



**Our  
Perspectives:**  
Commentary on the economy & regulatory  
policies affecting financial companies

**Barnett  
Sivon &  
Natter, P.C.**  
ATTORNEYS at LAW  
WASHINGTON, DC

## The Longbrake Letter\*

Bill Longbrake

April, 2016

### **I. Policy Intervention Has Calmed U.S. and Global Financial Markets; U.S. Data Are a Mix of Strength and Weakness; Global Downside Risks Continue Their Slow Build Up**

2016 began with a full-scale global financial market panic. But, as we enter the second quarter and pass income tax day in the U.S., panic is now a distant memory. Calm has returned to financial markets; fears of an imminent implosion of China's economy have been replaced with guarded optimism; rampant capital outflows and free-falling currency exchange rates in emerging markets have abated; financial conditions have eased substantially; and oil and other commodity prices have recovered most of the losses incurred at the beginning of the year. Risk-taking is again in vogue.

On April 12, the International Monetary Fund (IMF) released its biannual World Economic Outlook. While the IMF continues to expect solid global growth, it marked its 2016 global growth forecast down from 3.4 percent to 3.2 percent. Inflation forecasts were also downgraded and deflation risks increased. The IMF now sees a 35 percent chance of deflation in Europe, a 20 percent chance in Japan, and a 10 percent chance in the U.S. The IMF expects global growth to improve slightly in 2017 to 3.5 percent, driven primarily by emerging markets. But this bit of optimism was immediately followed in the executive summary by: "*But uncertainty has increased and risks of weaker growth scenarios are becoming more tangible . . . prospects across countries remain uneven and generally weaker than over the past two decades . . . trade growth has slowed down noticeably . . . unfavorable demographic trends, low productivity growth, and legacies from the global financial crisis continue to hamper a more robust pickup in activity.*"

Does this mean that fundamental imbalances have dissipated or, alternatively, does credit go to policy-makers? Nothing of real consequence has occurred in the last month to change the existence or magnitude

---

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

of most of the global imbalances. However, it is plausible, even likely, that markets overreacted and inflated the expected consequences stemming from correction of the imbalances. Optimists were ready to take advantage of extreme oversold market conditions and all they needed to swing into action was policy reassurance. And that is what happened.

While perhaps a bit of a simplification, the catalysts for the global market crisis were the collapse in commodity prices, a tightening U.S. monetary policy, a strengthening dollar, and excessive debt leverage, particularly in dollar-denominated liabilities, in emerging economies. The key policy change, which catalyzed market stabilization and the return of optimism and risk taking, was the implied reversal of an expectation of tighter U.S. monetary policy. The Federal Open Market Committee (FOMC) raised the federal funds rate by 25 basis points in December, the first increase in seven years, and signaled its intent to raise the federal funds rate by a further 100 basis points during 2016. During January's financial panic, the market priced out all rate increases during 2016. Although there was no official endorsement by the FOMC of such an outcome, members did not discourage the view that U.S. monetary policy would be easier in 2016 than implied in the December FOMC policy statement and economic projections. At its January meeting, the FOMC signaled its concern about global financial and economic conditions. At its March meeting it reaffirmed that concern and reduced projected increases in the federal funds rate during 2016 from 100 basis points to 50. In addition, Chair Yellen provided dovish guidance in a speech she delivered on March 29.

Prospects of easier U.S. monetary policy prompted a weakening in the value of the dollar. The trade-weighted value of the dollar fell 4.2 percent from the end of January to the end of March. A weaker dollar had an immediate and dramatically favorable effect on emerging market currency exchange rates and financial flows. This was followed by a reversal in prices of key commodities from the oversold levels reached during the panic. This reversal was helpful to many emerging economies which depend to a substantial degree on exports of commodities.

In Europe policymakers have made some progress in containing the politically-volatile issue of immigration and the ECB has implemented aggressive policies which will help prop up fragile European banks, particularly those in Italy.

So, the risk of U.S. and global recession, at least as measured by financial conditions, has declined considerably. But imbalances remain and for the most part policy has bought time rather than contributing to the unwinding of imbalances.

Reflecting upon the events of the last few weeks, it's difficult to discern where the U.S. and global economies may be headed in coming months and just how fragile global financial markets really are. Part of the difficulty in assessing prospects has to do with the unprecedented intervention of central banks in all major developed economies in engaging in quantitative easing and forcing down interest rates. There is absolutely no historical experience to draw from. Academic theories are supportive of the policies that have been undertaken. But, the theories may turn out to be deeply flawed or flat out misguided. It's a huge bet, so the consequences could be quite dire if the bet turns sour.

Long-term market watchers are mystified at the recent strength of the U.S. stock market which has now reached a decidedly overbought position. Technical analysis indicates that there is little of substance in the traditional sense, such as earnings prospects, supporting the current level of prices. What seems to be supporting stock prices and optimism is belief that monetary policy will cure all that ails the economy.

In recent months this belief has wavered twice or three times if you go back to late 2014. During each of these three market swoons, the FOMC has stepped in with soothing words that implied easier monetary policy, which was subsequently followed by actual policy easing, and the market has quickly recovered. This monetary policy “put” (previously known as the Greenspan “put,” the Bernanke “put,” and now, perhaps, the Yellen “put”) and its periodic reiteration has become the primary driver of asset prices rather than underlying economic fundamentals. If it turns out that recent monetary policy is all about vacuous and unrealizable promises of better days to come rather than real substantive medicine, which will heal and strengthen the economy, at some point market participants’ faith will not only waver but could disappear. This is the bear scenario that a few expect inevitably lies somewhere in the future. We can hope that the bears are extreme pessimists who have misjudged what is going on. But, prudence argues for caution and vigilance and avoiding getting caught up in group think and uncritical faith in the power of monetary authorities to fix what ails the world.

## II. Status of My Recession Watch

My “*Recession Watch*” continues, but as of this time an actual recession does not appear to be an imminent threat. Nonetheless, global imbalances remain substantial. Monetary policies have engineered a semblance of calm. But, policies needed to reduce imbalances are not being deployed.

### 1. IMF’s World Economic Outlook Assumptions and Risk Assessment

IMF’s World Economic Outlook<sup>1</sup> is predicated on assumptions which are highly uncertain and have weakened in the past few months.

- Gradual normalization of conditions in several economies currently under stress.
- Successful rebalancing of China’s economy with trend growth rates that remain high.
- Pickup in activity in commodity exporters, but rates more modest than in the past.
- Resilient growth in other emerging market and developing economies.

IMF cites several heightened risks:

- Tighter financial conditions in advanced economies, if sustained, could further weaken growth, with risks of a stagnation scenario with persistent negative output gaps and excessively low inflation.
- Further exchange rate depreciation and declining capital inflows could force a rapid slowdown in growth in emerging market economies.
- Protracted low oil prices could further destabilize the outlook for oil-exporting countries.

---

<sup>1</sup>International Monetary Fund. “World Economic Outlook — Executive Summary,” April 2016. Entire report is available free of charge on the Internet.

- China's economic rebalancing process could be bumpy.
- Shocks of a noneconomic origin — related to geopolitical conflicts, political discord, terrorism, refugee flows, or global epidemics — loom over certain countries and regions.

To avoid realization of these risks, the IMF states that three sets of policy responses are necessary: (1) structural reforms, (2) growth-friendly fiscal support, and (3) continued monetary policy accommodation. For the most part, the first two sets of policy interventions are missing in action. To date, almost the entire weight of policy intervention has fallen on monetary policy. It is increasingly evident that monetary policy is creating distortions and speculative excesses in financial markets which are having consequences for economic activity.

## 2. Charles Gave's Recession Indicator

In late 2015, Charles Gave's recession indicator was signaling a high probability of recession by mid-2016. Since then this indicator has improved sharply and is no longer forecasting imminent recession.<sup>2</sup> This is the first time this indicator has given an apparently false recession signal. There are two possible explanations. The first is that the structure of the economy may have changed in ways that are not fully captured by the indicator, perhaps a greater impact of services relative to manufacturing in overall economic activity. Industrial production is a key variable in Gave's recession indicator. A second explanation is that the indicator is sound but that aggressive monetary policy intervention reversed negative sentiment, but without necessarily changing underlying recession risks. Several of the variables in Gave's indicator measure financial conditions, which eased considerably after the Federal Reserve acted to weaken the exchange value of the dollar.

Gave continues to believe that policy manipulation of interest rates has caused a massive misallocation of capital into speculative assets and away from productive assets. This systematically raises the price of existing assets but depresses productivity, resulting in secular stagnation. Or, as Gave pithily states: "*Low interest rates cause secular stagnation; they do not cure it.*"

Gave is firm in his conviction that recession is coming, but not as quickly as he expected.

## 3. Rich Ross's Technical Market Analysis

Rich Ross is a technical market analyst for Evercore ISI. In the long run prices of assets are driven by fundamentals such as earnings growth and interest rates. But, in the short run, prices can oscillate materially based on emotion and sentiment. A technical analyst's craft is to devise measures that capture when markets are overbought or oversold relative to longer term trends that are driven by fundamentals.

As is the case with Charles Gave's recession indicator, technical analysis is effective when stable behavioral patterns prevail. Policymakers can throw a wrench into the mix and alter behavioral patterns when they act in unexpected ways. This is exactly what occurred in February when policy actions led to a significant and unexpected weakening in the exchange value of the dollar, which has caused Rich Ross's

---

<sup>2</sup>Charles Gave. "Updating the US Recession Indicator," GavekalResearch, April 11, 2016.

technical analysis to be “wrong.” However, he is sticking to his guns and resisting the urge to throw in the towel.

So, what does Rich Ross’s technical analysis indicate?<sup>3</sup> For starters, the market is at an extreme overbought position. But favorable sentiment is very strong and is imparting significant positive momentum that can persist for a long time. In his own words: “*I continue to believe that tales of the Dollar’s demise have been exaggerated and that several key commodity currencies have reached critical inflection points at the tail end of heroic advances which hold the potential in coming days and weeks to mark the end of the current phase of the countertrend surge.*”

Stock prices, as measured by the S&P 500 average, peaked at 2130.82 on May 21, 2015. Since that time each rally following a pullback in prices has peaked at lower highs: 2128.28 on July 20, 2015; 2109.79 on November 3, 2015; 2102.63 on December 1, 2015; and 2100.80 on April 19, 2016.

Stock prices depend in the long run on earnings and interest rates. Earnings momentum has faded and interest rates are very low. Rates could go lower still, but that would imply a weakening economy, increased deflation prospects or a combination of both. The implication is that stock prices have very little upside potential. With prices now near the top end of the trading range that has prevailed for the last year, price movement risks are skewed to the downside.

#### 4. Zanny Minton Beddoes — Editor-in-Chief, *The Economist*

On April 18, 2016, Zanny Minton Beddoes, editor-in-chief of *The Economist*, delivered an address, “Making Sense of the Global Economy,” to the Association of Governing Boards in Washington, D.C.

She articulated three interrelated economic and geo-political trends that are very worrisome: (1) the world economy is pretty weak; (2) significant geo-political dangers exist, particularly in the Middle East; and (3) the rise of the politics of anger involving a populist attack on the establishment and middle-of-the-road consensus.

