should slow and probably reverse the trend growth rate in imports. When these trends and risks are combined they imply downside risk to exports and upside risk to imports with the consequence that the contribution of net exports to real GDP growth in coming quarters should continue to be negative.

6. Government Investment

Government investment added 0.21 percent to fourth quarter real GDP growth. Federal government spending subtracted -.08 percent and state and local spending added 0.28 percent (see **Table 4**).

Government spending ceased to be a negative factor for real GDP growth in 2015 as it had been since 2010. However, government investment contributed a very modest 0.32 percent to GDP growth in 2015 and 0.16 percent in 2016.

Table 9 shows recent growth rates in government spending and forecasts for 2017-2020.

Table 9
Federal and State and Local Investment Spending Growth Rates

	2013	2014	2015	2016	2017	2018	2019	2020
Federal	-5.82	-2.54	0.00	0.59				
State and Local	-0.81	0.23	2.92	1.04				
Total Government	-2.86	-0.86	1.79	0.87				
GS Federal					0.59	1.35	1.22	1.04
GS State and Local					1.40	2.49	2.33	2.09
GS Total					1.09	2.05	1.91	1.69
B of A Total					0.54	0.75		
BASE					1.24	3.56	2.22	0.75
Strong Employment					1.24	3.56	2.22	0.75

Federal government spending growth is likely to increase in coming quarters based upon proposals made during the presidential campaign. Specifics about the timing and magnitude of additional federal government spending remain to be determined by Congress. The spending growth estimates in **Table 9** for the “**BASE**” and “**Strong Growth**” scenarios reflect a front-loading of a \$450 billion ten-year infrastructure investment program assumed to begin in late 2017. After spending reaches a peak level in 2018, annual percentage increases decline and actually fall below the long-run trend level, even though the level of federal government investment spending is higher.

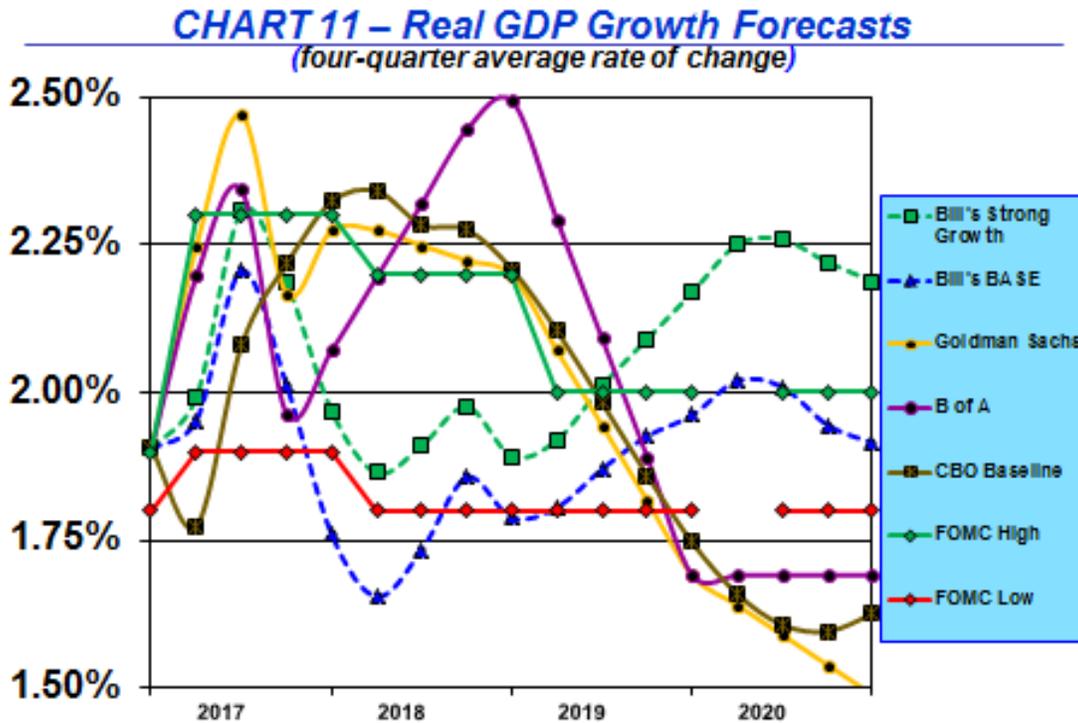
Other forecasters have not yet adjusted their estimates of federal government investment spending growth for prospective congressional legislation to boost infrastructure spending.

7. Fourth Quarter 2016 and Longer-Term Real GDP Forecasts

B of A is forecasting 2.4 percent fourth quarter growth. **GS** currently is projecting 2.3 percent.

Chart 11 show quarterly real GDP growth projections from the fourth quarter of 2016 to the fourth

quarter of 2020. **Table 10** includes annual real GDP growth and forecasts for 2013 to 2020. All forecasts are tightly clustered, although my “**BASE**” and “**Strong Growth**” forecasts are at the lower end of the range during 2017 and 2018, but then move to the higher end of the range in 2019 and 2020.



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Table 10
Real GDP Growth Forecasts
(year-over-year average)

	2013	2014	2015	2016	2017	2018	2019	2020
Actual	1.68	2.37	2.60	1.60				
B of A					2.14	2.36	1.99	1.69
GS					2.29	2.24	1.88	1.56
CBO					2.28	2.01	1.71	1.54
FOMC High*					2.30	2.20	2.00	
FOMC Low*					1.90	1.80	1.80	
Bill's BASE					2.09	1.76	1.89	1.97
Bill's Strong Growth					2.19	1.91	2.05	2.23

*Q4 to Q4 — FOMC year-over-year 2016 equivalent is a range of 1.51 to 1.56 percent, which is in line with other 2016 forecasts

My “**BASE**” scenario is on the lower end of the spectrum in 2017 and 2018 because of lower assumed employment and productivity growth. **CBO**’s forecasts, based upon its recent update, are now generally similar to other forecasts. All forecasts fall within the **FOMC**’s high and low estimates throughout the

2017-2019 periods. Besides the low employment growth embedded in my “**BASE**” scenario, real GDP growth in that scenario and also in my “**Strong Growth**” scenario is depressed by the assumption of continued depressed productivity gains relative to the forecasts of other analysts. While my assumptions may prove to be overly pessimistic, I would suggest to you that the risks are skewed to the downside, and by that I mean that real GDP is more likely to come in under rather than over the forecasts of others in the next few years.

Based on **GS**’s current activity index (CAI), which is scaled to mirror real GDP growth on a continual basis as each new data report and survey become available, 2017 is beginning with strong growth momentum. CAI was 3.0 percent in December.

VI. U.S. Employment Developments

January’s payroll employment gain was 227,000. Considering that the labor market is near or at full employment, this was a very strong number. Gains of this magnitude are unlikely to persist much longer. It is inevitable that monthly payroll growth will converge to the underlying natural rate of growth in the labor force, which currently is in a range of 70,000 to 80,000 monthly. John Williams, president of the San Francisco Federal Reserve Bank believes the monthly trend level is about 80,000 with a range of 50,000 to 100,000, depending upon potential labor force trends and participation.

Job growth has already begun to slow. Monthly employment growth averaged 186,833 in 2016 compared to 226,083 in 2015 and 249,833 in 2014.

1. Employment Growth

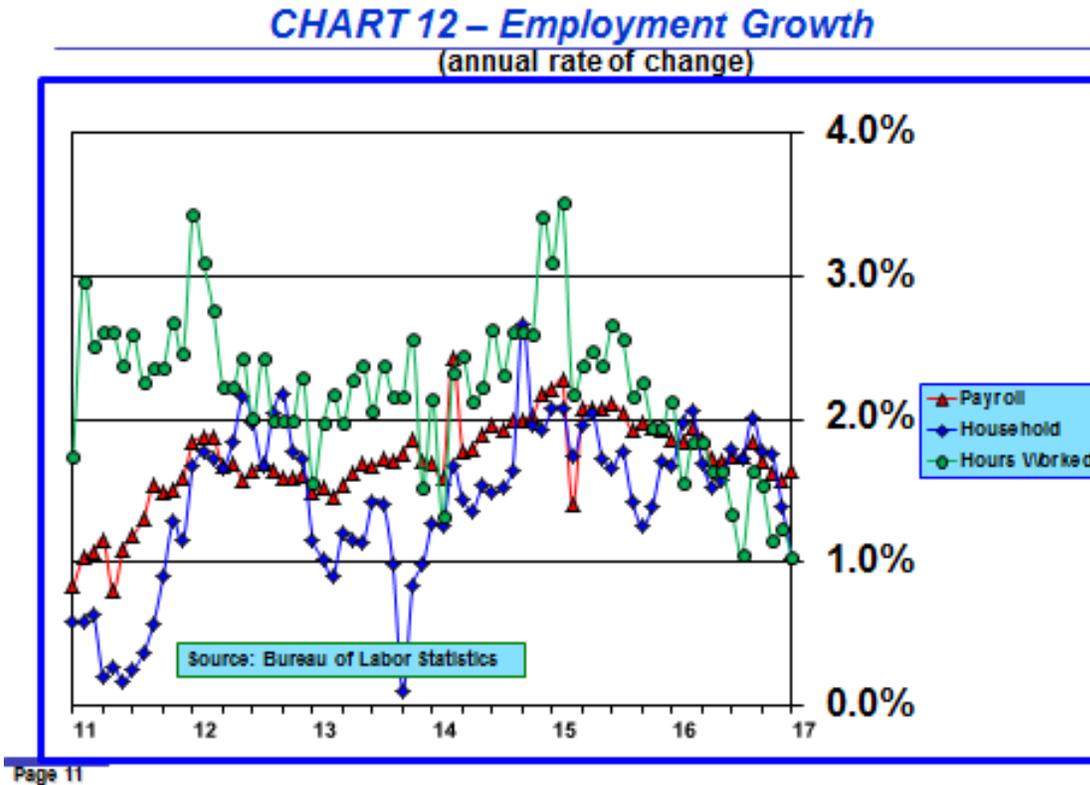
The trend in the 12-month rate of growth in payroll employment has slowed gradually from the cyclical peak of 2.27 percent in February 2015 to 1.64 percent in January 2017.

Household employment growth averaged 173,417 in 2016 compared to 209,167 in 2015 and 231,583 in 2015. Household employment has grown at an annual rate of 1.03 percent over the past 12 months compared to payroll employment growth of 1.64 percent.

Growth in total hours worked by all employees has been slowing even more rapidly than growth in the number of employees reported in both the payroll and household surveys because the average length of the work week shortened during 2016 from 34.5 hours to 34.3 hours. The 12-month growth rate in total hours worked by all employees was 1.04 percent over the past 12 months 1.24 percent in 2016, 1.94 percent in 2015 and 3.42 percent in 2014.

Chart 12 shows the three measures of employment growth — payroll employment, household employment, and total hours worked. Probably the most important thing to notice in **Chart 12** is the choppy downward trend in employment growth. This is indicative of a maturing labor market.

Generally, in the early stages of recovery employers increase the length of the work week of existing workers before hiring new ones resulting in total hours worked growing faster than the other two labor growth measures. This pattern reverses when economic activity slows — employers cut hours before firing



workers. This pattern is evident in **Chart 13A**. The steady deceleration in the growth rate of total hours worked over the last two years is indicative of a maturing economic cycle. (See **Chart 13B**.)

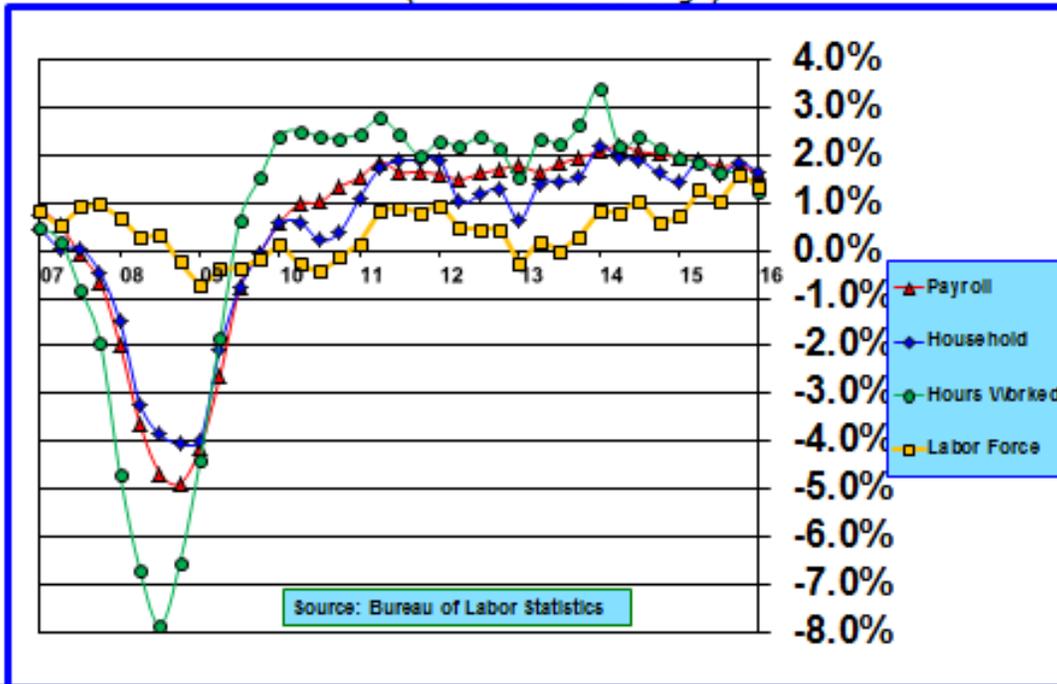
Charts 13A and **13B** also include the rate of growth in the labor force. The labor force includes those reported in the household survey as working but also includes those who are unemployed but looking for work. Over long periods of time growth in the labor force is relatively stable reflecting growth in the population and changing population demographics. Over shorter time periods, as is evident in **Charts 13A** and **13B**, labor force growth varies somewhat. That variation is due to changes in the labor force participation rate which are triggered by the ease or difficulty in finding a job, which is clearly related to the economic cycle. This is evident in the acceleration in the growth rate of the labor force over the last two years as discouraged workers return to the labor force.

Reflecting long-run demographic trends, all measures of employment growth should decline over the next two years to a range of 0.5 percent to 0.6 percent, compared to the range of 1.05 percent to 1.64 percent that prevailed over the past 12 months.

2. Employment Participation

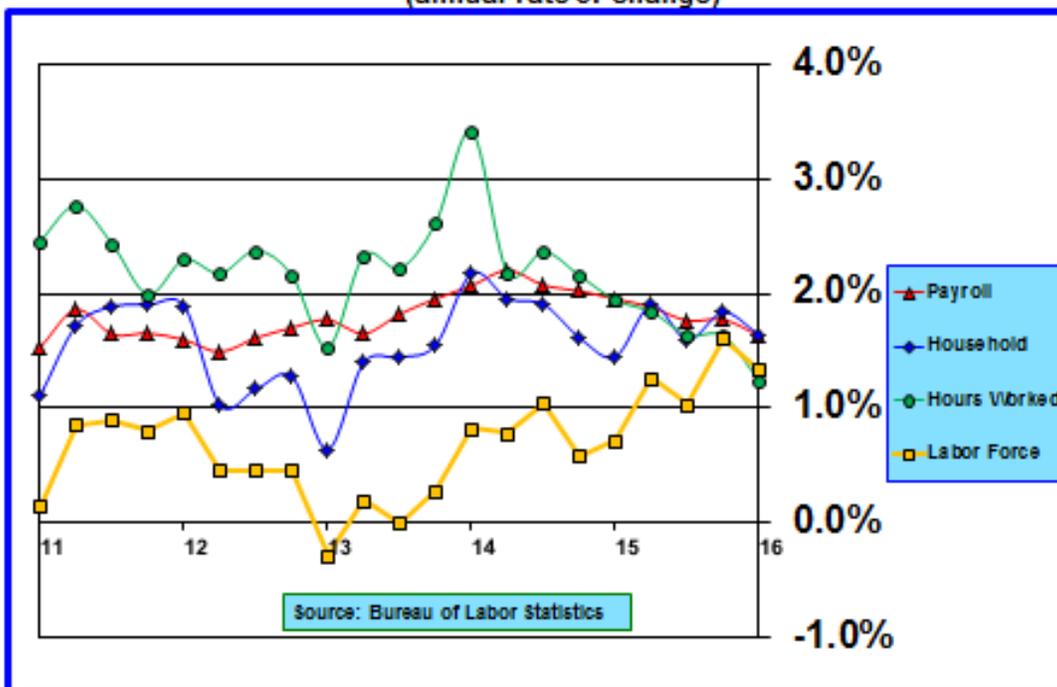
Chart 14 shows the labor force participation rate and the eligible-employment-to-population ratio. The denominators of both measures are the total number of people eligible to work (the employment population). The numerator of the eligible-employment-to-population ratio is the total number of people

CHART 13A– Employment Growth
(annual rate of change)



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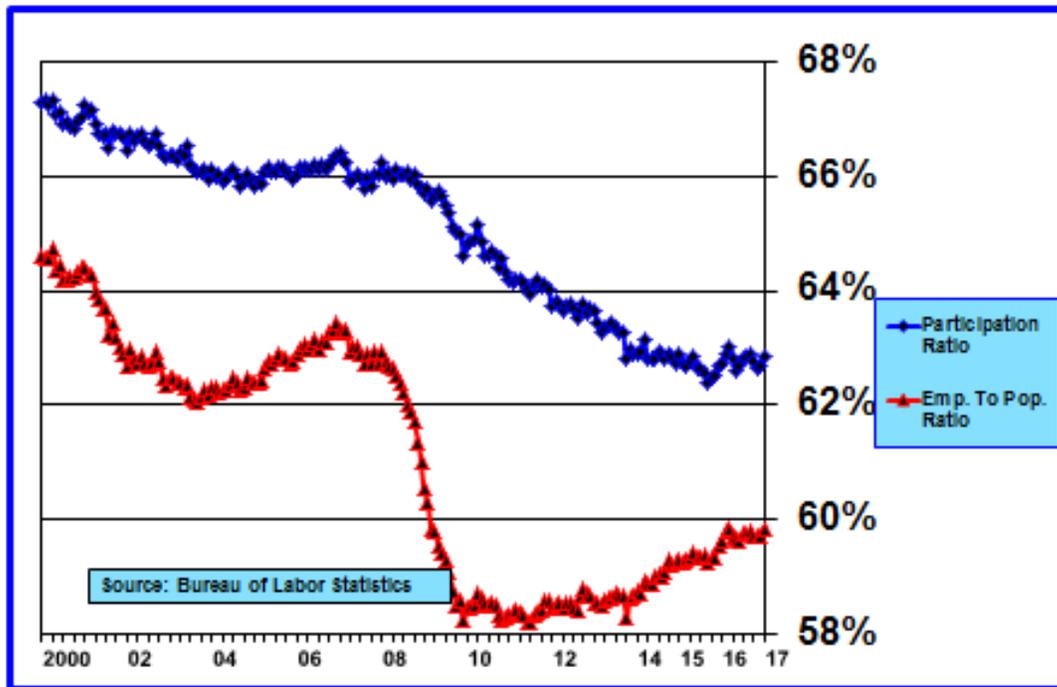
CHART 13B– Employment Growth
(annual rate of change)



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employed and unemployed who wish to be in the labor force. The numerator of the participation ratio only counts those who are employed.

CHART 14 – Labor-Force-Participation and Eligible-Employment-to-Population Ratios (U-3 Measure)



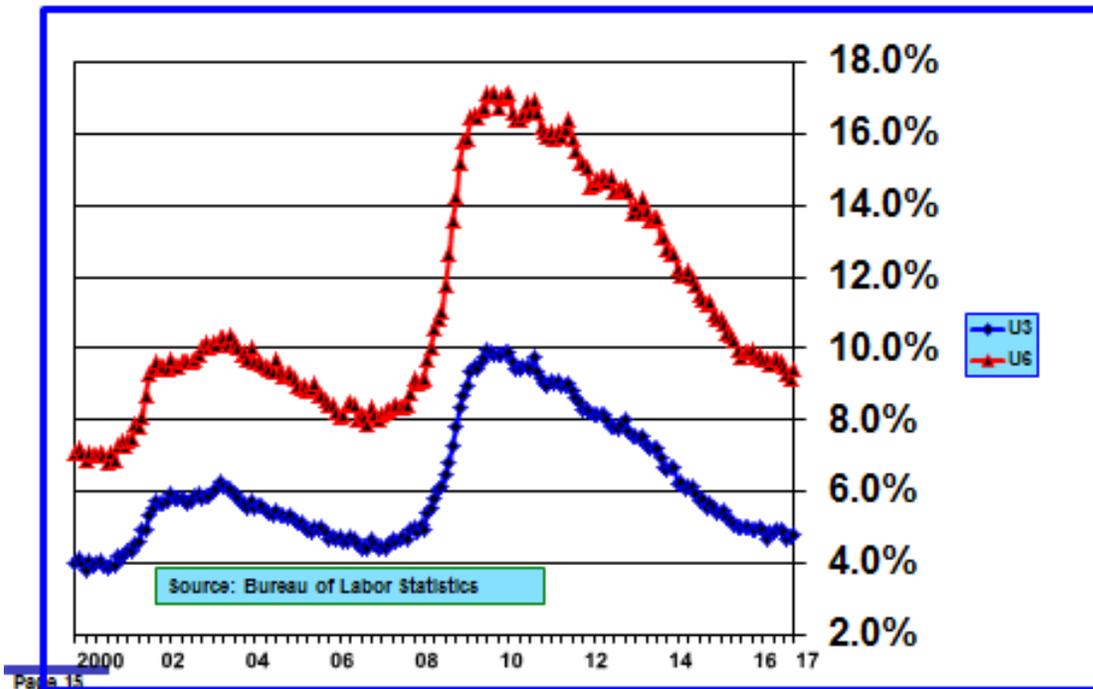
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The eligible-employment-to-population ratio plunged during the Great Recession and then stabilized for several years before beginning to rise in 2014. However, the participation rate continued a steady decline until about a year ago. The downward trend in the participation ratio in recent years has been driven by changing demographics which should continue to reduce participation by about 0.15 percent annually over the next ten years. However, the decline in the participation ratio during and immediately following the Great Recession was exacerbated by the exit of discouraged workers from the labor force. Because discouraged workers are not counted in the labor force there has been considerable debate about their numbers and whether they would reenter the labor force once the labor market tightened. The increase in the participation rate from 62.39 percent in September 2015 to 62.86 percent in January 2017 is suggestive evidence that some discouraged workers have reentered the labor market in the last few months. If that were not the case, the participation ratio should have fallen to about 62.13. This is a swing of approximately 1.1 million workers many of whom were probably discouraged but have now reentered the labor force as the labor market tightened and jobs became easier to find.

3. Measures of Unemployment Reflect a Labor Market That Is Close to Full-Employment

As can be seen in **Chart 15**, the U-3 unemployment rate has fallen to 4.78 percent and nearly matches the level attained prior to the Great Recession. The January U-3 unemployment rate was slightly above CBO's full employment (NAIRU) estimate of 4.74 percent.

CHART 15 – U-3 and U-6 Unemployment Rates



The U-6 measure of unemployment, which adds those working part time who would prefer full-time employment and those marginally attached to the labor force to the U-3 measure, has fallen to 9.43 percent but, as can be seen in **Chart 16**, is about 0.6 percentage points above the 2005 pre-Great Recession difference between the U-3 and U-6 unemployment measures when the labor market was at full employment. The U-6 measure of unemployment fell 72 basis points during 2016 compared to a decline of 30 basis points in the U-3 measure, which underscores an improving labor market. Both unemployment measures reflect a tightening labor market that is near or at full employment.

Long-term and short-term unemployment rates are also indicators of labor market tightness and are shown in **Chart 17**. The short-term unemployment rate has returned to the low level that prevailed prior to the Great Recession. The long-term unemployment rate has declined from over 4 percent in the aftermath of the Great Recession to 1.16 percent in January. It is still about 0.3 percent above the low level reached in 2006 just prior to the onset of the Great Recession.