Three shocks have weakened the global economy: (1) build up in debt relative to GDP in virtually everywhere which has only gotten worse since the Great Recession; (2) profound technological revolution which has contributed to income inequality and reduced the demand for capital-intensive investment; and (3) adverse demographic trends in many countries. These shocks have combined to increase saving, decrease demand for goods and services, and reduce investment. A visible consequence is very low interest rates.

Policy response has relied primarily on monetary policy which has driven up asset prices. Weak demand has resulted in stagnant wages. Both developments have fostered growing wealth and income inequality and fueled anger.

Beddoes then recounted the abundant global risks. For example, strategically China needs to restructure its economy to emphasize consumption relative to investment. China has begun this transition but rapidly slowing growth has been worrisome and has prompted a tactical shift back to emphasizing credit-fueled investment to stabilize growth. This tactical shift is not sustainable and will exacerbate imbalances in the Chinese economy. Politically, Chinese President Xi continues to pursue his anti-corruption campaign

---

<sup>3</sup>Rich Ross. “Sum of the Charts: “Feeling the Bern,” Evercore ISI, April 14, 2016.

which increasingly is drifting toward a cult of personality and dismantling the three-decade old consensus decision making approach. Where all of this will lead remains to be seen, but the risks have increased.

Two emerging market economies — Brazil and Russia — are in serious economic difficulty. With the exception of India, other emerging market economies are beset by elevated debt levels and vulnerable exchange rates. Japan can't get out of its slow growth trap.

Beddoes' overall message was not one of gloom and doom but one that global economic and political arrangements are undergoing significant change. Imbalances are considerable, outcomes are unclear, and risks are high.

## 5. U.S. Economic Activity Data Are Mixed, But With Hints of Increasing Weakness

Employment growth (both numbers and hours) has been very strong but GDP growth continues to be weak. Employment is growing at a 2.0 percent annual rate while first quarter real GDP is expected to grow less than 1.0 percent bringing the past 12-month growth rate down from 2.4 percent to 2.2 percent. This implies negligible productivity growth. As the labor market approaches full employment, however, growth is likely to slow. The length of the workweek is already shortening slightly, which, if that continues, will combine with slower employment growth to depress growth in disposable income and consumer spending.

Capital expenditure growth is decelerating and this trend is not solely due to the plunge in energy-related investment. Low capital investment and low productivity are linked.

Consumer spending growth should be rising in tandem with strong employment growth. It is not. Nominal spending growth has been slowing for over a year and more recently real spending growth has also turned down as inflation has firmed. Wages increases have accelerated a bit but to a much lesser extent than expected.

Industrial production has been declining in large part due to the strong dollar. The recent weakening in the dollar is helping stabilize the manufacturing sector. However, the small business optimism index, compiled monthly by the National Federation of Independent Businesses, has declined steadily for the last 15 months to a very weak historical level. Evercore ISI's company survey index has also been declining over the last year and has fallen below the critical 50.0 level to 48.0. In addition, a recent Evercore ISI survey indicates that business inventories are at the highest level in the past two years.<sup>4</sup>

Services continue to expand but some slowing in growth is also evident in this sector.

Global oil supply exceeds demand by 1.4 million barrels per day and oil inventories are at record levels. The OECD leading indicator of global economic activity has been declining over the past year and is at the lowest level since 2009 during the Great Recession.

All-in-all slower growth in coming months seems likely. While the probability of recession at the moment is low, the trend toward slower growth and the existence of significant unresolved global imbalances merit maintaining a "***Recession Watch.***"

---

<sup>4</sup>Oscar Sloterbeck. "Evercore ISI Company Surveys — How Are Inventory Levels at Your Company?" Evercore ISI, April 11, 2016.

### III. The Phenomenon of Donald Trump and Bernie Sanders — Rejection of the Established Political Elite By a Substantial Portion of the Electorate

Political analysts have been surprised by the direction of this year's presidential election campaign. Mainstream Republicans did not expect Donald Trump to poll so strongly that he has real potential to become the party's presidential nominee. Democratic leaders are surprised at the strength of Bernie Sanders, who is an avowed socialist.

As is usually the case when unanticipated events occur, deep probing by analysts reveals logical reasons for what is happening. Many of the reasons turn out to be pretty obvious and could have been anticipated. We see this phenomenon all the time in economic activity. We are captives of past experience and relationships and fail to discern evolving trends and developments until something occurs that contradicts our expectations. Then we are forced to reassess and that reassessment begins the process of trying to understand the longer run implications of shifting trends.

It is now evident that the rise of Donald Trump is not accidental. No credit should be given to Donald Trump based on his personality for his success. Changes in American culture and politics have been building for many years with a significant component of the electorate. The parade was well underway. Donald Trump just happens right now to be the leader who best meets the concerns and anger of this part of the American electorate. The parade has found a leader.

#### 1. Forces Driving Political Change

According to Jay Ogilvy, several forces are responsible for the political upheaval that is underway and which is disrupting the post-World War II political governance paradigm.<sup>5</sup> This is a global phenomenon, not just an American one.

Ogilvy poses four trends — two obvious, two less so, which have given momentum to Trumpism and populism. The rise of populism is a global phenomenon and is not limited simply either to the right or the left of the political spectrum. Individual political leaders, such as Donald Trump, Bernie Sanders, Marie Le Pen, and others have simply capitalized on the populist anger of an increasing portion of the electorate.

First, *economic stagnation and globalization* have depressed the standard of living of unskilled workers and exacerbated job insecurity. For example, inflation-adjusted manufacturing wages in Michigan have declined 25 percent since 2003.<sup>6</sup> Globalization has shifted many unskilled jobs to emerging markets with low labor costs. Thus, it is not surprising that Trump and Sanders are pandering to the anxieties of their respective constituencies and opposing free trade. As a consequence, ratification of the Trans-Pacific Partnership trade treaty by the U.S. Senate, is increasingly unlikely.

But, the accelerating impact of technology and innovation is also contributing to job insecurity.

Policy responses to date have served primarily to reinforce anger, fear and disaffection. Adhering to

---

<sup>5</sup>Jay Ogilvy. "Trumpism Without Trump," *Stratfor Global Affairs*, March 30, 2016.

<sup>6</sup>Steven Rattner. "By Opposing Obama, the Republicans Created Trump," *The New York Times*, April 13, 2016.

the dogma of limited government and tax and spending cuts, Congress has missed a needed opportunity to enact legislation to fund job training and wage insurance programs, has cut safety net programs, and has done little to address wide-spread drug addiction other than attempting to stanch the distribution of addictive substances.<sup>7</sup>

By relying solely on monetary policy, which has driven up asset prices, income and wealth inequality has worsened considerably.

Second, economic stagnation and anxiety has contributed to a surge in *nationalism* and tribalism. In Europe, the refugee surge from the Middle East and northern African, coupled with blatant terrorist attacks, have fueled a surge in nationalism that is undermining political support for the centrist political dream of a united Europe. Parties on both the right and the left in various countries have gained increasing traction. While none of these parties has gained power, their presence is forcing policy changes in centrist parties. The policy of a borderless Europe, enshrined in the Schengen Treaty, is eroding rapidly.

This is not solely a European phenomenon. In the U.S. a similar phenomenon has developed for similar reasons and is focused on U.S. immigration policy. And, it has interconnected with America's historical scourge of *racism*.

Third, according to Ogilvy, institutionalized political power flows from *dominant institutions*, but over the broad sweep of history, dominant institutions rise and fall. Over a very long time power has shifted from religious organizations to political organizations embodied in the nation state. In more recent times, Ogilvy asserts that power has been shifting from the "Political Era" led by heads of state to corporate CEO's in what he calls the "Economic Era." Ogilvy cites Mancur Olson's view in *The Rise and Decline of Nations* that "... *special interests become entrenched over time, and their demands end up distorting the dynamics of the market.*" This results in crony capitalism that rigs the system to favor a few. While Donald Trump probably is a beneficiary, he has very effectively tapped into the anger over the rigged system that traditional political leaders and Wall Street has built. Although Bernie Sanders can probably not be accused of being a beneficiary, he has tapped into the same anger toward the political establishment and Wall Street. Bernie loves to bash banks.

Ogilvy's commentary about the declining power of heads of state seems consistent with observed phenomena. However, replacement by heads of corporations is less clear. The rationale is that markets increasingly transcend national borders and that the locus of power in the future will be much broader than the nation state. But, nationalism is pushing in the opposite direction toward more homogeneous populations, usually with a smaller geographical footprint than nation states. Also, at the moment, corporate CEO's appear to be just as discredited as national leaders.

Fourth, Ogilvy cites what he calls the "*emasculation of the middle-class American male.*" According to Steven Rattner, "*Mr. Trump's biggest supporters are white, middle-aged, working-class men without college educations, a group whose fortunes have flagged as globalization and new technology have rendered millions of jobs obsolete and cut into the wages of many more.*"

Ogilvy cites four factors responsible for this emasculation: (1) anxiety about the economy and unemployment, (2) threats posed by immigration; (3) frustration with the political leadership in Washington; and (4) exasperation with feminism. Ogilvy observes that "*Trump has jumped in front of an angry gang of*

---

<sup>7</sup>Elizabeth Williamson. "Why Trump Supporters Are Angry — and Loyal," The New York Times, April 6, 2016.



*economically anxious, bigoted, misogynistic people who are united more by a syndrome than an ideology.”*

Elizabeth Williamson articulates a similar view in much less confrontational language: “*White working-class Republicans, reeling from the recession and declining as a proportion of the population, entered this election year driven by that betrayal [i.e., mainline Republican leadership has done nothing legislatively to address their needs] . Mr. Trump divined their fear and rage. He was there to shout the despicable things other Republicans had merely insinuated, and rewrote the rules of the blame game they invented. He played to the party’s angriest members, and offered a con man’s hope to its most desperate.*”

## 2. Realignment of the Republican and Democratic Parties

Michael Lind argues that both political parties are realigning in the direction of policy purity.<sup>8</sup>

According to Lind, the Democratic base consists primarily of blacks, Latinos and an alliance of northern, mid-western and west coast progressive whites, but also white moderates, many of whom fit the Nelson Rockefeller Republican tradition. Republicans are predominantly southern whites and northern working-class whites, who are socially conservative and economically populist, and who used to be affiliated with the Democratic Party, as well as economic libertarians and limited-government political conservatives.

Lind concludes that “*The anger and sense of betrayal of the newly dominant white working class in the Republican Party makes perfect sense. Donald Trump has mounted and ridden the horse of conservative populism.*”

Today’s dominant Republican Party faction wants pension and health entitlements, control of illegal immigrants and Muslims, and control of “*... foreign trade rivals and free-riding allies.*” Lind expects that eventually the Republican Party policy realignment favoring entitlements and controlling immigration will mature under less “inflammatory” leadership.

Democrats increasingly are focusing on policies that are “*... pro-business, finance-friendly economics with social and racial liberalism . . .*” Identify politics — “*women, blacks, Hispanics, Asians, gays, liberals, and business/professionals*” — rather than progressive economics, is the unifying force today in the Democratic Party. Hilary Clinton reflects this; Bernie Sanders does not.

Sanders traction to date has more to do with Hilary Clinton’s lack of charisma and probably her lack of appeal to young people.