4. Forecasts of the U-3 Unemployment Rate

Forecasters expect the labor market to continue to tighten. The U-3 unemployment rate nearly matches **CBO's** full-employment estimate of the non-accelerating inflation rate of unemployment (NAIRU). While this is certainly welcome news after seven years of high unemployment, further declines in unemployment will result in a tight labor market. Scarcity of workers typically drives wages higher. This is also a favorable development because it will increase worker spending power. But, as the term NAIRU implies,

CHART 16 – U-6 Minus U-3 Unemployment Rates

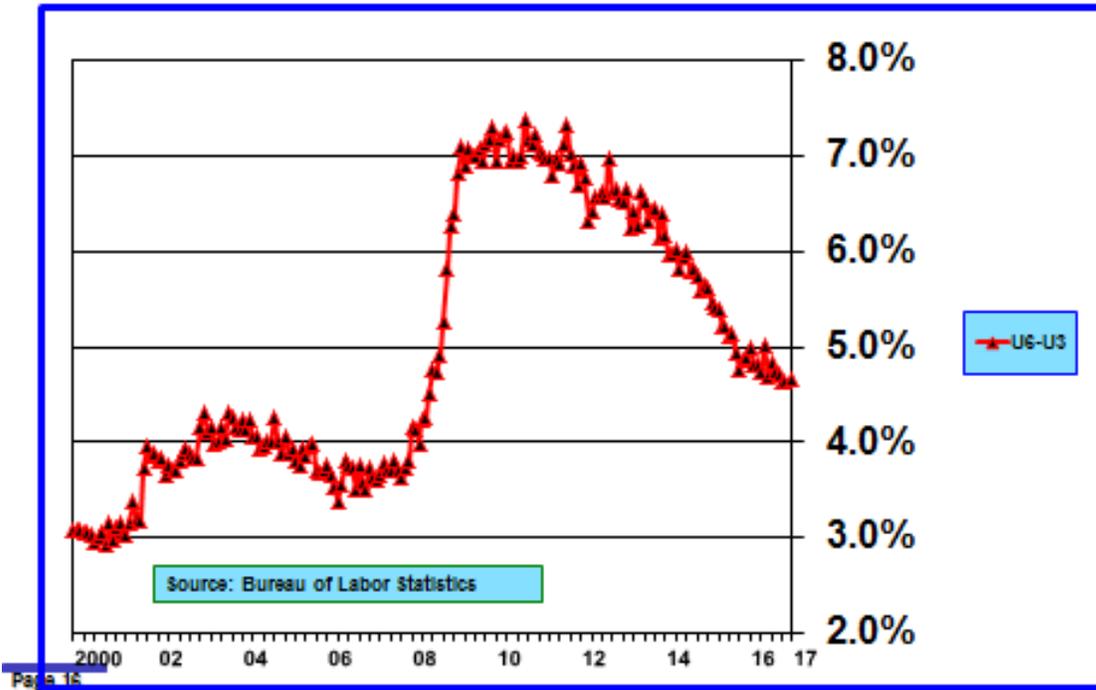
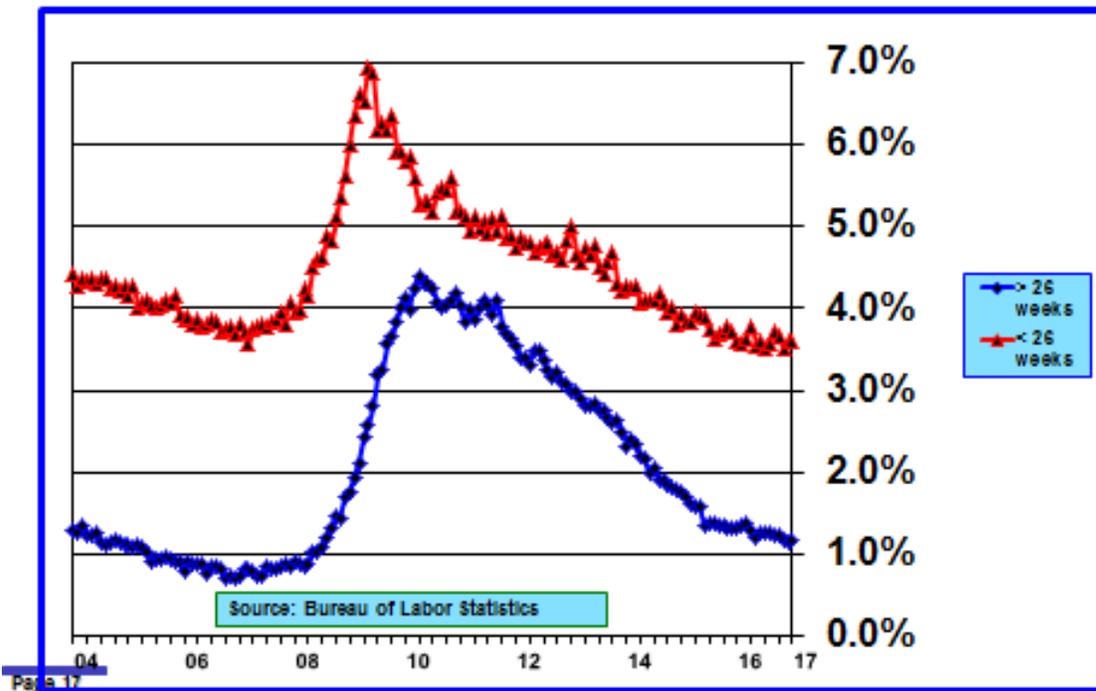


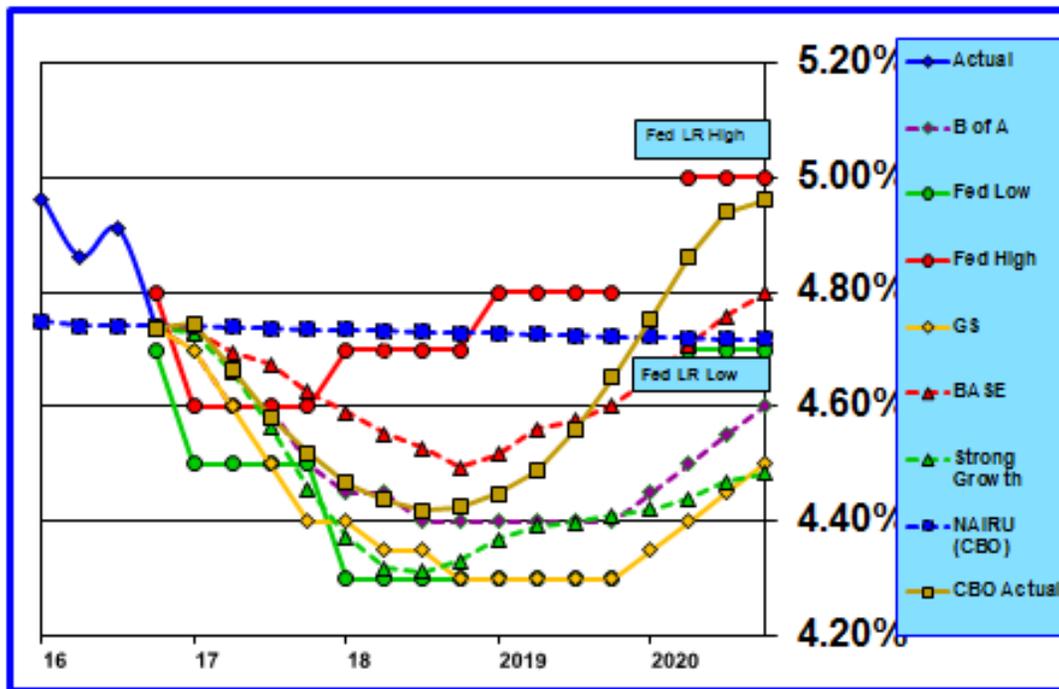
CHART 17 – LT (>26 weeks) and ST (<26 weeks) Unemployment Rates



when unemployment falls below this level for any length of time not only do wages increase but inflation increases as well. For that reason, the FOMC will worry about formulating monetary policy to maintain full employment but limit the potential for tight labor markets to foster inflation. The traditional monetary policy tool involves raising interest rates. While this worry is a prominent topic for FOMC members, offsetting worries up to now about tepid growth in real GDP and fragility of international financial markets have resulted in the FOMC adopting a cautious, go slow approach to increasing interest rates. While caution still prevails among the majority of FOMC members, recent signs of stronger economic growth are now more likely to lead to tighter monetary policy in coming months.

Chart 18 shows U-3 unemployment rate forecasts for **B of A**, **GS**, and **FOMC** high and low range, and my “**BASE**” and “**Strong Growth**” scenarios. **CBO**’s estimate of **NAIRU** is also shown in **Chart 18**.

CHART 18 – NAIRU and Unemployment Rate Forecasts
(quarterly average)



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Most forecasts project the unemployment rate to stay below NAIRU over the next three years. **GS** and **B of A** are the most optimistic and anticipate that the unemployment rate will fall to between 4.3 and 4.4 percent by 2018. My “**Strong Growth**” scenario tracks the **GS** and **B of A** forecasts quite closely. All three of these forecasts are closer to the bottom end of the FOMC’s forecast range than they are to the top end. My “**BASE**” scenario is consistent with **CBO**’s projections.

CBO’s pessimism, or whatever caused it to reduce employment growth after 2017, is clearly evident in **Chart 18** as **CBO**’s unemployment rate forecast rises during 2018 and 2019 and then exceeds its estimate of NAIRU in 2020.

5. Wage Growth Is Accelerating As the Labor Market Tightens

As the labor market approaches full employment, theory and past experience indicate that growth in wages should be accelerating. That is what is supposed to happen when excess supply disappears and demand is increasing. And the data indicate this is occurring. However, acceleration in wage growth to date has been weaker than experience suggests should be the case.

Growth in wages is an important measure of labor market strength. An increasing rate of growth is evidence of a strengthening labor market in which labor, particularly in scarcer job categories, is gaining more bargaining power.

a. BLS-Compiled Wage Measures

There are three primary broad-based measures of labor compensation that provide information about compensation trends. All are compiled by the Bureau of Labor Statistics (**BLS**). One is released monthly as part of the monthly labor situation report and includes both hourly and weekly wage rates for all employees and separately for production and nonsupervisory workers, but includes no information about benefits which comprise approximately 30 percent of total compensation. A second measure, the employment cost index (ECI), is released quarterly and consists of wages and salaries, benefits, and total compensation indices (see **Chart 11**). A third is also released quarterly as part of **BLS**'s report on output, total hours worked, and productivity.

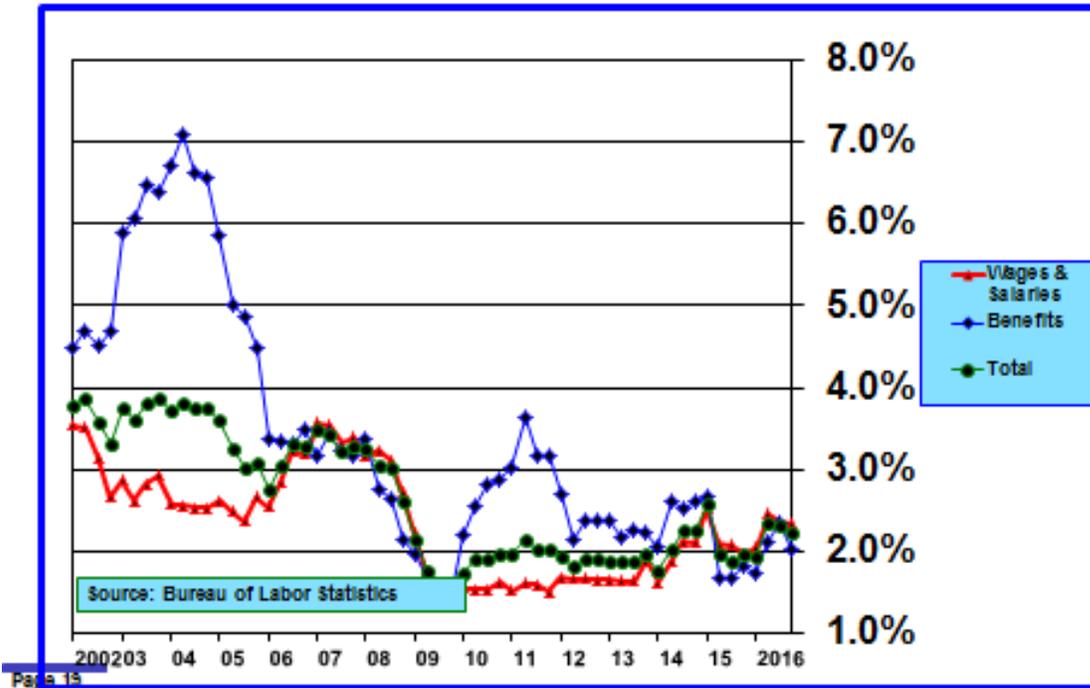
Chart 19 reveals that there has been very little acceleration in total compensation over the past six years. Total compensation was growing at a rate of about 2.0 percent in 2011 and 2.25 percent in 2016. Growth in wages and salaries has moved up from about 1.6 percent in 2011 to 2.35 percent in 2015. But, much of the acceleration in wages and salaries has been offset by slowing growth in benefits, which declined from about 3.0 percent in 2011 to 2.0 percent in 2016.

Analysts were expecting third and fourth quarter ECI data to ratify the upward trend in compensation growth reflected in other measures (see **Chart 20**). Instead the year-over-year growth rate in total compensation was unchanged in the third quarter at 2.33 percent compared to 2.34 percent in the second quarter and actually declined to 2.24 percent in the fourth quarter. The salaries and wages sub-component declined slightly from 2.45 percent in the second quarter to 2.36 percent in the third quarter and 2.34 percent in the fourth quarter.

Chart 20 shows the rate of growth in hourly wages for all workers, production and nonsupervisory workers, as well as the ECI (total wages and salaries). All three sets of measures in **Chart 20** track each other closely over time. All three measures have been rising gradually over the past five quarters.

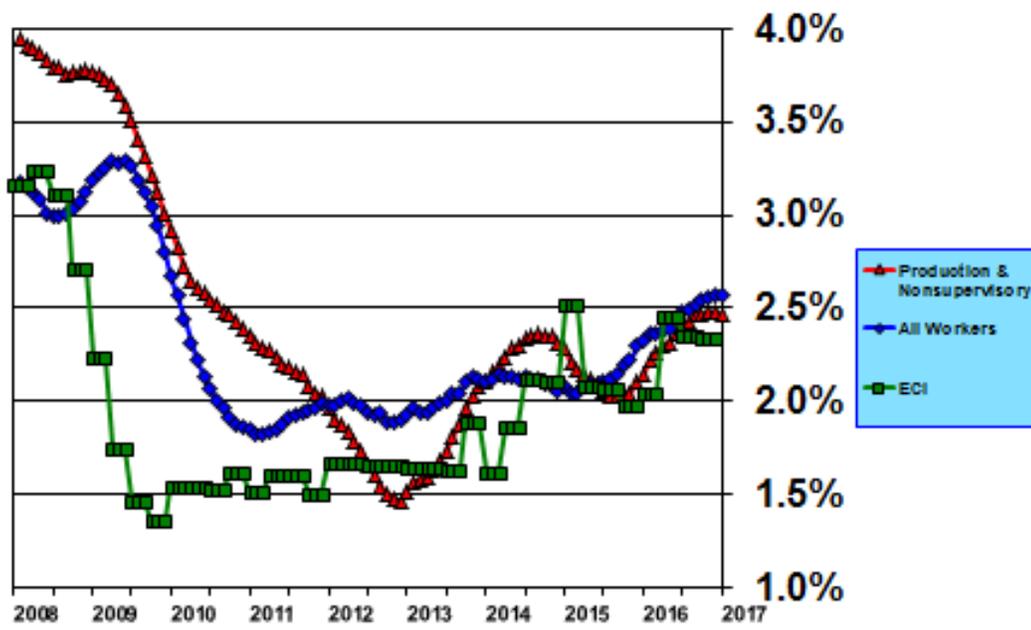
Although these measures are highly correlated over time, because compilation methodologies differ for each set of measures percentage changes over fixed time periods will not necessarily be in sync. This is the case currently. Average hourly wages (12-month moving average) of all employees are rising 2.57 percent annually over the past 12 months compared to 2.32 percent a year ago. Average hourly wages (12-month moving average) of production and nonsupervisory workers are rising 2.47 percent annually compared to 2.14 percent a year ago. ECI total compensation growth has risen from 1.95 percent in the fourth quarter of 2015 to 2.24 percent in the fourth quarter of 2016.

CHART 19 – Employment Cost Index
(annual rate of change)



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CHART 20 – Hourly Wage Rate Growth – ECI, All Workers and Production and Nonsupervisory Workers
(annual year over year and 12-month moving average rates of change)



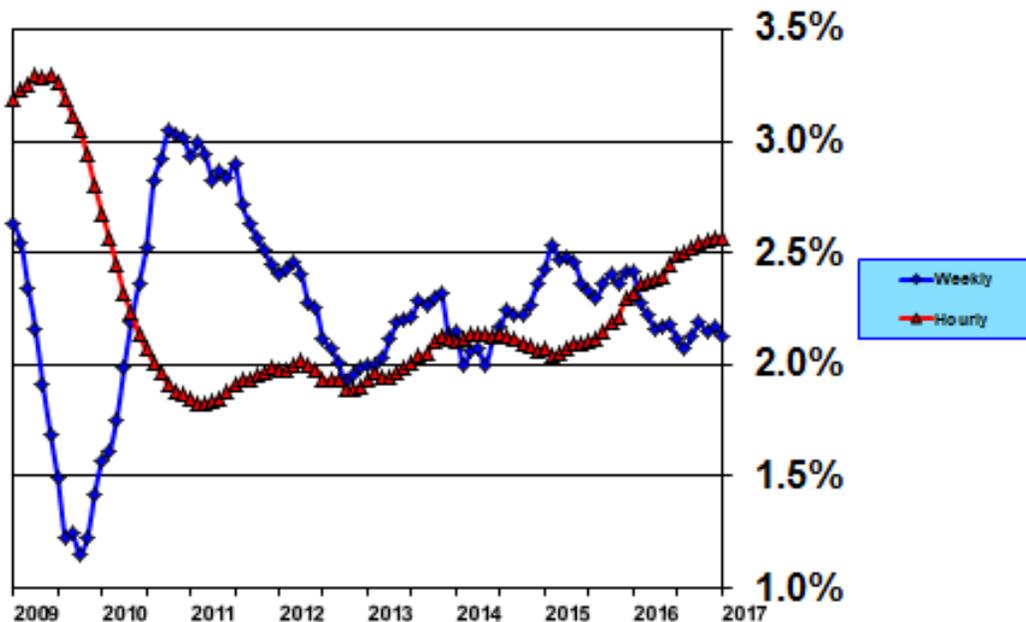
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b. Weekly Versus Hourly Wage-Rate Growth

To a certain extent, focusing only on hourly wages is a bit misleading. If one looks at growth in average weekly earnings, which factors in the length of the workweek and thus incorporates changes in the mix of full and part-time employees, rather than the hourly wage rate, growth in weekly wages for all employees has fallen from 2.41 percent a year ago to 2.13 percent in January 2017 (see **Chart 21**). This outcome reflects a modestly shorter average number of hours worked per week, which could be due to a greater proportion of part-time workers as well as fewer hours for other employees.

CHART 21 – Hourly & Weekly Wage Rate Growth – All Workers

(annual year over year and 12-month moving average rates of change)



Source: Bureau of Labor Statistics

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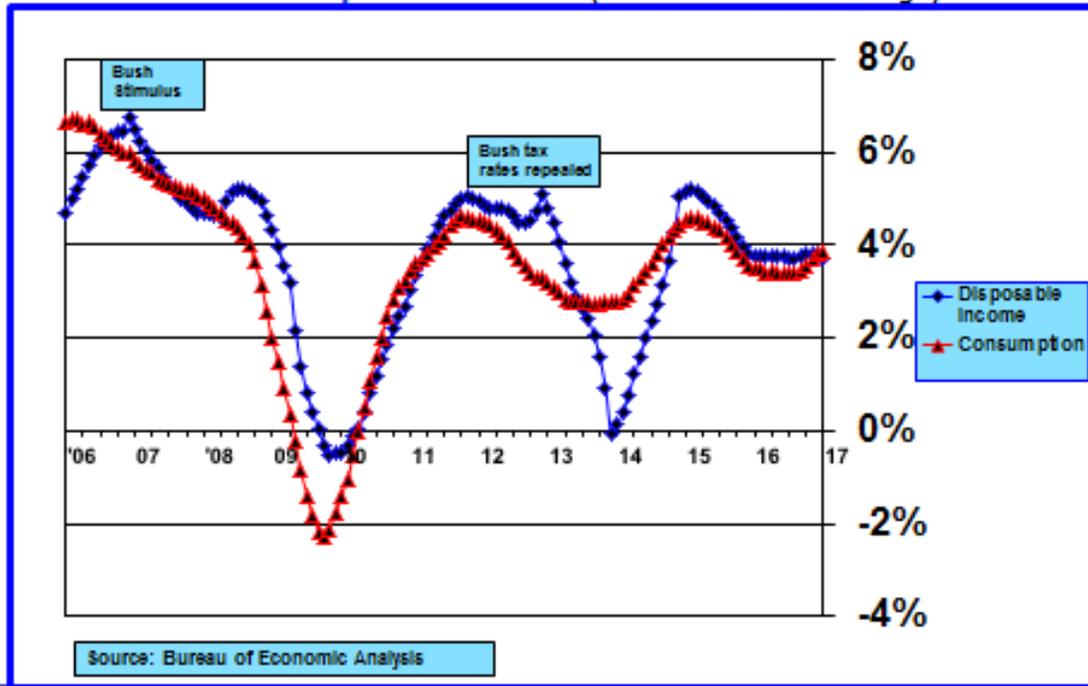
Nominal disposable income depends upon growth in total weekly earnings rather than growth in the hourly wage rate. This means that deceleration in the growth rate in average weekly wages should eventually translate into slower growth in disposable income and correspondingly slower growth in consumer spending. However, as indicated in **Chart 22**, consumer income and spending data do not yet reflect the development of a decorating trend.

c. Hourly Wage Forecasts

Chart 23 shows my projections for wage growth for production and nonsupervisory workers over the next ten years and **CBO**'s, **GS**'s and **B of A**'s projections for growth in the wages and salaries component of ECI for all workers.

Two comments about the details shown in **Chart 23** are in order. First, the data series for all employees

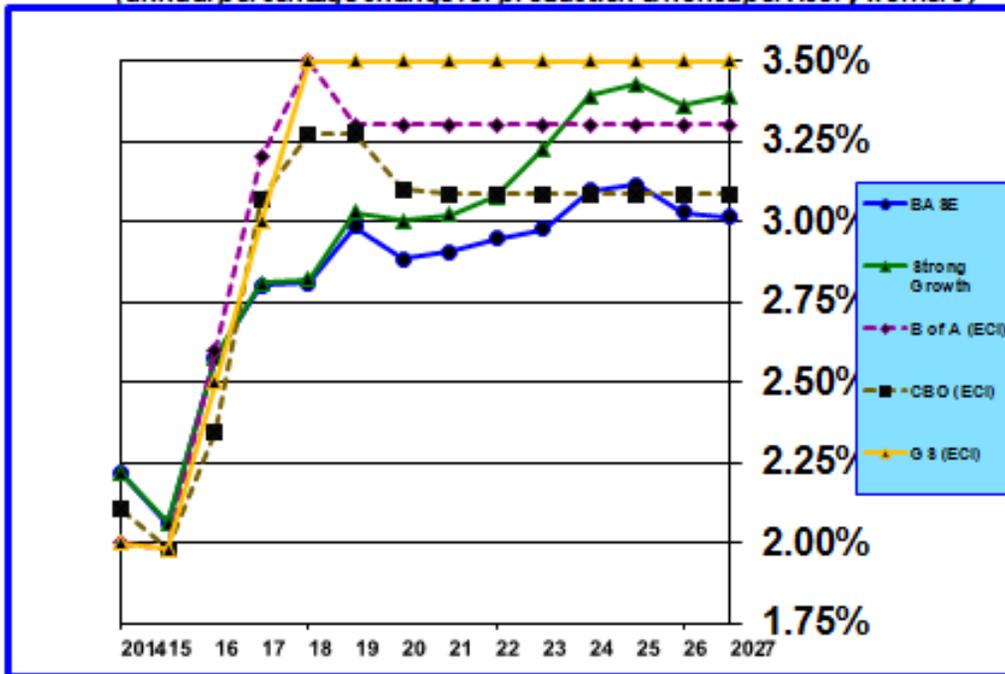
CHART 22 – Nominal Disposable Income and Consumption Growth (12-month rate of change)



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CHART 23 – Hourly Wage Rate Forecasts

(annual percentage change for production & nonsupervisory workers)



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only began in 2006 while the data series for production and nonsupervisory workers goes back to 1964. Thus, the data series for production and nonsupervisory workers contains a lot more historical information which is useful for constructing robust forecasts. In the long run growth rates in wages for all employees and for production and nonsupervisory workers are highly correlated (see **Chart 20**).

Second, **CBO**, **GS** and **B of A** forecast wage rate growth only for ECI. Although the methodologies for constructing these different wage data series differ, the directionality of all is highly correlated over time, even if the levels aren't precisely the same. **GS**'s ECI wage growth forecast rises to 3.5 percent by 2018 and remains at that level thereafter. **B of A**'s ECI forecast also rises to 3.5 percent in 2018 but then recedes to 3.3 percent. **CBO**'s ECI forecast rises to 3.3 percent in 2018 but then slows to 3.1 percent by 2020. Wage growth for production and nonsupervisory workers rises more slowly in my "**BASE**" and "**Strong Growth**" scenarios, but after several years reaches a range of 3.0 percent to 3.3 percent.

6. Concluding Observations

Based upon a variety of measures, the U.S. labor market is very near full employment. The U-3 unemployment rate of 4.78 percent compared to **CBO**'s 4.74 percent estimate of full employment and the U-6 rate is about 0.6 percent away from full employment.

But, can the labor market remain as strong as it has been in recent months when the pool of skilled eligible workers is shrinking? And, what if erosion of profit margins as wages rise puts pressure on employers to curtail hiring? Is the recent shortening in the length of the workweek a warning signal? And, what if consumer spending slows? Won't that lead to unwanted inventories and production cutbacks? What if stock prices decline sharply and financial conditions tighten, perhaps because of an international shock or tighter U.S. monetary policy? That outcome would likely feed employer caution.

There are many downside risks. But at the moment a great deal of optimism prevails which implies that the labor market is likely to continue its forward march. But, in the longer run demographic trends simply do not support the rate of growth in employment that we have experienced in recent times. **CBO** in its January forecast update reduced expected population growth. And most of the growth that is expected comes from immigration. The Trump Administration's immigration policies are a significant threat to population and employment growth. As a reminder, slowing employment growth will reduce potential real GDP growth.