Lind concludes that: “*In the larger perspective of history, 2016 proves that Roosevelt Democrats and Rockefeller Republicans are gone for good. Clinton Democrats and Trump Republicans are here to stay.*”

## 3. Political Polarization

Survey data indicate that the United States is more polarized politically than at any time since the late 19th century. Arthur Brooks, president of the American Enterprise Institute, cites three trends that are

---

<sup>8</sup>Michael Lind. “Trumpism and Clintonism Are the Future,” [The New York Times](#), April 16, 2016.

shaping American politics.<sup>9</sup>

First, according to a 2014 Pew Research Center study, the percentage of Americans who have either “consistently conservative” or “consistently liberal” views has risen from 10 percent twenty years ago to 21 percent.

Second, both parties are becoming purer ideologically. This observation is consistent with Michael Lind’s commentary about the realignment of the parties around policy positions. Brooks cites survey data from the Pew study that 40 percent of Republicans in 1994 were more liberal than the median Democrat compared to 8 percent in 2014; 30 percent of Democrats were more conservative than the median Republican in 1994 compared to 6 percent in 2014.

Third and very troublesome, we don’t like each other. Polling indicates that 38 percent of Democrats have a “very unfavorable” view of Republicans and 43 percent of Republicans feel that way about Democrats.

Brooks is concerned because polarization has led to significant political discrimination, bigotry, and contempt. *“Polarization — and thus contempt — leads to permanent enmity. The problems here are not just social or philosophical; they are practical, as well. Bigotry and contempt make it impossible for America to do many great things.”* That is because polarization obstructs the kind of collaboration that is needed to craft and implement solutions for major societal issues.

Conservatives care more about economic liberty; liberals care more about poverty. But Brooks argues that poverty is best eliminated within a system that embraces economic liberty, namely capitalism. *“We need to come together around the best ways to mitigate poverty using the best tools at our disposal, and that comes only when conservatives recognize that they need liberals and their obsession with poverty, and liberals need conservatives and their obsession with free markets. That’s the diversity in which lies the future strength of this country, if we choose to take it.”*

Defeating the corrosive effects of polarization and establishing trust and collaboration can only come from individuals who, in the words of the Dalai Lama, aspire to “warmheartedness” toward those with whom they disagree. *“I defeat my enemies when I make them my friends.”* Brooks adds, *“... our duty is to be respectful, fair and friendly to all, even those with whom we have great differences.”*

This is good advice from both philosophers, but what and where is the catalyst to ignite this kind of transformation at the societal level?

## IV. What Accounts for the Slowdown in Economic Growth and Low Interest Rates?

In spite of aggressive monetary activism across the globe, economic growth in virtually every country is gradually trending downward. The International Monetary Fund recently released its quarterly update of global growth forecasts. It reduced estimated growth for nearly every country.

Interest rates, too, have trended lower and negative rates on longer-term government obligations,

---

<sup>9</sup>Arthur C. Brooks. “Bipartisanship Isn’t for Wimps, After All,” [The New York Times](#), April 10, 2016.

unimaginable until they actually began to occur, are a feature of many developed economies. Tellingly, as global financial markets calmed and risk-on behaviors reemerged over the last two months, interest rates have not risen and remain significantly below beginning of the year levels. This is evidence that supports the conclusion that monetary accommodation is responsible for the much improved tone of markets in spite of mixed and disappointing data about economic activity.

As I have frequently explained, potential economic growth is driven by labor growth and productivity. It is established fact that as economies mature and society grows wealthier, population growth slows and in some countries population growth even turns negative. This is Japan's fundamental economic problem and it bedevils many European countries as well.

But, potential economic growth is shrinking more than slowing population growth alone can explain. That means that productivity must also be declining. And indeed that is the case in virtually all developed economies. When a phenomenon is widespread and persists, it cannot be dismissed as a temporary cyclical aberration. Increasingly, it is apparent that low productivity is here to stay. What is less clear is the linkage between low productivity and low interest rates, but because the two phenomena are occurring in lockstep, this implies that a linkage exists.

Nominal interest rates are the sum of the real (or natural) rate of interest, a premium to compensate for inflation and a premium to compensate for risk. According to economic theory both slower labor force growth and lower productivity depress the natural rate of interest. However, since the natural rate of interest is unobservable, the empirical relationships between slower labor force growth and lower productivity and the natural rate of interest are uncertain.

But, nominal interest rates are also very low today because of persistently low inflation. Economic theory posits that inflation should rise once economic output exceeds its potential, regardless of the level of potential output. It is a tenet of faith held by many economists and policymakers that inflation can be pushed to at least 2 percent once the economy is operating at or above full capacity. It is also a tenet of faith that policymakers can prevent inflation from going above 2 percent for any length of time through monetary policy actions.

Inflation in all developed countries has been persistently below the nominal 2 percent target. Aggressive monetary policy actions have been unsuccessful to date in driving inflation up to the target, although a credible argument can be made that absent such monetary policy actions economic growth and nominal inflation would have been a lot lower.

Persistent low productivity and the failure of policy to stimulate economic growth and attain the nominal inflation target of 2 percent have forced many economists to search for explanations, although many other economists believe the old relationships still prevail and that inflation will re-emerge once slack has been purged from the economy and that it is only a matter of time before this occurs.

## **1. Aggregate Supply Exceeds Aggregate Demand — Secular Stagnation — A Demand-Side Phenomenon**

But what if the reason for persistent low inflation is that developed economies are unable to achieve full capacity, that is, they are unable to eliminate the output gap except for short periods of time.

Essentially this is what Larry Summers posited in his speech to a meeting of the International Monetary Fund in October 2013 when he described the phenomenon of *secular stagnation* as structurally-weak economic growth that results in a persistent deficiency in aggregate demand relative to aggregate supply.

Summers posited that the U.S. economy has been in a state of secular stagnation for approximately 15 years. Secular stagnation characterizes an economy in which aggregate demand is insufficient to eliminate an output gap.

According to Summers, the demand deficiency stems from declining population growth, falling investment demand, and an excess of intended savings. This leads to a negative equilibrium rate of interest that equates savings and investment at full employment. But, because nominal interest rates cannot fall below zero (at least not very much), equilibrium cannot be achieved and the economy becomes stuck in a slow growth mode with low inflation or deflation, which monetary policy is unable to remedy.

The traditional response to an output gap is to stimulate the economy through fiscal and monetary policies. After initial stimulus during the Great Recession, fiscal policy has not been used in any particularly intentional way to address the output gap. Now, the political feasibility to do so no longer exists. And, with the substantial increase in the federal-public-debt-to-GDP ratio the ability to use fiscal policy to stimulate aggregate demand during the next recession appears to be limited.

Thus, the entire weight of policy intervention has come to rest upon monetary policy. Monetary policy since the Great Recession had provided liquidity and depressed interest rates. This was supposed to stimulate investment in productive assets, thereby increasing aggregate demand.

However, what if much of this monetary stimulus actually goes into financial engineering and price speculation in existing assets instead? Clearly monetary policy has boosted asset prices and created wealth. Increased wealth has spurred additional consumer spending. The financial services and wealth management industries have flourished and created jobs. All of these developments have helped close the output gap. Monetary policy has been successful. Or, has it?

## **2. Aggregate Supply Exceeds Aggregate Demand — Secular Stagnation — A Supply-Side Phenomenon**

According to Alvin Hansen, the economist who originally coined the term “*secular stagnation*” in the 1930s, structurally-weak economic growth is a supply-side phenomenon rather than a demand-side phenomenon, which is driven by depressed population and productivity growth.

There is no dispute between Hansen and Summers about the role of slowing population growth and the accompanying decline in investment. The difference in explanations is one of whether a depressed or negative real rate of interest leads to lower productivity or whether other factors are responsible for driving down productivity. In other words, is lower productivity a cause or consequence of secular stagnation?

It is difficult to disentangle drivers of supply and demand because of dynamic interaction. However, we can observe outcomes and the outcomes we are observing are low and persistent productivity and interest rates.

### 3. Consequences of Secular Stagnation

In a world in which secular stagnation is the dominant overarching economic paradigm, traditional monetary policy intervention to lower interest rates and increase liquidity fosters a credit boom and transitory increase in aggregate demand with the following consequences:

- Low or negative interest rates crowd out low return, risky investments in productive assets; inefficient companies are protected from the rigors of competition; price speculation in existing assets is encouraged
- Sustained low interest rates that are expected to be stable for a long period of time encourage investment in risk assets through debt leverage
- Productivity slows because of diminished investment in new riskier productive assets and the failure to purge inefficient firms
- Growth in real economic activity, GDP, slows
- Incomes rise less rapidly along with slower economic growth and this, in turn, depresses the rate of consumption growth
- A persistent output gap, interrupted only for brief intervals by credit-fueled speculative activity, places unrelenting downward pressure on inflation
- Speculation drives up the prices of existing financial and real assets to levels inconsistent with their intrinsic cash flows
- Asset price speculation benefits the rich and drives income and wealth inequality gaps higher
- Low productivity penalizes the poor by holding down wage increases

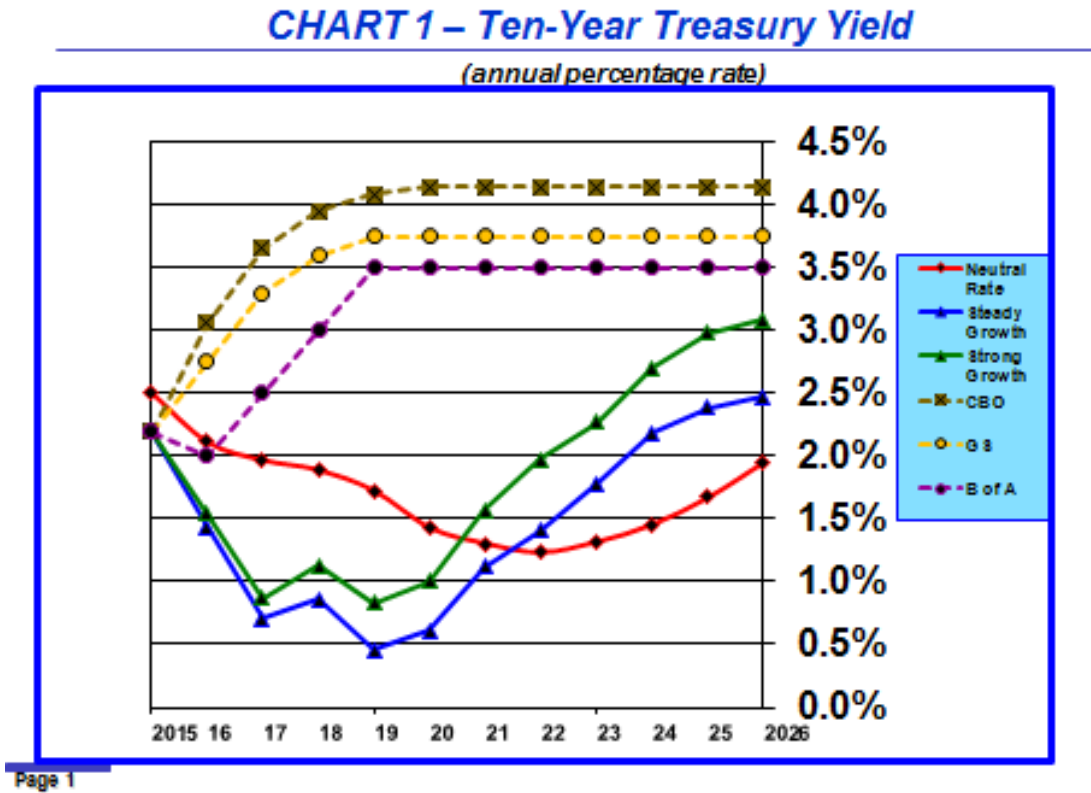
### 4. Lower Interest Rates for Longer

Most economists have yet to embrace the view that interest rates are likely to remain near recent levels for an extended period of time. Forecasters generally project rates to rise over time as economic slack is eliminated and inflation reaches the target level of 2 percent. Over the last several years rates have not risen as expected. Indeed, they have actually continued to fall. This has not changed expectations that rates will eventually rise.

The underlying forecasting flaw may turn out to be that the natural rate of interest is much lower than it has been historically for all the reasons discussed above and that will not change as economic slack disappears. Other plausible reasons for interest rates to remain low for a very long time include the possibility that inflation remains well below the 2 percent target or the possibility that recession occurs and washes out the speculative excesses fostered by quantitative easing.

In my own econometric work, my rate projections are considerably below those of other forecasters. **Chart 1** shows forecasts for the 10-year U.S. Treasury Note for **B of A**, **GS**, **CBO**, and my “**Steady**

**Growth**” and **“Strong Growth**” scenarios. The greatest forecast differences occur over the next five years, but even ten years from now my forecasts are 100 to 150 basis points lower than conventional forecasts.



Over the next five years my model forecasts that the 10-year yield will decline 139 basis points (see **Table 1**). Slowing labor force growth contributes 85 basis points to the decline. However, tighter labor market conditions raise the yield by 48 basis points. Thus, the total impact of changes in the labor market contributes 37 basis points to the decline. Rising productivity adds 15 basis points while easier financial conditions subtract 21 basis points. Collectively, all of these factors decrease the 10-year yield by 56 basis points. The remaining 83 basis points decline stems from my forecast that inflation will decline.

**Table 1**  
**Changes in 10-Year Treasury-Note Yield**  
(Basis Points)

	Labor Growth	Labor Gap	Productivity	Inflation	Financial Conditions	Other	Total
2016-2020	-85	48	15	-83	-21	-13	-139
2021-2026	-2	-4	22	180	-6	-8	181
2016-2026	-87	43	36	97	-27	-21	42

After 2020, inflation in my model moves rapidly toward 2.0 percent, reaching that level by the end of 2024. What is important to note is that even though my inflation forecast eventually matches that of others, the 10-year yield rises only about 50 to 100 basis points from its recent depressed level. Other forecasters expect the 10-year yield to rise 150 basis points or more and that is expected to occur within the next three years rather than in eight to ten years' time.

## V. Why Is Productivity So Low?

Nonfarm productivity has averaged just 0.63 percent over the last three years and 0.40 percent over the last five years compared to a 61-year average of approximately 2.04 percent. The persistent anemic level of productivity in recent years has led to increasing doubts that productivity will return to historical levels and has spurred a search for explanations.

Productivity can be measured in one of two ways — top down or bottom up. BLS calculates a top-down measure quarterly by dividing a measure of output by total hours worked. Typically this measure of productivity is highly volatile. CBO calculates a bottom-up measure by estimating separately the contributions to total productivity of capital investment, technical progress, labor skills, and process improvements.

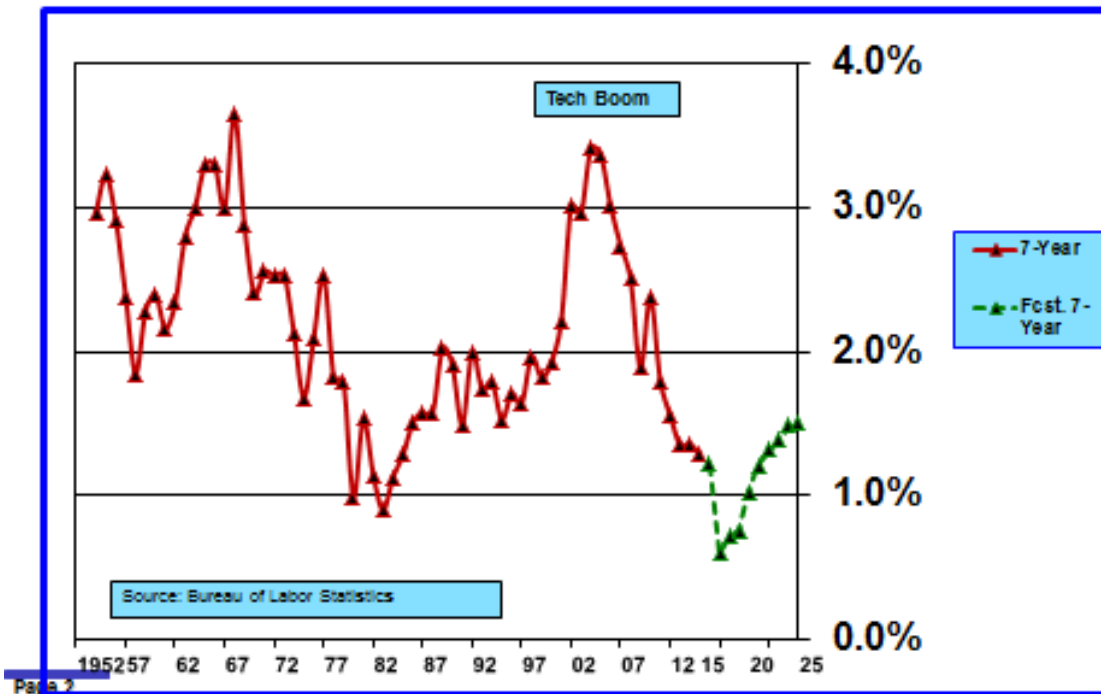
Historical productivity trends are easier to discern when a long-term average is calculated. **Chart 2** shows the long-term trend in a seven-year moving average of nonfarm productivity. The recent collapse in productivity to the low level that prevailed in the early 1980s is starkly evident. One more year of productivity less than 1 percent will take the seven-year average to its lowest level in 60 years of recordkeeping. The improvement in forecast productivity after 2019 assumes that productivity growth will rise from its 2015 level of 0.6 percent to about 1.5 percent over the next several years. There is no assurance that this will actually occur.

Is the collapse in productivity temporary or will it rebound as the economy improves and economic slack diminishes? One acknowledged culprit of the productivity slowdown is reduced investment spending — both public and private. But, this does not fully explain the extent of the productivity slump. There are three theories that seek to explain the remainder of the decline.

### 1. Diminished Technical Progress

Robert Gordon, a Northwestern University economic historian, has argued that today's economy, which is based on information and communications technologies, is inherently less susceptible to productivity improvement than previous structural transformations of the economy involving railroads, electricity, and manufacturing automation.

This is an argument without robust quantitative analysis to support it. In addition, many find this theory intuitively implausible. Think about how your smart phone with all of its apps has transformed your life and made it easier and less costly to manage your daily activities. This theory is based in part on the notion that much of today's innovation stems from non-capital-intensive software development. As *The Bank Credit Analyst* has observed, these kinds of innovations are quality improvements, but the issue is not whether these technologies improve ways of doing existing tasks it is whether they change the quantity

**CHART 2 – Productivity (Seven-Year Rate of Change)**

of output relative to inputs.<sup>10</sup>

GDP measures the dollar value of transactions. It does not adjust for what economists refer to as the utility of transactions. For example, two transactions could have the same dollar value but a consumer could derive greater satisfaction (utility) from one than from the other. GDP measurement methodology does not distinguish between the two transactions and treats them as equal in value.

Consider Uber. This app enables the existing stock of cars and drivers to be utilized more efficiently. It probably does not increase output but it does decrease inputs. Thus, Uber should contribute to measured productivity. However, unlike other types of innovative technologies that lead to new investment and new production, such as cellular phones, Uber does not stimulate new investment and destroys jobs.

While the debate about the economic benefits of social media and apps continues, generally whatever those benefits might be, if they really do exist, they are not captured in the current productivity measurement methodology.

## 2. Inadequate Demand

Another theory posits that low consumer demand for goods and services, perhaps due to unemployment, coupled with low wages, and perhaps exacerbated by income inequality, discourages new investment, which

<sup>10</sup>“Special Year End Issue: Outlook 2016,” *The Bank Credit Analyst*, Vol. 67, No. 7, January 2016.



in turn slows productivity growth. There are several related forces that operate in the same direction. Excess supply, rather than inadequate demand, can have the same impact. When supply exceeds demand this fuels deflationary pressures which inevitably extend to reluctance to raise wages in the interests of preserving profit margins. Through the operation of feedback loops, this assures that demand is weak.

Labor's bargaining power has atrophied in recent years. Reasons include declining union membership, much expanded global alternative sources of cheap labor, declining inflation expectations, and, until recently, persistently high unemployment. Some would add that the expansion of the social safety net has also contributed to the decline in labor's bargaining power. All of these factors tend to limit increases in wages. The shift in recent years of a part of labor's share of income to owners is evidence of labor's loss in bargaining power.

In addition, as Charles Gave of Gavekal Research argues, quantitative easing has depressed the return to capital and this encourages allocation of funds and the use of cheap debt leveraging to speculate in the prices of existing assets rather than to invest in risky, low-return new productive investments. Inflation in asset prices enriches high income individuals who have a lower propensity to consume. This also depresses aggregate demand and holds down wages.

In theory, the problem of inadequate demand could be remedied by policy actions to increase aggregate demand. Supposedly monetary policy can contribute by reducing interest rates and making it more attractive to buy interest-sensitive assets, such as houses and cars, thus inducing additional spending and investment. However, at best this is an indirect policy tool and there is scant evidence that monetary policy is having much impact. Indeed, by depressing interest rates, monetary policy could be making speculation in existing assets more attractive than investment in new ventures.

Aggregate demand can be increased directly through increased government spending. However, fear of big government and burgeoning public debt has resulted in fiscal policy that is reducing spending and thus reducing aggregate demand.

Sum all of this up and the conclusion is that powerful forces are at work that are assuring that aggregate demand remains weak and wages remain restrained. There is little incentive to make new investments when growth prospects are limited. The consequence is that productivity grows more slowly. The unwelcome conclusion is that productivity growth is unlikely to rise much until aggregate demand strengthens and the prospect for that to happen is based mostly on hope.

Forecast productivity in my statistical analysis depends upon three variables — the rate of growth in the labor force, the percentage increase in real private investment spending, and the percentage increase in real public investment spending. The rate of growth in the labor force captures cyclical oscillations in productivity. When labor markets are tight (labor force growth is high), productivity declines as employers hire marginal workers. The opposite occurs during and following recessions as employers shed marginal workers and expect remaining employees to cover more work activity. The coefficient of the labor growth variable equals -1.0 and impacts productivity with an average 2.1 quarter lag. What this means is that a 1 percent increase in employment growth will result in a 1.0 percent decline in productivity over about 4.2 quarters (in fact, about 80 percent of the adjustment occurs with 2 quarters and the remaining adjustment occurs over another 22 quarters).

Investment spending has a much greater impact on the level of productivity. A 1 percent increase in real

private investment increases productivity by 41 basis points with an average 5.0 quarter lag and a 1 percent increase in real public investment increases productivity by 44 basis points with an average 8.8 quarter lag. The problem is that growth in investment spending has dropped sharply in recent years relative to the 1947-2015 long-term averages. **Table 2** shows the separate and combined effects on productivity of the decline in investment spending growth. The 53-year period from 1947 to 1999 is compared with the recent 16-year period from 2000 to 2015.