VII. Inflation and Interest Rates

The FOMC remains confident that both core and total PCE inflation will return to the 2.0 percent target level by 2018. The FOMC has repeatedly extended the time frame for achievement of the 2.0 percent target, but has not wavered from its conviction that the target will eventually be achieved. In its latest update of projections in December, the FOMC did not extend the time frame to reach its target of 2.0 percent. With core PCE inflation of 1.7 percent in 2016, I expect that most FOMC members are now confident that the target of 2.0 percent will be reached in the next two years.

1. Core Inflation

Core PCE inflation was 1.70 percent in December and has risen 39 basis points from its recent low of 1.31 percent in July 2015. Total PCE inflation, which continues to be depressed by the plunge in oil prices and lower import prices, was 1.62 percent in December, up from the 0.23 percent rate of increase that prevailed at the end of 2015. Now that commodity prices have stabilized, total CPE inflation will continue to rise in coming months, as the early 2016 declines in prices of commodities drop out of the year-over-year annual rate of change. While core PCE is anticipated to remain slightly below 2.0 percent during 2017, total PCE inflation is expected to rise to slightly more than 2.0 percent.

As can be seen in **Table 11** (**Chart 24** shows historical core PCE price index data and data from **Table 11** in graphical form), forecasts of the core PCE inflation index indicate that inflation will increase modestly during 2017. Over the longer run, **B of A** and **GS** expect core PCE inflation to rise gradually, reaching 2.0 percent sometime during 2018, and then to move above 2.0 percent in 2019. **B of A** expects inflation to reach 2.3 percent in 2019 and **GS** is forecasting 2.2 percent in 2019. **B of A** then expects inflation to recede to the 2.0 percent target over the long run. FOMC projections reflect a gradual rise to its 2.0 percent target.

Table 11
Core PCE Inflation Forecasts — **B of A**, **GS**, **Bill’s “BASE”**, **Bill’s “Strong Growth”** and **FOMC High and Low**

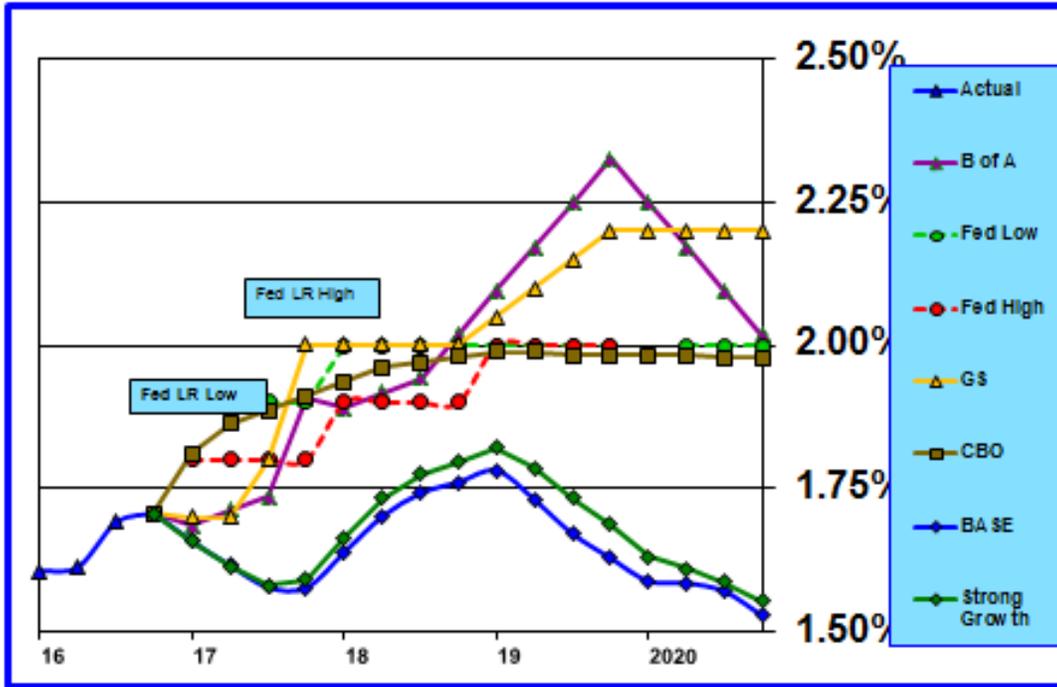
Core CPE	2013	2014	2015	2016	2017	2018	2019	2020
Actual	1.55	1.50	1.39	1.70				
B of A					1.9	2.0	2.3	2.0
GS					2.0	2.0	2.2	2.2
Bill’s BASE					1.6	1.8	1.6	1.5
Bill’s Strong Growth					1.6	1.8	1.7	1.5
FOMC — High					1.9	2.0	2.0	
FOMC — Low					1.8	1.9	2.0	

In looking at **Chart 25**, my **“BASE”** and **“Strong Growth”** forecasts for core PCE inflation also move toward 2.0 percent by 2018. But, as can be seen in **Chart 25**, core PCE inflation does not remain near 2.0 percent as others expect but drifts down to a range of 1.6 to 1.8 percent. The principal culprit is weak productivity and also a modest rise in the employment gap as unemployment edges up in the **“BASE”** scenario.

Core PCE inflation forecasts for my **“BASE”** and **“Strong Growth”** scenarios are not materially different. All are a bit lower than the forecasts of **B of A**, **GS** and the FOMC. While one should never discount the possibility of a sea-change in the economic environment in the future that would set inflation of a different course, the preponderance of the evidence indicates that core PCE inflation will remain modestly below 2.0 percent in coming years, notwithstanding an economy that is operating at full employment and which will soon benefit from additional fiscal stimulus.

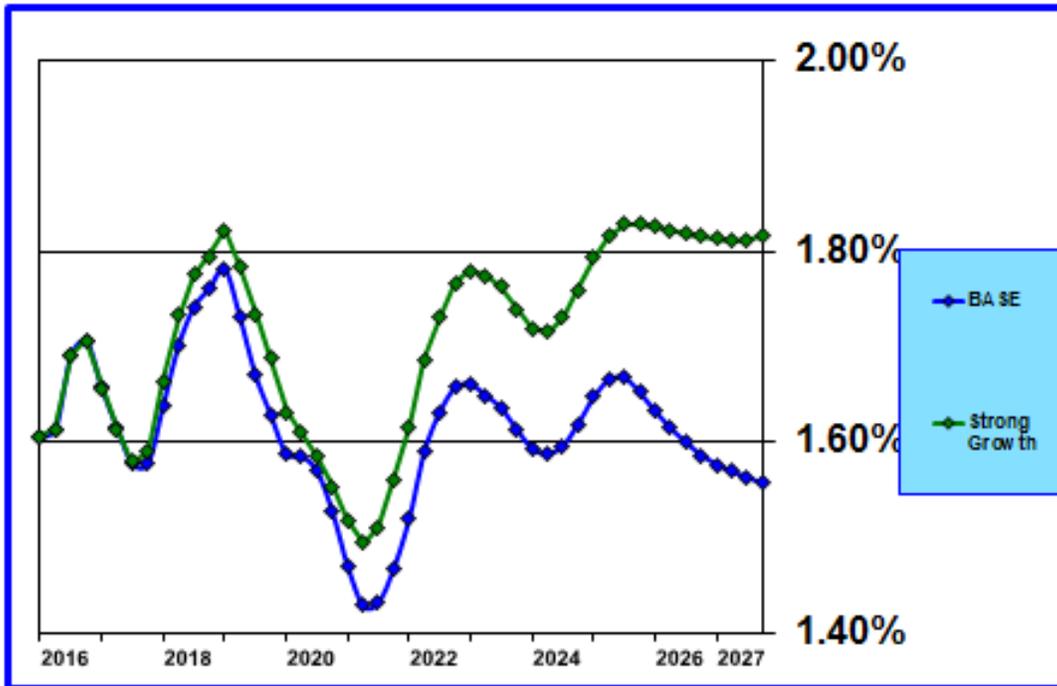
Table 12 shows contributions, based on my econometric model, of various economic variables to forecast core PCE inflation for two periods of time — 2017-2020 and 2021-2027. The starting point is the 1.70 percent rate that prevailed in December. By the end of 2020 core PCE inflation is a few basis points lower

CHART 24 – Core PCE Inflation
(annual percentage rate)



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CHART 25 – Core PCE Inflation
(annual percentage rate)



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in both the “**Strong Growth**” and “**BASE**” scenarios, as the positive impacts of tighter labor markets, a weaker dollar (dollar strengthens in the early part of the period and then weakens by 2020), and the passthrough effects of gains in housing prices (proxy for the rent and owners equivalent rent components of the core PCE inflation index) are more than offset by negative impulses from low productivity (depresses the equilibrium real rate of inflation as well as the measured level of inflation) and a very small effect of slower employment growth.

Table 12
Changes in Core PCE Inflation (Basis Points)

“Strong Growth” Scenario						
	Labor Growth	Labor Gap	Productivity	Dollar	Housing Prices	Total
2017-2020	-2	26	-48	6	6	-12
2021-2027	0	2	-2	40	-13	28
2017-2027	-2	29	-50	46	-7	15
“BASE” Scenario						
2017-2020	-2	23	-42	8	-3	-15
2021-2027	0	-21	1	42	-18	5
2017-2027	-2	3	-41	50	-21	-11

During the 2021 to 2027 period core inflation rises slightly in both the “**BASE**” and “**Strong Growth**” scenarios. The effects of a weaker dollar dominate the collective impact of other variables.

2. Inflation Expectations

At the beginning of 2016 the 10-year U.S. Treasury note yield was 2.27 percent. On December 31, 2016 it was 2.45 percent. However, during most of the year the 10-year yield was much lower and bottomed out at 1.37 percent on both July 5 and 8 following the British vote to leave the European Union. On the day before the election of Donald Trump, this rate was 1.88 percent. By the end of the year the yield rose 67 basis points as market participants came to a consensus that a Republican president and a Republican Congress would pursue a strongly pro-growth economic agenda. This would have the consequence over time, given that the economy is already near or at full employment, of boosting inflation. Thus, most of the increase in the 10-year yield by the end of the year was caused by a recalibration of inflation expectations and a boost in the real rate of interest based upon expectations of faster growth in real GDP.

My “**BASE**” and “**Strong Growth**” scenarios include assumptions of \$150 billion in added fiscal stimulus annually over the next ten years with the capital infrastructure part of the stimulus front loaded in 2018 and 2019. This amounts to about 0.8 percent of nominal GDP. Nonetheless, after some upward pressure on core PCE inflation to about 1.8 percent in 2018, core inflation settles back into a lower range (see **Table 11** and **Chart 25**).

According to the University of Michigan monthly Surveys of Consumers, expectations for long-term inflation was 2.5 percent in January. This survey measure has been trending down gradually. A year ago long-term inflation expectations were 2.7 percent.

3. Financial Conditions

Maintaining financial stability is a responsibility of the Federal Reserve. In this regard the Federal Reserve was tested repeatedly during the global financial crisis of 2008 and by most accounts responded effectively.

However, prior to the time of the financial crisis, the Federal Reserve regarded its lender of last resort role as just that. It was to respond and stabilize the financial system during times of crisis. Monitoring the fragility of the financial system and formulating monetary policy in an anticipatory manner to assure ongoing financial stability was not regarded as a primary function of monetary policy. That approach has changed in the aftermath of the global financial crisis but it still appears that the macroeconomic goal of maintaining financial system stability remains more one of reaction to developments.

That is not to say that there has been a lack of attention, but the focus has been primarily at the micro level — individual financial institutions — rather than at the macro level. The Dodd Frank Act mandated a comprehensive regulatory regime intended to assure financial strength and prudent management of individual financial institutions. Thus, financial institutions are now subject to more stringent capital and liquidity requirements. Notwithstanding these safeguards, should an individual institution get into serious trouble, the requirement for systemically important financial institutions (SIFIs) to have living wills, is intended to enable regulatory authorities to quickly and surgically resolve failures and contain the potential for systemic contagion.

To my way of thinking, as helpful as establishing rigorous prudential standards might be and preparing for prompt intervention when trouble arises, this micro approach ignores the possibility that macroeconomic policy will drive systemic financial instability rather than the acts of one or more wayward SIFIs. The Federal Reserve needs to monitor macroeconomic developments and the consequences of policy responses not just in terms of their impacts on employment and inflation but also in terms of financial system stability. There is building awareness, I believe, in the importance of this tri-part focus, but considerations of systemic financial stability are not yet robustly built into the monetary policy decision making process.