**Table 2**  
**Contributions of Private and Public Investment Spending to Productivity Growth**

	1947-1999	2000-2015	Change	Coefficient	Change in Contribution to Productivity Growth
Private Investment	4.53%	1.33%	-3.20%	.413	-1.32
Public Investment	3.18%	0.88%	-2.30%	.440	-1.01
Total	3.72%	1.10%	-2.62%		-2.34

It might surprise you to see that the decline in the real rate of growth in both private and public investment spending between the two periods has been so substantial. It might also surprise you to see that the decline in the real rate of growth in investment is not of recent vintage but has persisted for the last 16 years and includes the tail-end of the technology boom in the early 2000s. The 2.34 percent decline in productivity between the two periods is huge. Thus, it is not at all surprising that productivity has risen at an annual average of just 0.63 percent over the last three years. Given the public mind set about government spending, there is little hope that real public investment growth will improve from the recent trend level. One can hope that the real rate of growth in private investment spending will improve, but given the headwinds of weak aggregate demand, low inflation, low wage growth and low interest rates, improvement, if it occurs at all, will probably be modest.

To the extent that this analysis describes accurately what is going on in the economy, it would discredit the absence of technical progress theory. It could be argued that technical progress is as robust as ever, which would mesh with intuition based on personal experience. However, policy impediments to investing and policy depressed returns to investing in new risky ventures simply are discouraging turning potential technical progress opportunities into actual investments. The consequence remains a very low level of productivity and depressed potential growth.

### 3. Mismeasurement

But, perhaps it is not all gloom and doom if, as some argue, productivity is mismeasured and is not capturing the impacts of significant innovation. The focus of the mismeasurement argument typically is on software. BLS can measure nominal dollars and it can measure units fairly easily. What is difficult to measure are the benefits derived from use of software innovations in performing all kinds of economic activity.

GS has written extensively on this topic and has assembled evidence to support its belief that produc-

tivity has not captured the benefits of advances in software technology and that the gap between reported productivity and actual productivity has been growing as software applications become an ever greater component of overall economic activity.<sup>11</sup>

Measurement issues are rather arcane, but the simple explanation is that the prices of technology innovations, particularly software, are not being adjusted for quality improvements. Or, put somewhat differently, if you pay half the price for the latest software application update but derive twice the benefits, it has become twice as productive for you at half the cost. In dollar terms you are receiving four times the benefits per dollar spent. This quality improvement should be measured by calculating the real value of output, which requires deflating the nominal price to adjust for the increase in quality.

If the inflation index is not adjusted fully for quality improvements, inflation will be overstated and real output will be understated because the price deflator is too high. Because real output is understated, productivity, which is the ratio of real output to total hours worked, will also be understated. **GS** estimates that nonfarm productivity could be understated by as much as 75 basis points. Correspondingly, real GDP growth would be understated by about 60 basis points. The difference has to do with real GDP including more than just the nonfarm sector of the economy.

If **GS's** analysis is reasonable, and the arguments and metrics appear to be thoughtful and thorough, both real GDP and potential real GDP are understated. The size of the GDP output gap should not be affected. And, the measure of nominal GDP will remain unchanged.

Probably the more important consideration is that the GDP price deflator could be overstated by a considerable amount, perhaps by as much as 60 basis points. Since the GDP price deflator was 1.1 percent in 2015, an inflation adjustment of this size would put us very close to deflation territory.

Policy implications of productivity mismeasurement are limited primarily to the overstatement of inflation. Indexing economic activity, such as annual social security benefit adjustments, to an overstated inflation measure will have the consequence of keeping upward pressure on inflation. But, perhaps this is not such a bad outcome in a world in which deflationary forces are present.

#### 4. Monetary Policy — Administered Interest Rates

Another argument is that artificially low interest rates have enabled marginal firms to hang on by borrowing at cheap rates. This impedes the natural process of creative destruction.

New business formations are depressed relative to historical levels. Since new businesses are typically engines of innovation, the decline in numbers could explain some of the shortfall in productivity. Also, access to credit, in the wake of the Great Recession, especially for startups, has been more difficult, perhaps because of more restrictive underwriting standards. Home equity loans historically have been a important source of capital for new businesses. Home price declines and tighter underwriting during and immediately following the Great Recession closed this source of credit. Home prices have been rising for the last several years and home equity loans are now growing. So, perhaps, new business formation will pick up. However, venture capital remains in the doldrums. It seems that expected returns on new ventures are

---

<sup>11</sup>Jan Hatzius and Kris Dawsey. "Doing the Sums on Productivity Paradox v2.0," Goldman Sachs Economic Research, Issue No: 15/30, July 24, 2015.

often insufficient relative to perceived risks. Also, as I have commented about elsewhere, artificially low interest rates may be diverting investment funds into existing assets because leveraged returns are less risky than is the case for investments in new businesses.

## VI. “*The Smartest Places on Earth*”

Debate about whether productivity and potential real GDP growth are understated will continue and perhaps as time passes, answers will become clearer.

### 1. Brain-Belts

Putting this debate aside, there is a developing trend that appears to have unambiguously positive long-run implications for the U.S. economy. This trend is described in a recently published book, *The Smartest Places on Earth*, authored by Antoine van Agtmael and Fred Bakker.<sup>12</sup>

Antoine van Agtmael is credited with coining the term “Emerging Markets” in a book he wrote many years ago. In that book he posited that advances in communications and transportation technologies would result in substantial shifts in goods manufacturing to low labor cost markets in emerging economies. And, that is exactly what has happened. Along the way the rise of China reinforced this development and brought with it the boom in commodities, low inflation, and the savings glut. Developed economies lost manufacturing jobs and were forced to create new jobs based on knowledge skills. For a while, the low labor cost advantage of emerging market economies spurred outsourcing in addition to outright relocation of manufacturing facilities to emerging markets.

Van Agtmael and Bakker argue that competitive advantage has shifted back to knowledge-based economies in North America and Europe. The principal reason for this reversal is that increasingly demand is shifting from cheap commodity products to customized, complex smart products.

An example of shoe manufacturing succinctly illustrates the power of this transformation. Technology now exists to scan your foot and determine exact measurements for a perfect fit. Sophisticated developments in materials technology enable you to choose your design and be assured of a high quality, durable, comfortable fit. 3-D printing enables inexpensive customized production of the shoe style you have chosen.

Shortly after hearing Antoine van Agtmael explain his theory, I had occasion to attend a University of Maryland, Smith School of Business event featuring innovation and entrepreneurship (Cupid’s Cup) at which Kevin Plank, CEO of Under Armour, spoke. At one point during Mr. Plank’s talk about the importance of innovation and entrepreneurship he lifted his foot to show a new pair of shoes that had been 3-D printed. So, be assured that Under Armour is already well along in developing a cost-effective way to grab shoe market share through cost-effective 3-D printing. Van Agtmael’s theory is already well along in transforming production.

While 3-D printing and robotics, as well, are components of smart production, van Agtmael and Bakker cite two others. One is the Internet of Things, which connects everything everywhere, provides access to

---

<sup>12</sup>Antoine van Agtmael and Fred Bakker. *The Smartest Places on Earth*, Public Affairs, New York, 2016.

voluminous quantities of information at virtually no cost. The other is the open social, business, and regulatory culture that exists, particularly in the U.S. and Canada, but also to a lesser degree in many northern European countries.

Simply put, in a world that increasingly wants smart products, emerging market countries simply will be unable to keep up with the research and development prowess of the United States and the unorthodox open culture that fosters entrepreneurship and innovation. This is really bad news for China which is hardly an open economy and apparently is headed in the opposite direction curtesy of President Xi's anti-corruption campaign, which is reinforcing silos and discouraging nonconformity.

Key to smart production is collaboration with multiple partners — entrepreneurs, established larger companies, colleges and universities, community leaders and government agencies. U.S. colleges and universities, in particular, are well placed to serve as connectors and knowledge sharers. Sharing brain power is the secret ingredient to enabling smart production. Big data, sophisticated information technology algorithms, and sensors of every description provide great potential but brain power and collaboration are necessary to craft highly specialized solutions to difficult and challenging problems, which also need to be cost effective relative to value added.

Collaboration is extremely important for two reasons. First, smart solutions are costly and beyond the affordability of most on a go-it-alone approach. Second, collaboration unambiguously results in better, less costly, and more effective outcomes than a siloed approach.

When all of this comes together a coherent ecosystem emerges. An ecosystem is a network of organizations and individuals, linked by a connector. Van Agtmael and Bakker refer to such an ecosystem as a brain-belt.

Brain-belts have already emerged in many locations in North America and Europe, often in former manufacturing hubs that had become rustbelts. Brain-belts have several features in common:

- They take on complex, multidisciplinary, and expensive challenges that could not be handled by any single player alone.
- They are driven by a connector, an individual or group, with vision, relationships, and energy, which drives building a coherent ecosystem.
- They operate in a collaborative ecosystem of contributors with research universities at their center and typically composed of start-ups, established companies, local government authorities, and community colleges.
- They focus on one, or just a few, particular disciplines or activities. For example, the brain-belt in Akron, Ohio focuses on materials, which is an outgrowth of expertise that developed during the time that Akron was the tire manufacturing capital of the world.
- They are open to sharing knowledge and expertise — the walls between academia and industry and public governance have been dismantled.
- They contain physical centers, such as incubators and start-up spaces.
- They foster an environment that acts as a magnet for talent.

- They have capital available.
- They have an understanding and acknowledgment of threat based on past experience which leads to a strong sense of identity, regional pride, and activities of continuous improvement.

## 2. Doctor Up

For the last several years I have been an executive-in-residence at the Robert H. Smith School of Business, which is a college within the University of Maryland. From time to time I teach a class and have the opportunity to interact with faculty, students, and administrators. The University of Maryland is a research university and has been in the forefront among colleges and universities in structuring educational programs to develop entrepreneurial skills and motivate and support development of startup companies.

In 1986, Dean Rudy Lamone established the Dingman Center to support entrepreneurial initiatives within the Smith School of Business. The Center develops and executes curricular and non-curricular programs to leverage the Smith School's thought leadership and provide experiential learning. Through a network of practitioners, it provides resources to budding entrepreneurs. Students are full of ideas — some good, some not so good. Through the Dingman Center students can pitch their ideas with investment professionals and get no-holds-barred advice. The Dingman Center sponsors an angel investors group that has a small pot of money that it can allocate to entrepreneurial ideas with merit. The Dingman Center organizes periodic contests in which wanna — be entrepreneurs pitch ideas and the best ones win small cash awards. In addition, Dingman Center staff work with students to develop their skills and connect them with mentors and experts who can help them develop their ideas into successful business initiatives. The Dingman Center also works with other colleges throughout the University of Maryland to incubate business opportunities stemming from academic research.

As a member of the Smith School faculty and as an experienced business professional, I often advise students. Occasionally, what starts as an advisory relationship evolves into something much greater in scope. This is how I came to be an investor in and director of Doctor Up. Doctor Up is a startup company (less than a year old) that is developing ways of connecting consumers with health care providers. I won't go into the details here, but you can request a copy of the business plan. You can also download the Doctor Up App from the Internet.

Like most startups, Doctor Up could fail, it might be modestly successful, or it might hit the ball out of the park. It's too early to know, but such is the life of impassioned entrepreneurs who are willing to work night and day, take enormous risks and have incredible skill in inspiring and connecting people with the knowledge needed to take an obvious idea (usually not so obvious to most people) and develop a marketable product that others will pay good money for. In the case of Doctor Up, the CEO is an undergraduate. He is benefiting from the University of Maryland and Smith School network and has received invaluable counsel and assistance from many at little or no cost. Like most entrepreneurial endeavors, the skill of the entrepreneur is in taking a reasonable idea and connecting people to develop technology, products, and markets. There are many moving parts; the job is complex. It would be difficult for Doctor Up's young CEO to do what he is doing, perhaps impossible, without the infrastructure and network the University of Maryland and the Smith School have developed over the last 25 years.

Many other colleges and universities in the U.S. are following the lead of the University of Maryland

and other pioneers. It goes without saying that these academic initiatives are an essential component of the ecosystem van Agtmael and Bakker describe as crucial to successful creation of a brain-belt.

If public support and funding is adequate, the future of America's economy should be very bright. Moreover, with visionary leadership, the opportunity for significant and highly effective public-private partnerships is enormous.

### **3. Macroeconomic Implications of Brain-Belts**

One significant macroeconomic implication of the trend away from commodity-driven manufacturing and toward smart production is that growth in world trade flows will slow and possibly might even decline in coming years. In fact, global growth in trade has already slowed. This is not good news for China and emerging economies, but it is probably good news for manufacturers of high quality smart products. Germany immediately comes to mind as a country that is likely to benefit.

Labor mobility has decreased in the U.S. since the Great Recession. Initially, excess housing inventory, depressed home prices and underwater mortgages seemed to provide a plausible explanation. However, mobility is still depressed even though housing is no longer an impediment. Could it be that in a highly connected world which is increasingly restructuring to support smart manufacturing labor mobility is less important. Jobs are being created in the old rustbelts, which reduces or eliminates the need for workers to relocate to find jobs.

### **4. Policies To Support Brain-Belts Are Missing in Action**

While professional and technical expertise exists in brain-belts as a legacy of long-gone manufacturing, skills of many workers are not adequate for the kinds of new jobs that smart manufacturing and related support activities require. The solution is obvious: fund vocational and job skills training programs. This needs to be the job of the public sector, particularly because so much of the needed labor skills come from small startup businesses. But, Congress has refused to consider President Obama's Jobs Act and states have provided inadequate funding to community colleges and vocational schools. This is incredibly short-sighted and without question, in my opinion, has contributed to the decline in productivity and the political anger that is boosting the presidential candidacy of Donald Trump.

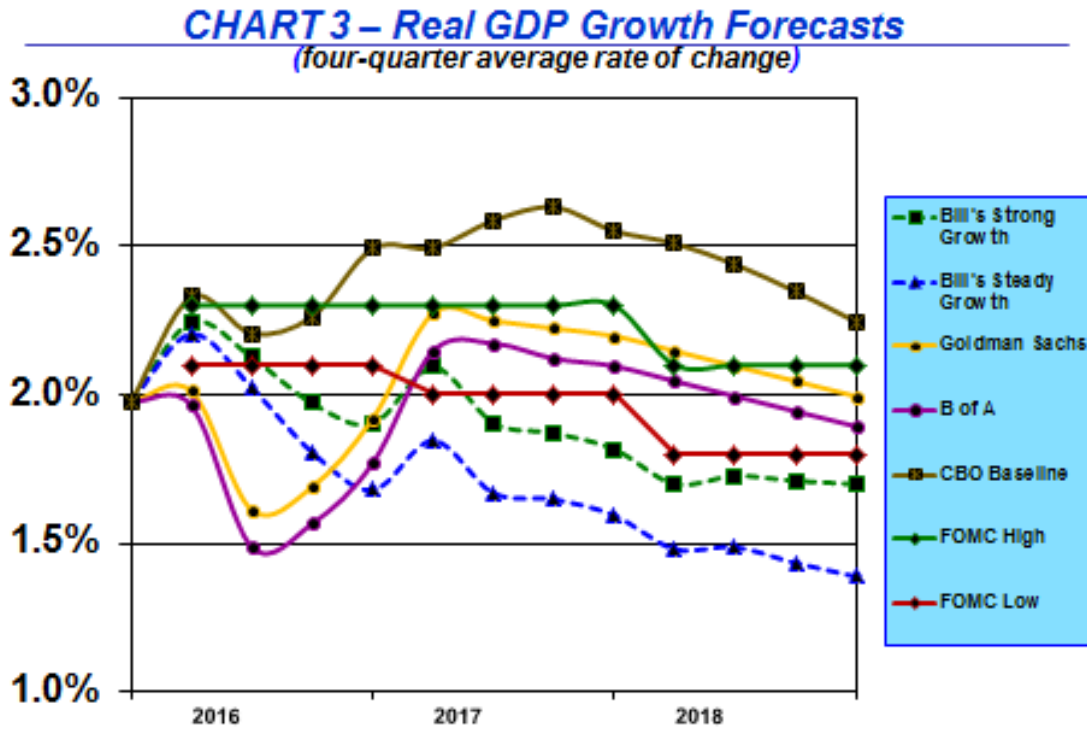
Hopefully, the next Congress and president will see fit to fund a substantial job skills training program and provide assistance to states which are responsible for administering public education. If that does not occur, brain-belts will press on but the benefits to the U.S. economy will be more limited.

## **VII. Real GDP — Forecasts Edge Lower**

Although employment gains have been strong, forecasts of first quarter real GDP growth have been reduced to nearly zero as monthly data reports have filtered in.

There has been a good deal of commentary among forecasters about faulty seasonal adjustment that

systematically depresses reported first quarter real GDP growth. Thus, real GDP growth is expected to bounce back to about 2.0 to 2.3 percent in the second quarter. However, growth forecasts for all of 2016 are now quite a bit lower than they were prior to the beginning of 2016. **Chart 3** shows quarterly real GDP growth projections from 2016 to 2018. All forecasts for the next three years are tightly clustered. All exhibit a slight deteriorating trend as time passes.



Page 3

You can see the dip in real GDP growth in early 2016 forecast by **B of A** and **GS**. **B of A's** original estimate first quarter forecast was 2.0 percent, but its current working estimate is 0.0 percent. **GS's** working estimate is currently 0.8 percent.

My 2016 quarterly forecasts also show a declining trend that begins after the first quarter.

After 2016, my "**Steady Growth**" scenario is on the pessimistic end of the spectrum. **CBO's** forecasts are at the optimistic end of the range. All other forecasts fall within the **FOMC's** high and low estimates throughout the three-year period.

## VIII. Employment

Contrary to the dismal GDP forecasts, payroll and household employment gains continue to be impressive. Employment participation has improved and both the U-3 and U-6 measures of unemployment indicate that little slack remains in the labor market. At long last there is evidence that wage rate growth is



beginning to accelerate.

## 1. Employment Growth

March's employment situation report showed strong employment gains. The increase in payrolls in March was 215,000, which was well above the approximately 100,000 monthly gain necessary to maintain a stable unemployment rate. This compares to a monthly average of 209,000 over the last three months and the 2015 average monthly gain of 229,000. The 12-month rate of growth in payroll employment remains strong at an elevated level of 1.99 percent, although this is down somewhat from the peak rate of annual growth of 2.14 percent in March 2015.

Household employment grew 245,000 in March after rising 531,000 in February. Monthly estimates of household employment growth are very volatile so a better sense of trend can be gained by looking at average monthly changes in household employment over longer time periods. Over the past 12 months, monthly household employment growth has averaged 249,000 compared to 234,000 for payroll employment. This is not a consequential difference. Household employment has grown 2.01 percent over the past 12 months, which is about the same as payroll employment growth.

Growth in total hours worked by all employees was 1.94 percent in March. Total hours worked, after growing much faster over the last several years are now growing at the same rate as the other two measures of total employment.

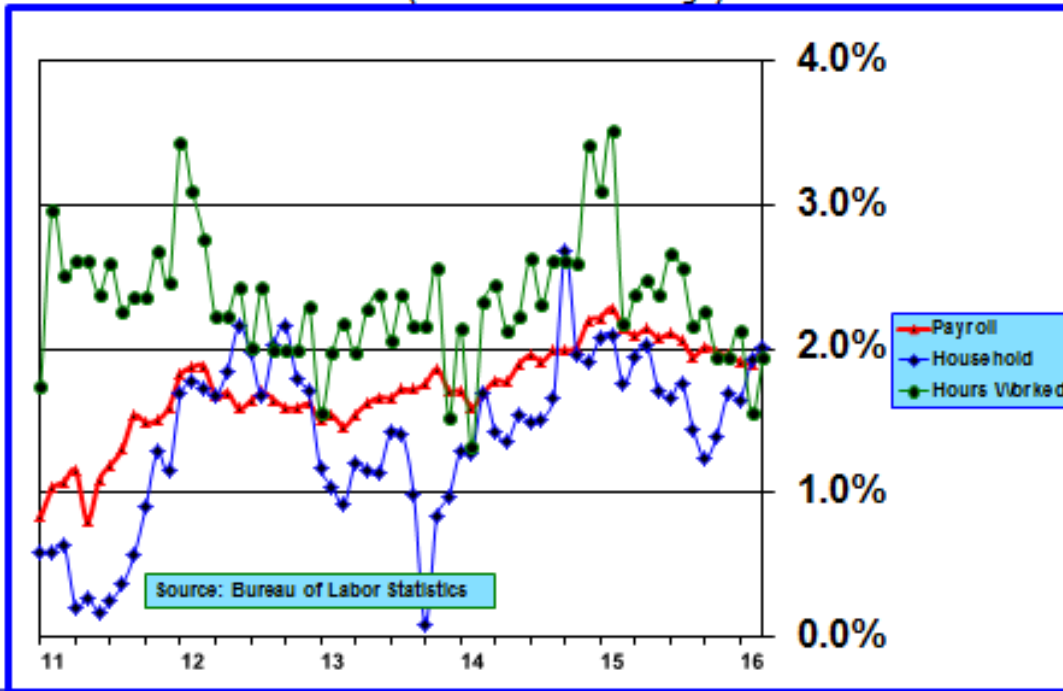
**Chart 4** shows all measures of employment growth — payroll employment, household employment, and total hours worked. Probably the most important thing to notice in **Chart 4** is the convergence in the growth rates of total hours worked with those for payroll and household employment. This is an indicator of a mature labor market that is at or near full employment. Generally, in the early stages of recovery employers increase the length of the work week of existing workers before hiring new ones.

## 2. Employment Participation

**Chart 5** 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 referred to as the population. The numerator of the eligible-employment-to-population ratio is the total number of people employed and unemployed who wish to be in the labor force. The numerator of the participation ratio only counts those who are employed.