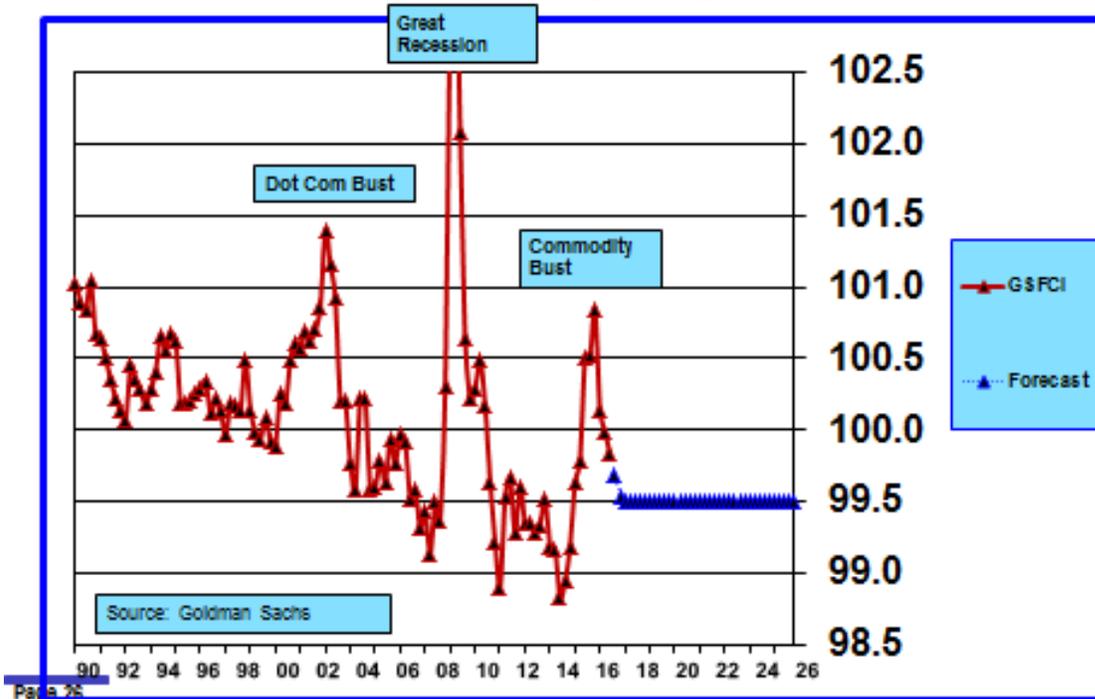
GS calculates and publishes a financial conditions index. **GS** has conducted extensive empirical research which demonstrates that financial conditions impact economic growth. Tighter financial conditions lead to slower growth. Tighter financial conditions can occur through intentional tightening of monetary policy by the FOMC. But, tighter financial conditions can also occur during episodes of financial market instability and panic. **Chart 26A** shows the history of the **GS** Financial Conditions Index (**GSFCI**) from 1990 through 2016 on a quarterly average basis. During this period there were three episodes of financial market instability — the dot com bust during 2001 to 2003, the Great Recession of 2008 to 2010 and the recent commodity price bust of 2015 which carried over into early 2016.

The forecast in **Chart 26A** assumes that **GSFCI** stabilizes at 99.5, a level that historically has been consistent with relatively benign financial market conditions.

GSFCI is a strong predictor of interest rates with an average lag of about 18 to 29 months with the longest lag occurring for short-term rates and the shortest lag for long-term rates. A sustained increase of 0.25 in **GSFCI** raises the federal funds rate by 50 basis points and the 10-year Treasury yield by 35 basis points.

That brings us to the short-lived global financial panic at the beginning of 2016. **GSFCI** began to

CHART 26A – Financial Conditions
(Quarterly Average)



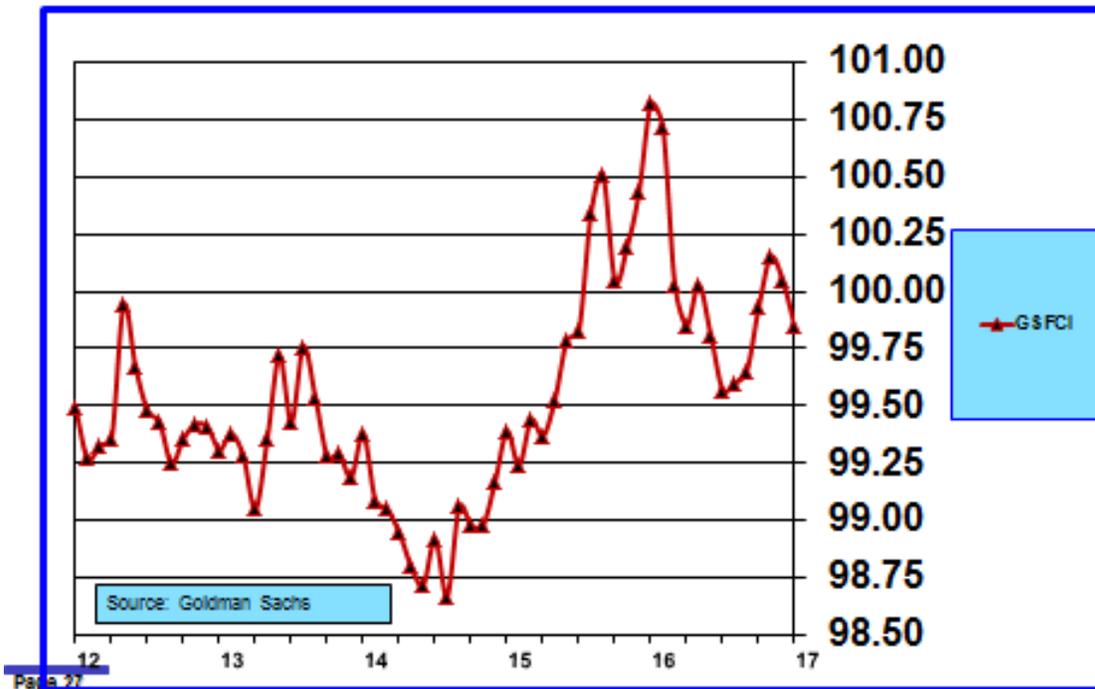
escalate during the summer of 2015 as commodity prices plummeted. Indeed, the FOMC in response to tightening financial conditions in global markets delayed the first federal funds rate hike that had widely been expected to occur in September 2015. When a degree of calm returned to markets during the fall, the FOMC proceeded to initiate monetary tightening in the U.S. at its December meeting. However, financial conditions immediately began to tighten again and full-scale panic ensued in January. This sequence is clearly evident in **Chart 26B**. Again, the FOMC responded by pulling back and the crisis passed.

This is not to argue that the FOMC was wrong to begin tightening monetary policy in December 2015. After all, the labor market was near full employment and the risk of rising inflation, although not necessarily the reality that inflation would actually increase, existed. The FOMC found itself in the difficult position of attempting to satisfy its full employment and price stability mandates without aggravating the financial instability that was present in a global financial system that has become dependent upon quantitative easing and abundant liquidity. The FOMC responded by going on hold and international markets calmed down.

Financial conditions again tightened briefly and only moderately in the immediate aftermath of the Brexit vote (see **Chart 26B**), but markets were quickly soothed by central banks' promise of providing liquidity. Financial conditions quickly resumed an easing trend and stock prices headed higher.

But this brief respite was short-lived and financial conditions again began to tighten in October as the market began to revise its inflation expectations upwards. While the markets are gleeful about the prospects for economic growth under a Trump presidency, financial conditions have eased only a little because concerns about higher inflation and tighter monetary policy have offset the benefits of higher

CHART 26B – Financial Conditions
(Monthly)



expected growth.

GS's research indicates that the tightening in financial conditions that began in mid-2014 and continued to early 2016, reduced real GDP growth by 1.0 percent over the past year. That intuitively makes sense because tighter financial conditions reflect elevated perceptions of risks and cause market participants to act with a greater degree of caution. Riskier loans are not made and more speculative investments are deferred or avoided altogether. The good news, according to GS, is that the easing of financial conditions that has occurred during 2016 should add 0.5 percent to real GDP growth over the next 12 months. However, part of this expected benefit has now been cancelled due the recent rise in GSFICI.

GS recently included a financial conditions variable in its version of the traditional Taylor Rule, which provides guidance for calibrating monetary policy to attain full employment and price stability. GS posits that the effects of financial conditions on the policy interest rate are not necessarily independent of the employment and inflation components of the Taylor Rule. In fact, increases in the federal funds rate will tighten financial conditions. GS simulated three scenarios.

Because of the interactive effects, GS believes that a more gradual rate of monetary policy tightening in the U.S. is prudent policy. In this regard, GS has ratified through a model a policy that the FOMC has already embraced. In GS's first scenario the federal funds rate increases over the next few months by 40 basis points including the 25 basis point increase that occurred in December. Real GDP growth improves by approximately 0.5 percent over the next 12 months but the benefit fades toward the end of 2017. In the second scenario, the federal funds rate rises by 100 basis points by the end of 2017, including the 25 basis point increase in December, and there is no net impact on real GDP growth. Note that the FOMC's

median projection from its December Summary of Economic Projections is for the federal funds rate to increase an additional 75 basis points by the end of 2017. In the third scenario, financial conditions worsen by more than what can be attributed to a 100 basis point increase in the federal funds rate. In this case, real GDP growth is depressed by about 0.5 percent over the next 12 months. At the moment both the FOMC and **GS** believe scenario is most likely, which, if **GS**'s analysis is on the mark, means that tighter financial conditions caused by an additional 75 basis point increase in the federal funds rate by the end of 2017 will have a minimal impact on real GDP growth.

If **GS**'s analysis is sound, a gradual tightening in monetary policy may maintain a semblance of financial stability for the time being, but such a policy will not directly deal with the sources of financial instability that are already present in the global financial system. In that regard, such a policy is palliative, not curative. And, cynics will continue to observe, with merit, that every time that the market has a convulsion, the FOMC pulls back and, perversely, this encourages more risk-taking which worsens, rather than ameliorates, underlying financial market instability.

Volatility has recently fallen to cyclically extremely low levels. This is true for both interest rates and exchange rates. One is reminded that the last time interest-rate volatility was low was in 2006 and 2007 in the waning days of the Great Moderation just prior to the financial crisis and onset of the Great Recession. And, the last time currency exchange rate volatility was low was in 1986 and 1987, just prior to the stock market's decline of 22 percent in a single day. Markets can be lulled into complacency by soothing words and friendly policy intervention. Low volatility actually encourages risk taking and the deployment of leverage to arbitrage narrow spreads. But, the mispricing of risk sets the stage for a potentially violent correction when the market loses confidence in policymakers' ability to deliver. This is not to say that such a correction is inevitable or even imminent. It is merely an historical observation that low volatility is an artifact of aggressive policy management. And, if that policy management discourages markets from managing risk or, worse, encourages excessive risk taking, then history tells us that a Minsky moment will occur, often without much warning.

The euphoria that has gripped global markets since the election of Donald Trump has upped the ante on risk taking and reinforced uncritical complacency.

As I have said before, policymakers can postpone the day of reckoning, perhaps for a very long time. But, if underlying global systemic imbalances are not addressed effectively, the day of reckoning will inevitably eventually occur. And, history tells us that the longer imbalances are allowed to build, the greater will be the pain when pretend and extend policies no longer work.

One more gloomy thought: If Trump follows through on his anti-trade rhetoric with concrete action and the dollar strengthens significantly, global financial stresses will build and particularly in emerging economies with high levels of corporate debt that is dollar-denominated.

4. Interest Rates — Federal Funds Rate

As expected the FOMC raised the federal funds rate 25 basis points at its December meeting.

Going forward the debate now revolves around how rapidly the FOMC will raise rates. The expected number of federal funds rate increases is shown in **Table 13**.

Table 13
Number of Federal Funds Rate Increases of 25 Basis Points — FOMC, B of A, GS, Bill’s
“BASE”, Bill’s “Strong Growth”

	2017	2018	2019	2020	Total to Equilibrium	Equilibrium Rate
FOMC - median	3	3	3	1	10	3.00
B of A	2	3	2	2	9	2.75
GS	3	4	4	0	11	3.25
Bill’s BASE	2	2	4	2	10	3.00
Bill’s Strong Growth	3	2	4	3	15	4.25

In its December Summary of Economic Projections (SEP), the median FOMC member view is three additional 25 basis point increases in the federal funds rate in 2017 (1.25-1.50 percent), three more in 2018 (2.00-2.25 percent), three more in 2019 (2.75-3.00 percent), and a long-term equilibrium level of 3.00 percent. In the past the SEP projections have proved to be very unreliable guides to future monetary policy. For example, a year ago the FOMC median projected four increases in the federal funds rate. Only one occurred. The question now is whether, with the economy at full employment and fiscal stimulus in the wings, the FOMC’s projected three rate increases in 2017 might turn out to be an underestimate. The market does not think so. It is projecting one to two rate increases during 2017.

B of A expects two increases in 2017. **GS** is firmly in the three-rate increases camp. Also, **GS** expects a faster pace of tightening than **B of A** and a higher equilibrium level of the federal funds rate of 3.25 percent compared to 3.00 percent for the FOMC and 2.75 for **B of A**.