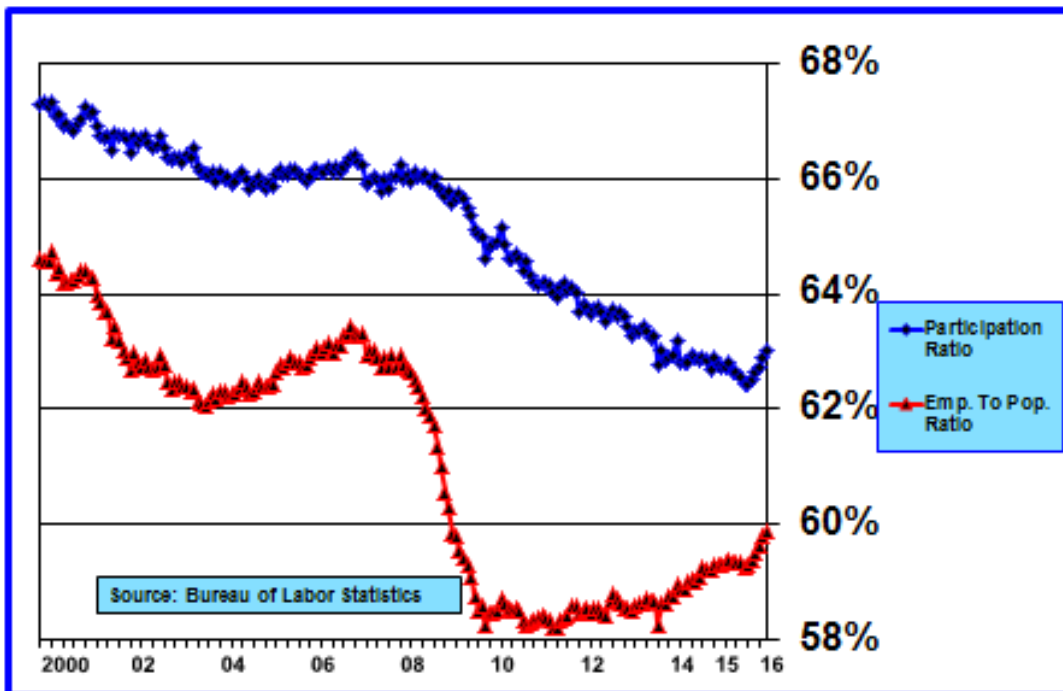
The eligible-employment-to-population ratio plunged during the Great Recession and then stabilized for several years before beginning to rise in 2014. However, the participation rate continued a steady decline until just six months ago. The downward trend in the participation ratio in recent years has been driven by changing demographics which should continue to reduce participation by about 0.2 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

**CHART 4 – Employment Growth**  
(annual rate of change)



Page 4

**CHART 5 – Labor-Force-Participation and Eligible-Employment-to-Population Ratios (U-3 Measure)**



Page 5

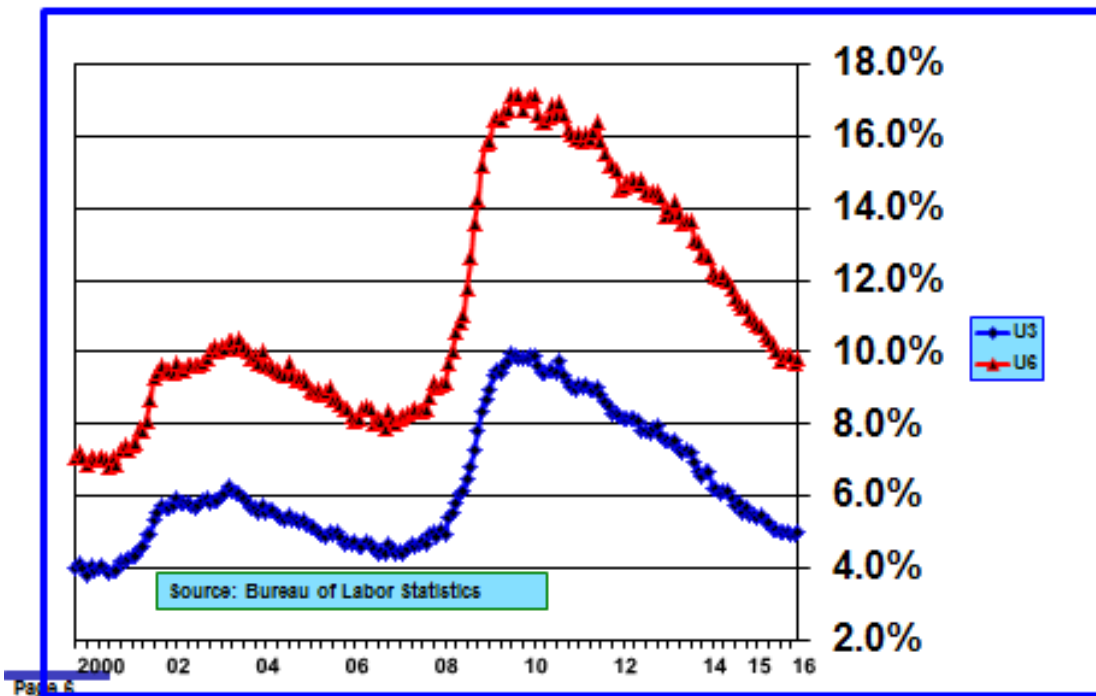
the participation rate from 62.42 percent in September to 63.02 percent in March is fairly strong evidence that discouraged workers are finally reentering the labor market.

**GS** believes there is still a small participation gap equal to about 0.2 percent. **B of A** believes the participation gap is much larger, perhaps as large as a full percentage point. The difference between the two forecasters has to do with differences in assumption about structural versus cyclical declines in the labor force. **B of A's** analysis suggests that a fairly large employment gap still exists which means that upward pressure on wage increases should remain muted for the time being.

### 3. Measures of Unemployment Reflect a Labor Market With a Modest Amount of Slack

As can be seen in **Chart 6**, the U-3 unemployment rate has fallen to 5.0 percent and nearly matches the level attained prior to the Great Recession. The March U-3 unemployment rate was 5.00 percent compared to **CBO's** full employment estimate of 4.85 percent.

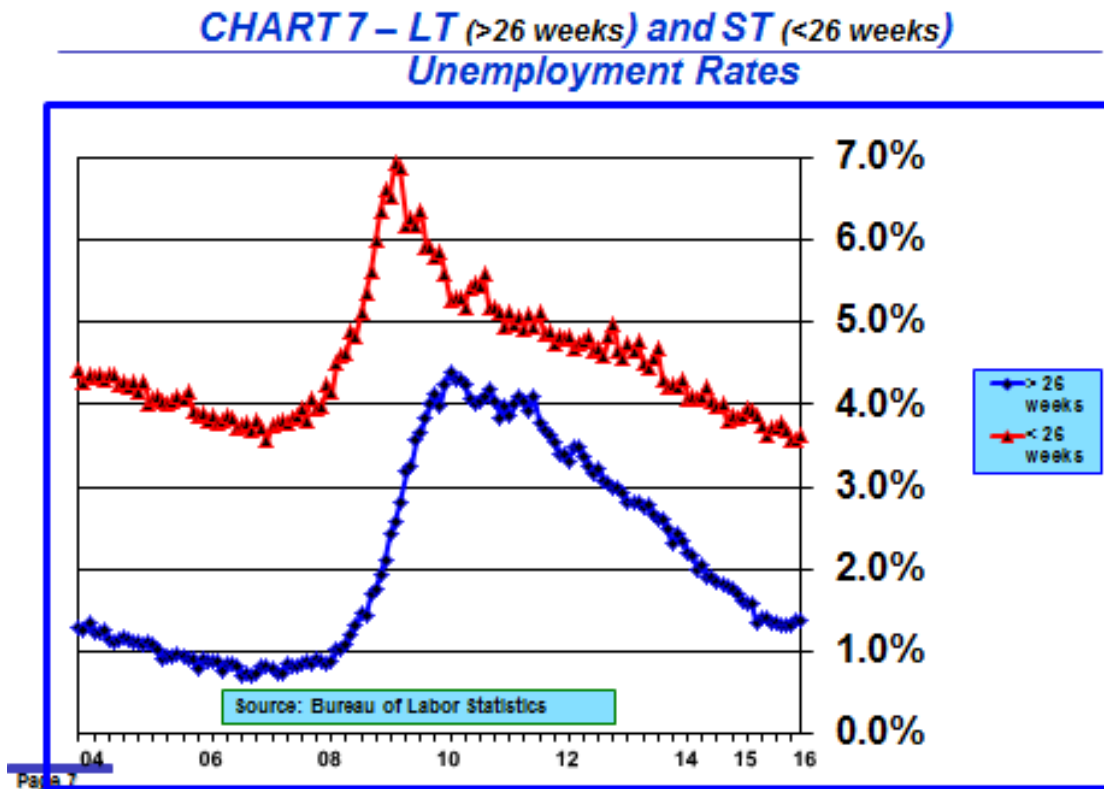
**CHART 6 – U-3 and U-6 Unemployment Rates**



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 9.82 percent but is about 1.5 percentage points above the pre-Great Recession minimum. Both unemployment measures reflect a tightening labor market with a modest amount of remaining slack.

Long-term and short-term unemployment rates and also indicators of labor market tightness and are shown in **Chart 7**. The short-term unemployment 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 about 1.4 percent currently. It is still about 0.4 to 0.5 percent above the low level reached just prior to the onset of the Great Recession.

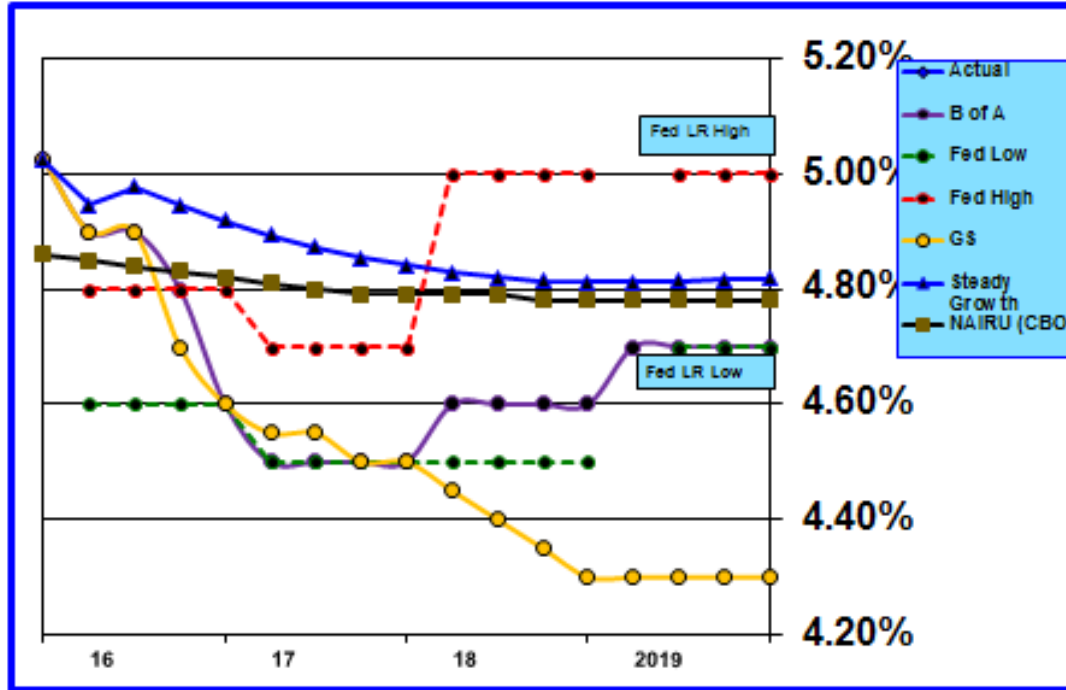


#### 4. Forecasts of the U-3 Unemployment Rate

Forecasters expect the labor market to continue to tighten which means that the unemployment rate will fall below the non-accelerating inflation rate of unemployment (NAIRU). While this is certainly welcome news after seven years a high unemployment, further declines in unemployment will result in a tight labor market. Scarcity of workers will drive wages higher. This is also a favorable development because it will increase worker spending power. But, as the term NAIRU implies, 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 attempt to tweak 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.