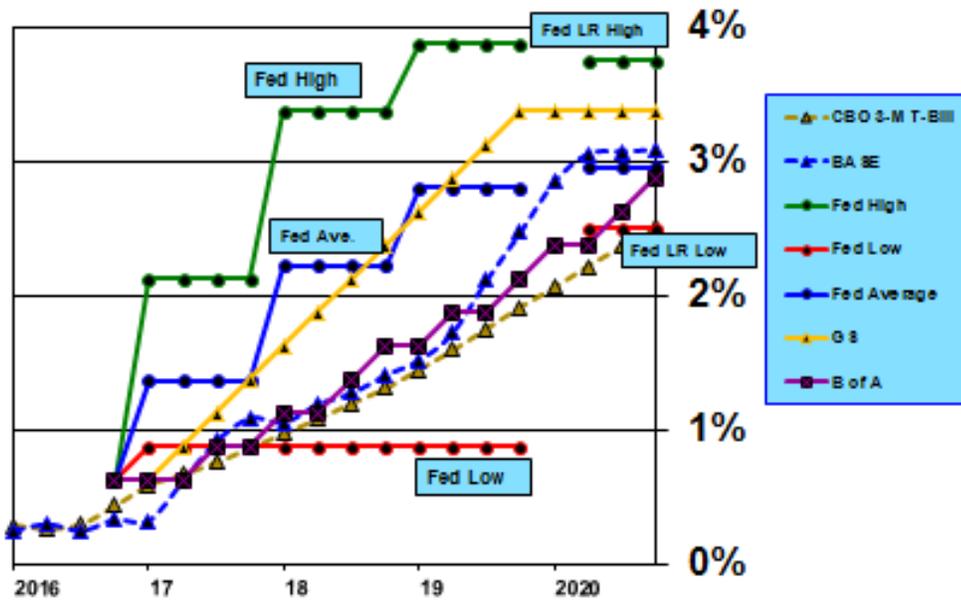
My updated federal funds rate forecast, with the addition of fiscal stimulus, now projects two or three rate increases in 2017 and two additional increases in 2018, followed by four increases in 2019 and two to three more in 2020. By “**BASE**” case equilibrium rate settles at 3.0 percent, the same as the FOMC’s projection. However, the federal funds rate in my “**Strong Growth**” scenario continues to rise to 4.25 percent. Actually, this is not an equilibrium rate but reflects the consequences of a tight monetary policy in an overheated economy — the unemployment rate falls gradually to 4.1 percent in this scenario by 2027, considerably below the NAIRU rate of approximately 4.7 percent.

Even with the recent increase in interest rates market expectations for increases in the federal funds rate, which are embedded in futures and the forward yield curve, are for a slower pace of adjustment in the federal funds rate and a lower equilibrium value than the FOMC’s median and most professional forecasters’ projections.

Chart 27 shows the quarterly progression in the federal funds rate from the present through 2020 implied by the FOMC’s high, low and average projections. It also shows forecasts for **B of A**, **GS**, and my “**BASE**” scenario.

My forecast is at the lower end of the range but tracks **B of A**’s projections quite closely.

CHART 27 – Federal Funds Rate Forecasts



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5. Interest Rates — 10-Year Treasury Note Yield

Chart 28 shows forecasts for the 10-year Treasury note yield over the next ten years. Over time analysts have reduced their forecasts for the ten-year yield. Partly this is a mark-to-market exercise driven by the persistent decline in this yield contrary to expected increases. But the adjustments also reflect a growing consensus that the long-run equilibrium real rate of interest has declined. Analysts still expect long-term rates to rise from the current level, but no longer to as high a level.

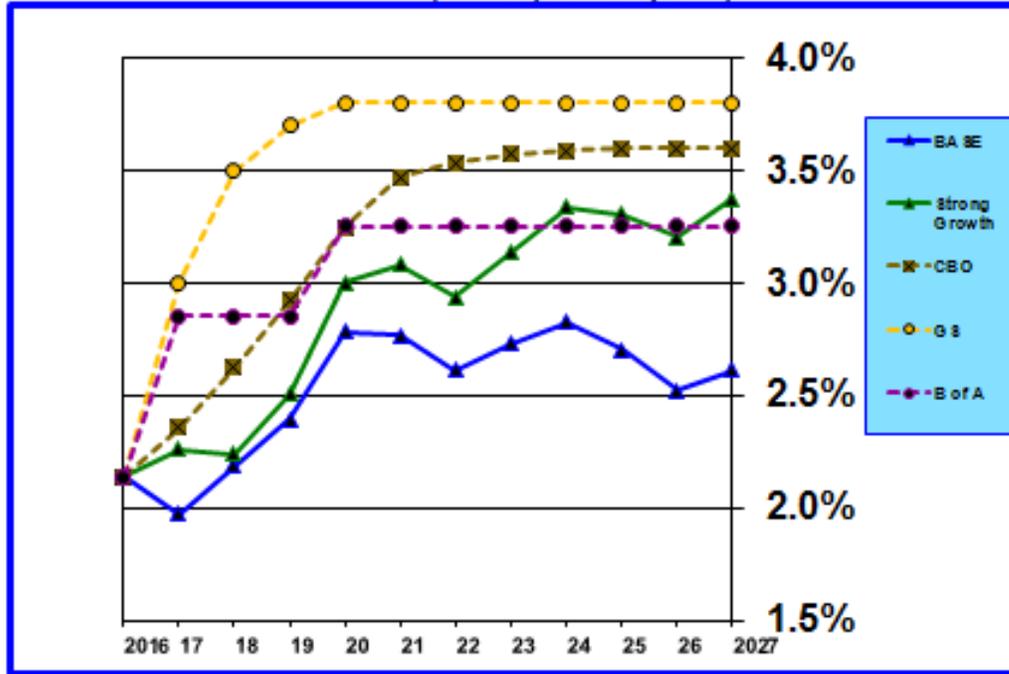
My estimates of values of the long-term neutral federal funds rate and the long-term equilibrium 10-year Treasury rate are shown in Table 14 for various assumed values of the growth rate in total hours worked and productivity, along with the long-term potential real GDP growth rate implied by these assumed values.

The top panel of Table 14 holds growth in total hours worked constant at 0.6 percent annually and shows the impact on neutral federal funds and the equilibrium 10-year Treasury rates for assumed productivity values of 0.9, 1.4, and 1.6 percent. The only change in the bottom panel of Table 14 is in the assumed annual growth rate in total hours worked, which is raised to 0.8 percent.

Until the December 2016, FOMC members had steadily reduced the median estimate of the long-term nominal value of the federal funds rate from 4.25 percent to 2.875 percent — the median value rose to 3.00 percent in December. Based upon my model, as shown in Table 14, my sense is that the FOMC’s median projection for the federal funds rate is reasonable with its estimate of long-term real GDP growth of 1.8

CHART 28 – Ten-Year Treasury Yield

(annual percentage rate)



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Table 14

Long-Term Potential Real Rate of GDP Growth for Various Assumed Values of Growth in Total Hours Worked and Productivity and Corresponding Nominal Long-Term Natural (Neutral) Interest Rates for Federal Funds and 10-Year Treasury Rates

(assumes nominal rate of inflation = 2.0% and economy is at full employment)

	Assumptions		
Potential Real GDP	1.34%	1.76%	1.94%
Productivity	.9%	1.4%	1.6%
Labor Force	.6%	.6%	.6%
	Neutral Nominal Rate		
Federal Funds	2.79%	3.12%	3.26%
10-Year Treasury	2.89%	3.24%	3.38%
	Assumptions		
Potential Real GDP	1.53%	1.96%	2.13%
Productivity	.9%	1.4%	1.6%
Labor Force	.8%	.8%	.8%
	Neutral Nominal Rate		
Federal Funds	3.03%	3.36%	3.49%
10-Year Treasury	3.08%	3.43%	3.57%

to 2.0 percent. My model indicates that a long-term nominal federal funds rate of 3.0 to 3.25 percent is a likely level for the long-term neutral federal funds rate, but it could be lower at 2.75 percent, if productivity remains at the dismal level of 0.9 percent that it has averaged over the last ten years. This also means that the real neutral interest rate, assuming inflation is 2.00 percent, would be 1.0 to 1.25 percent.

Assuming an inflation rate of 2.0 percent, my model indicates that the 10-year neutral rate should be in a range of 3.25 percent to 3.50 percent. The long-term neutral rate is 3.80 percent for **GS**, 3.25 percent for **B of A** and 3.6 percent for **CBO**. These estimates do not differ materially — all fall within a range of 3.25 percent to 3.80 percent.

However, my forecasts for the 10-year yield in my “**BASE**” and “**Strong Growth**” scenarios, which are shown in **Chart 28**, are lower because my forecasts of inflation are lower than 2.0 percent. The range in my actual forecasts is 2.50 percent to 3.25 percent, rather than 3.25 percent to 3.50 percent that my model says would prevail if inflation were 2.0 percent.

Over the next four years my model forecasts that the 10-year yield will rise 73 to 94 basis points from its estimated January level of 2.11 (actual January level was 2.44 percent, which means that the four-year increase would be a smaller 40 to 61 basis points) to 2.84/3.05 percent (see **Table 15**). The favorable effects of slowing labor force growth, *based upon CBO’s assumptions*, and improving financial conditions are more than offset by the negative effects of firming inflation, a reduced full-employment labor gap, and improving productivity.

Table 15 Changes in 10-Year Treasury-Note Yield (Basis Points)

Table 15
Changes in 10-Year Treasury-Note Yield
(Basis Points)

	STRONG GROWTH					
	Labor Growth	Labor Gap	Productivity	Inflation	Financial Conditions	Total
2017-2020	-109	64	36	135	-31	94
2021-2027	-4	4	43	7	-16	34
2017-2027	-113	68	78	141	-47	128
	BASE					
2017-2020	-119	62	30	130	-31	73
2021-2027	-4	-19	30	-14	-15	-20
2017-2027	-123	44	60	116	-46	53

After 2020, with slowing employment growth and benign inflation there is little upward pressure on the 10-year yield in the “**Strong Growth**” scenario other than potential improvements in productivity. The 10-year yield actually falls quite a bit in the “**BASE**” scenario because of weaker employment growth, a somewhat large employment gap, and lower inflation.

APPENDIX

Outlook — 2017 and Beyond — Forecast Summary for the U.S. and the Rest of the World, Highlights of Key Issues, and Identification of Risks

Observations about the 2017 U.S. and global economic outlook and risks to the outlook are listed below. As events unfold during 2017, this will enable the reader to track my analytical prowess. Observations which are on track are denoted by “+”; observations not on track are denoted by “-”; indeterminate observations are denoted by “?” and general observations are denoted by “✓”.

1. **U.S. — February Assessment:** Strengthening growth; surging consumer, business, and investor optimism; increased political uncertainty stemming from new U.S. president and Republican-controlled Congress; survey data have been much stronger than hard economic data reports, but better economic data should follow improved optimism
 - ✓ **Citi data surprise index has risen a high positive level so far in 2017**
 - ✓ **ECRI weekly leading index is up sharply in early 2017**
 - ✓ **In an unusual development economic and political uncertainty has soared while financial market volatility has declined — usually the two are positively correlated**
 - **2017 real GDP Y/Y** growth projections range from 2.0% to 2.4%. The FOMC’s central tendency Q4/Q4 projections range from 1.9% to 2.3%. (Q4/Q4 projections are highly dependent upon potential anomalies in Q4 data; therefore, Y/Y estimates, which average all four quarters, usually are more stable estimates.) Risks are tilted to the upside because of fiscal policy activism to cut taxes and increase infrastructure spending.
 - ? *B of A’s Q1 forecast is 2.0% - its current tracking estimate is 2.1%*
 - ? *GS’s Q1 forecast is 2.2%*
 - **Real GDP output gap** will remain high, but will narrow considerably during 2017 from about 1.2% to 0.5% to 0.8%. (The exact size of the output gap will be revised by CBO, probably in February 2017 and again in August 2017).
 - ? *CBO in its January update reduced the size of the 2016 Q4 output gap from 1.2% to 0.9%; the revised end of 2017 output gap should be in a range of 0.5% to 0.7%*
 - **Potential structural rate of real GDP growth** has declined significantly in recent years. I expect potential growth to be about 1.3% to 1.4% in 2017. Long-term potential real GDP growth will edge up in coming years to between 1.75% and 2.0%.
 - ? *Based on updated CBO data, I now expect potential GDP growth in 2017 to be 1.5% to 1.6%*
 - **Productivity** should rise during 2017 from near zero in 2016 but is still likely to be less than 1.0%, as growth improves and investment increases; it will fall well short of the historical 2.1% average.
 - ? *2016 productivity was 0.2% Y/Y and 1.0% Q4/Q4; Y/Y productivity growth in 2017 could be as high as 1.2%*
 - **Employment** growth should slow considerably during 2017; now that full employment has been reached actual employment growth should closely track growth in the labor force; payroll growth should average 125,000 to 150,000 per month.

- ? *January payroll employment growth was a very strong 227,000*
- ? *January household employment growth declined -30,000*
- ? *Evercore ISI temporary and permanent employment surveys remain strong, but have edged down from an average of 60.1 in December to 58.2 in February (a value above 50 is favorable)*
- **Employment participation** will resume a gradual decline during 2017 due to demographically-embedded retirements of baby boomers.

? *Participation grew from 62.67% in December to 62.86% in January*
 - **Unemployment rate** should edge down slightly to between 4.3% and 4.5%.

? *U3 unemployment rate in January was 4.78%*
 - **Wage growth** should edge up slightly during 2017 to a range of 2.7% to 3.1%.

? *BLS Y/Y wage growth for all employees in January was 2.57%*

? *Atlanta Fed wage tracker declined from 3.8% in December to 3.2% in February*
 - **Nominal consumer disposable income**, measured on a Y/Y basis should slow as employment growth slows; this will be offset partially by an increase in average hourly wage rates; growth should be in a range of 2.75% to 3.25%.
 - **Nominal consumer spending growth** on the Y/Y basis will rise due in part to upward pressure on inflation in a range of 3.5% to 4.0%.

? *University of Michigan Survey of Consumers sentiment index fell to 95.7 in February compared to 98.5 in January; the post-election high was 98.2 in December ; improved confidence since the election is solely the result of those identify themselves as Republicans, confidence among Democrats has declined sharply*

? *Conference Board consumer confidence index declined to 111.8 in January from 113.3 in December*

? *Evercore ISI's index of company surveys was 50.6 on February 17 compared to 50.1 on December 30*

? *Retail sales exceeded expectations in January*
 - **Household personal saving rate** will decline slightly as growth in spending exceeds growth in disposable income in a range of 5.0% to 5.5%.
 - **Stock prices**, as measured by the S&P 500 average, should be between 5% higher or 10% lower, on the downside reflecting rising wages, slowing growth in profit margins and rising short-term interest rates and on the upside reflecting growth friendly fiscal policy; there is analysis indicating that U.S. stock prices are overvalued as 2017 commences.

? *The S&P 500 stock index was up 5.7% as of February 24 as the Trump rally continues*
 - **Manufacturing** will continue to be weak with the PMI index just slightly above or below 50, reflecting the negative consequences of dollar strength.

? *Manufacturing production has expanded over the past four months*

? *The NFIB optimism index skyrocketed to 105.8 in January and 105.9 in February, the highest level since December, 2004*

? *ISM manufacturing index improved to 56.0 in January from 54.5 in December (a value above 50 is favorable)*

? *ISM non-manufacturing index fell slightly in January to 56.5 from 56.6 in December (a value above 50 is favorable)*

? *GS analyst index eased to 58.8 in January from 60.7 in December (a value above 50 is favorable)*

- **Business investment** spending growth should improve and be in a range of 1.0% to 3.0%.
 - ? *Small business plans to increase capital spending rose along with the increase in optimism in January but declined in February*
 - ? *C&I lending standards are stable which is favorable for investment spending along with the improvement in optimism*
- **Residential housing investment** should be about the same in 2017 as it was in 2016 in a range of 3% to 6%; housing starts should rise 2% to 5%.
 - ? *ISM non-manufacturing index fell slightly in January to 56.5 from 56.6 in December (a value above 50 is favorable)*
 - ? *NAHB housing market index declined from 67 in January to 65 in February (a value above 50 is favorable)*
- **Residential housing prices** should rise more slowly in 2017 in a range of 2% to 4% in 2016.
 - ? *Annualized housing starts in January were 8.7% above the 2016 total*
- **Trade deficit** should rise in 2017 as the increase in the value of the dollar depresses exports and increases imports.
- The **dollar's value** on a trade-weighted basis should rise due to stronger economic growth and higher interest rates relative to other developed economies.
 - ? *Trade-weighted dollar was down -0.8% in January from December*
- **Oil prices** are likely to trade in a narrow band of \$40 to \$55 per barrel because abundant and flexible supply in the U.S. will constrain prices if global demand accelerates.
 - ? *Oil prices averaged about \$53 a barrel in January*
- **Monetary policy** — the Federal Reserve will raise the federal funds rate one to three times during 2017 in 25 basis point increments.
 - ? *Odds of a 25 basis point increase at the March FOMC meeting are about 30%; a May or June increase is likely*
 - ? *Financial conditions eased a little in January; however, commercial real estate lending standards are tightening*
- **Total inflation** measures (CPI and CPE) will be relatively stable in 2017: CPI will rise 2.0% to 2.4% and CPE will rise 1.7% to 2.0%.
 - ? *Total CPE inflation in 2016 was 1.62%*
- **Core PCE inflation** will rise slightly in a range of 1.6% to 1.9%, reflecting global disinflationary trends offset somewhat by the closing U.S. employment and output gaps.
 - ? *Total core CPE inflation in 2016 was 1.70%*
- The **10-year Treasury rate** is likely to fluctuate in a range between 1.75% and 2.75% in 2017. Faster than expected real GDP and employment growth would push the rate toward the top end of the range; greater than expected declines in inflation and/or heightened financial instability would push the rate toward the bottom end of the range.

? *The 10-year Treasury yield was 2.31% on February 24 compared to 2.45% on December 31, 2016*

- **Fiscal policy** will have a positive impact on real GDP growth during both fiscal year and calendar year 2017, raising real GDP growth by 0.2 to 0.3%.
- The **deficit** as a percentage of nominal GDP will increase substantially from fiscal year 2016's level of 3.15% to a range of 3.50% to 4.25%. Stronger than expected growth and delayed implementation of tax cuts and infrastructure spending would push the deficit toward the lower end of the range.

? *CBO's revised budget deficit projection for fiscal 2017 is 3.10%; my current estimate is 3.26%, which assumes Congress cuts taxes and increases infrastructure spending*

- **State and Local investment** spending growth should range between 1.0% and 1.5%.

2. **Rest of the World: January Assessment:** Stronger economic activity and much improving confidence.

✓ *Citi global surprise index is up sharply so far in 2017*

✓ *GS's current activity index indicates that the pace of global growth for major advanced economies has accelerated from 1.5% last summer to 2.7% in December*

- **Global growth** is likely to improve to 3.4% in 2017 from 3.0% in 2016. However, due to political instability in Europe and the possible negative impacts of a strong dollar on emerging market economies, risks are tilted to the downside.
- **European growth** will be positive but will likely fall short of the consensus 1.4% because of potential social and political disruptions, but a decline in the value of the euro would have favorable consequences.

? *Eurozone manufacturing PMI index has improved to its best level of 56.0 since 2010 during the recovery from the Great Recession*

- **European inflation** will rise from 2016's 0.2% but will probably fall short of the expected 1.2%.

- *Thanks to rebounding energy prices, the inflation forecast has been boosted to 1.6%*

- **European financial markets** should be relatively stable with periodic episodes of volatility prompted by specific events, such as the French and German elections or a potential banking crisis in Italy.
- **European political dysfunction, populism and nationalism** will continue to worsen gradually. Countries to watch closely include France, Italy, the Netherlands, Greece, Spain, and Portugal. Germany's election will occur toward the end of 2017 and could be significant, depending upon whether political and social turmoil escalates in other parts of Europe earlier in the year.

? *Dutch elections are scheduled for March 15; Geert Wilders far right Party for Freedom is leading the polls with about 30%, which is not enough to assure formation of a government, however, it might be able to forge a government with a new Euroskeptic Forum for Democracy Party that is growing rapidly in popularity — the possibility of a Dutch referendum on European Union membership could become reality*

? France's Marine Le Pen of the right wing National Front Party is leading the April 23 presidential election polls with 27%, with the next two candidates commanding 20% each; however, she is likely to lose the second round of voting on May 7; historically, the centrist parties engineer the outcome of the parliamentary elections, which follow the presidential election on June 11 and 18, to shut out candidates of extreme left and right parties — that might not happen this time, thus it is possible that the right will lose the presidential election but win the parliamentary election, producing a stalemate and probable political crisis — Le Pen has promised a referendum on European Union membership

? Germany holds bundestag elections on September 24; while it is assumed that Angela Merkel will prevail, the tides of populism and nationalism and the outcomes of the Dutch and French elections could undermine her support; a grand coalition government remains the likely outcome, but could be led by the SPD party rather than Merkel's CDU (Christian Democratic Union) party

? Italy is not scheduled to hold elections until 2018, however an evolving rift in former prime minister Renzi's party could accelerate elections to this year

? While Greece has faded from the news and appears to be complying, albeit grudgingly, with creditor bailout requirements, the real test will come during the summer when Greece is required to make payments for which bailout funds might be insufficient

- **U.K. growth** is expected to decline to 0.9% in 2017 compared to 2.0% in 2016 as Brexit consequences begin to develop.

? Prime Minister May has promised to initiate the two-year time frame for U.K. withdrawal from the European Union by the end of March; increasingly a “Hard Brexit” outcome appears likely

- Expected 2017 GDP growth has been marked up to 1.4%

- **China's GDP growth** is expected to be 6.6% but risks are to the downside.
- **China's leadership** will continue to be slow in implementing **economic reforms** but financial and political stability will be maintained.
- **Japan's** economic policies will continue to fall short of achieving the 2.0% inflation target; inflation is expected to rise from 0.2% in 2016 to 1.2% in 2017. GDP growth will also continue to fall short of the policy target, but is expected to rise from 1.0% in 2016 to 1.5% in 2017. Population decline and slow implementation of market reforms will continue to weigh heavily on both growth and inflation.

- Expected 2017 inflation has been marked up to 1.3%

- **India** should continue to experience relatively strong real GDP growth in a range of to 7.0% to 8.0% in 2017.
- **Emerging market countries** should experience better growth in 2017 than in 2015 and 2016 when falling prices for commodities depressed economic activity in many countries. Growth is expected to improve from 2.6% in 2016 to 3.5% in 2017. However, a major downside risk is a strong dollar, particularly for emerging economies that have large amounts of dollar-denominated debt.
- **Brazil, Russia, and Venezuela, in particular**, will continue to struggle with the consequences of the steep decline in the prices of commodities and particularly in the price of oil.

? Expected 2017 GDP growth for Brazil is 1.0%

3. **Risks** – stated in the negative relative to the forecast (**+ risk realized; - risk not realized**).

February Assessment: No significant positive or negative risks have surfaced so far in 2017

- **U.S. potential real GDP growth** falls short or exceeds expectations; falling short is the more serious risk
- **U.S. employment growth** is slower or faster than expected; slower growth is the more serious risk
- **Employment participation rate** rises rather than remaining stable or falling modestly
- **U.S. hourly wage rate growth** falls from its 2016 level of 2.6% or rises much more rapidly than expected; falling wage growth is the more serious risk
- **U.S. Unemployment rate** rises
- **U.S. productivity** remains below 1%
- **Real U.S. consumer income and spending** increase less or more than expected; less than expected increases are the more serious risks
- **U.S. stock prices** fall more than or rise more than the expected range of -10% to +5%
- **Growth in U.S. residential housing investment and housing starts** are less than or more than expected; below expectations is the more serious risk
- **U.S. residential housing price increases** are less than expected
- **U.S. private business investment** does not improve as much as or more than expected; falling short of expectations is the more serious risk
- **U.S. manufacturing growth** contracts or expands more than expected; contraction is the more serious risk
- **U.S. trade deficit** does not widen as expected
- **Value of the dollar** rises substantially and triggers a global dollar squeeze
- **Oil prices** rise above or fall below the expected range
- **U.S. monetary policy** tightens more than 75 basis points, spawns financial market uncertainty and contributes to global financial instability
- **Financial conditions** tighten and cause financial market volatility
- **U.S. inflation** falls or rises more than expected
- **U.S. interest rates** fall *or* rise more than expected
- **U.S. fiscal policy** is more expansionary than expected
- **Federal budget deficit** increases more than expected
- **U.S. state and local spending** does not rise as fast as expected
- **Global GDP growth** does not rise as fast as expected
- **Global trade** declines as the U.S. and other countries pursue protectionist policies
- **European growth** is considerably less than expected
- **ECB's** quantitative easing program is not successful in raising inflation and stimulating the European economy
- **Europe** — financial market turmoil reemerges

- **Europe** — political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union
- **Chinese** leaders have difficulty implementing **economic reforms**
- **China's growth** slows more than expected
- **Japan** — Abenomics and monetary policy are unsuccessful in raising inflation to the 2 percent target and economic growth continues to be below expectations
- **Emerging economies** — a strong dollar leads to serious difficulties especially for countries with large amounts of dollar-denominated debt.
- Severe and, of course, unexpected **natural disasters** occur, which negatively impact global growth

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