**Chart 8** shows unemployment rate forecasts for **B of A**, **GS**, **FOMC** high and low range, and my “**Steady Growth**” scenario. **CBO**’s estimate of NAIRU is also shown in **Chart 8**. With the exception of my “**Steady Growth**” scenario, other forecasts project that the unemployment rate will fall below NAIRU. **GS** is the most optimistic and anticipates that the unemployment rate will fall to 4.3 percent by 2019.

**CHART 8 – NAIRU and Unemployment Rate Forecasts**  
(quarterly average)



Page 3

### 5. Wage Growth Is Finally Discernible, But Still Weaker Than Expected

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. But acceleration in wage growth to date, although now visible, has been much weaker than experience suggests it should be.

For quite some time FOMC members have been expecting the rate of growth in wages to pick up and boost inflation. That has yet to happen convincingly. FOMC members are not the only ones with poor forecasting track records. Private sector economists have forecast acceleration in wage rate growth for some time now as the amount of slack in the labor market gradually declined. There is now evidence that wage growth is beginning to accelerate but increases remain smaller than experience suggests should be occurring given how little slack appears to be left in the labor market.

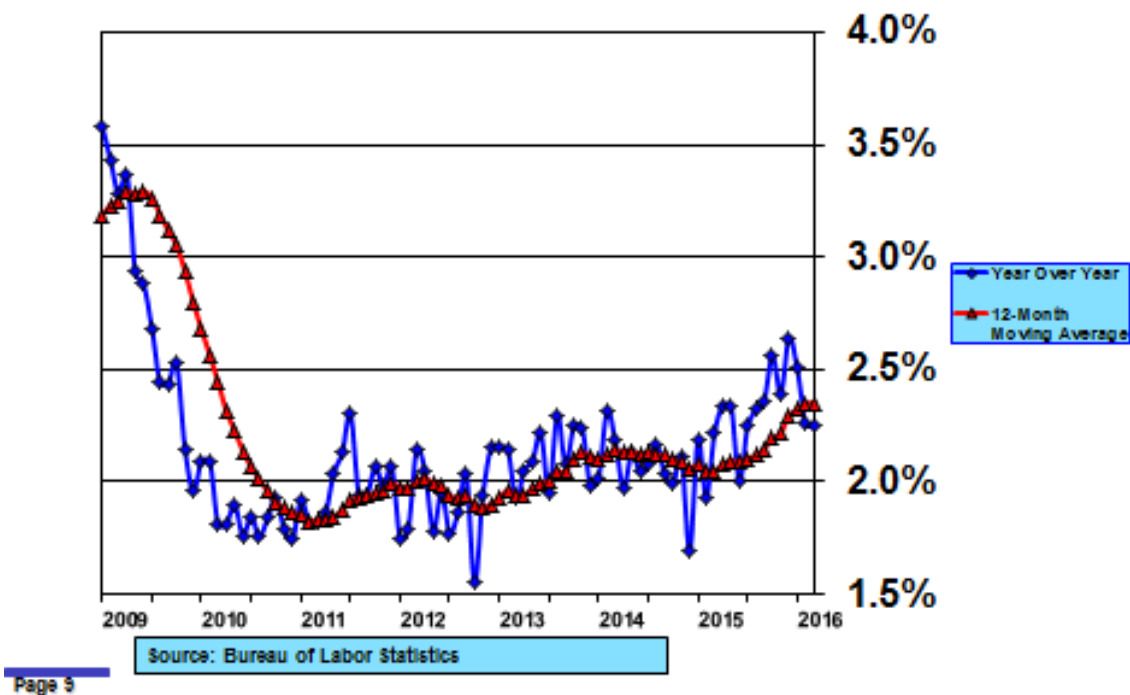
Growth in wages is an important measure of labor market strength. An increasing rate of growth is evidence of a strengthening labor market in which labor, particularly in scarcer job categories, is gaining more bargaining power.

There are two primary broad-based measures of labor compensation that provide information about compensation trends. Both are compiled by BLS. One is released monthly as part of the monthly labor situation report and includes both hourly and weekly wage rates for all workers, but includes no information about benefits which comprise approximately 30 percent of total compensation. The other, the employment

cost index (ECI), is released quarterly and consists of wage and salary, benefits, and total compensation indices.

Although both sets of 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. Hourly wages of all employees are rising 2.35 percent annually currently compared to 2.05 percent a year ago (see **Chart 9**). Both the February and March year-over-year changes in the hourly wage rate for all employees fell below the 12-month moving average of 2.35 percent, which did not change from February to March. So, based on this measure, wages have accelerated modestly, but there appears to be weak upward momentum.

**CHART 9 – Hourly Wage Rate Growth – All Workers**  
(annual year over year and 12-month moving average rates of change)



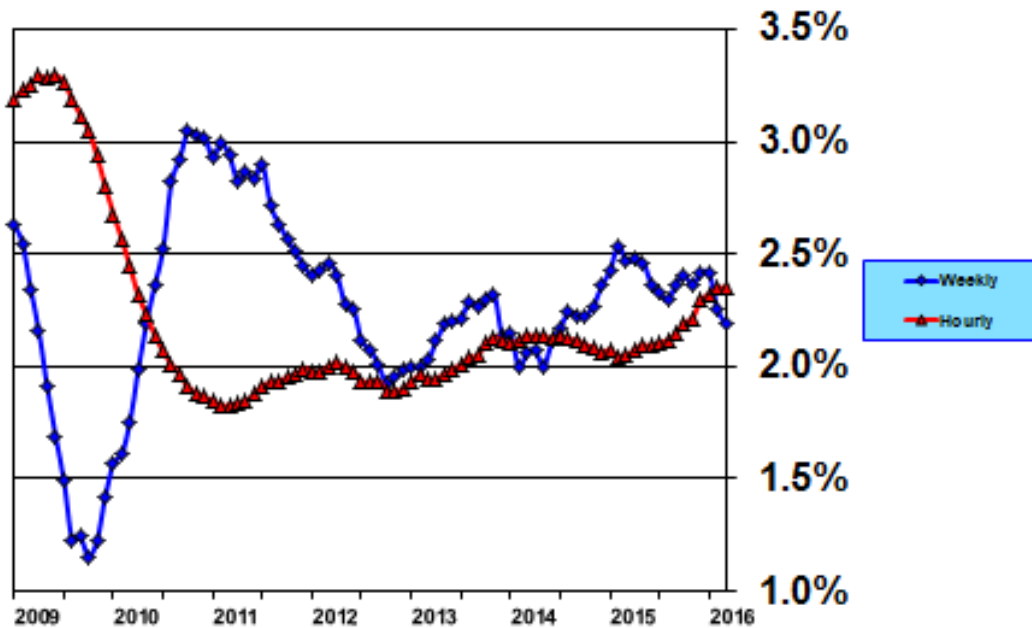
Page 5

Furthermore, if one looks at growth in average weekly earnings, which factors in the length of the workweek, rather than the hourly wage rate, growth in weekly wages for all employees has fallen from 2.47 percent a year ago to 2.19 percent in March 2016 (see **Chart 10**). This outcome reflects a modestly shorter average number of hours worked per week. 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 will depress growth in disposable income and correspondingly growth in consumer spending. Analysts have been surprised at the weak growth in consumer spending in recent months, but **Chart 10** provides a credible explanation for this unexpected trend.

In contrast to growth in average hourly wages of all employees, the growth rate in the wage and salary component of ECI in the fourth quarter of 2015 was 2.06 percent compared to 2.10 percent a year earlier (see **Chart 11**). So, one measure shows modest acceleration while the other shows none. The more

### CHART 10 – Hourly & Weekly Wage Rate Growth – All Workers

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



Source: Bureau of Labor Statistics

Page 10

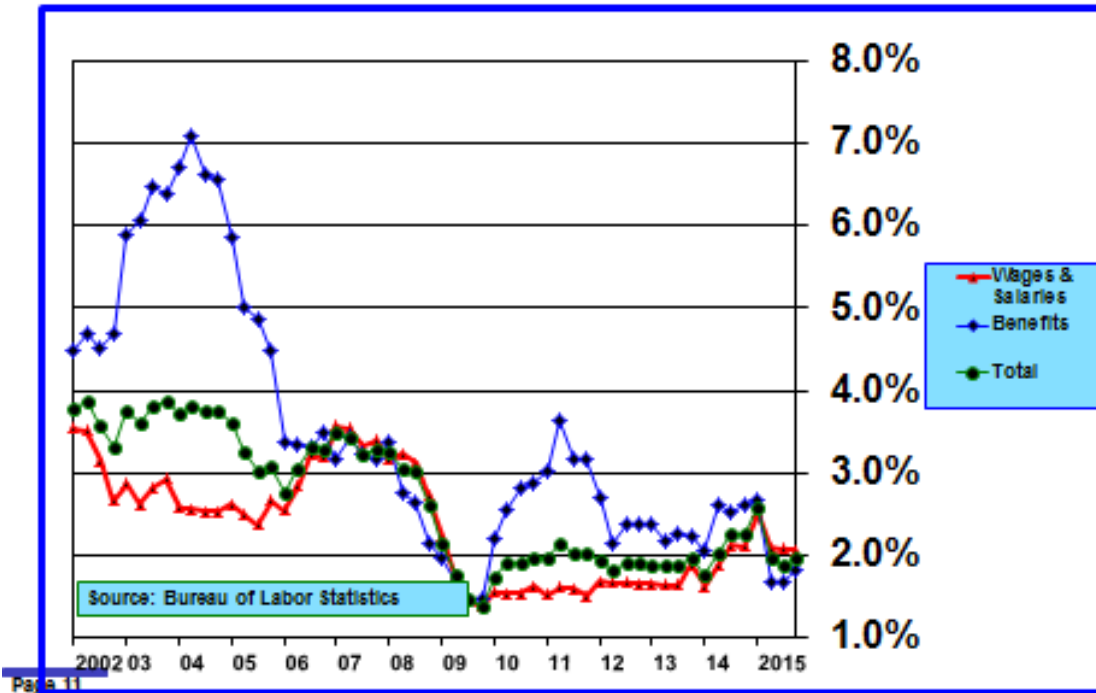
comprehensive measure of ECI, which includes benefits, has declined from 2.25 percent a year ago to 1.95 percent in the fourth quarter of 2015. There’s no convincing evidence yet in the ECI data that wages are accelerating.

**Chart 12** shows my projections for wage growth for production and nonsupervisory workers over the next ten years and **CBO’s** and **B of A’s** projections for growth in the wage and salary component of ECI over the same time period. A couple of explanations are in order. First, the data series for all employees only began in 2006 while the data series for production and nonsupervisory workers 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.

Second, **CBO** 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.

Thus, looking at **Chart 12**, the major takeaway is that I do not expect there to be significant upward pressure on the rate of increase in nominal wages for several years. In contrast most, and this is reflected in **B of A’s** and **CBO’s** forecasts for ECI wage and salary growth rates, expect wage growth to accelerate over the next three years and then stabilize. In the long run my wage rate forecasts converge upwards to those of others, but it takes a long time for this to happen.

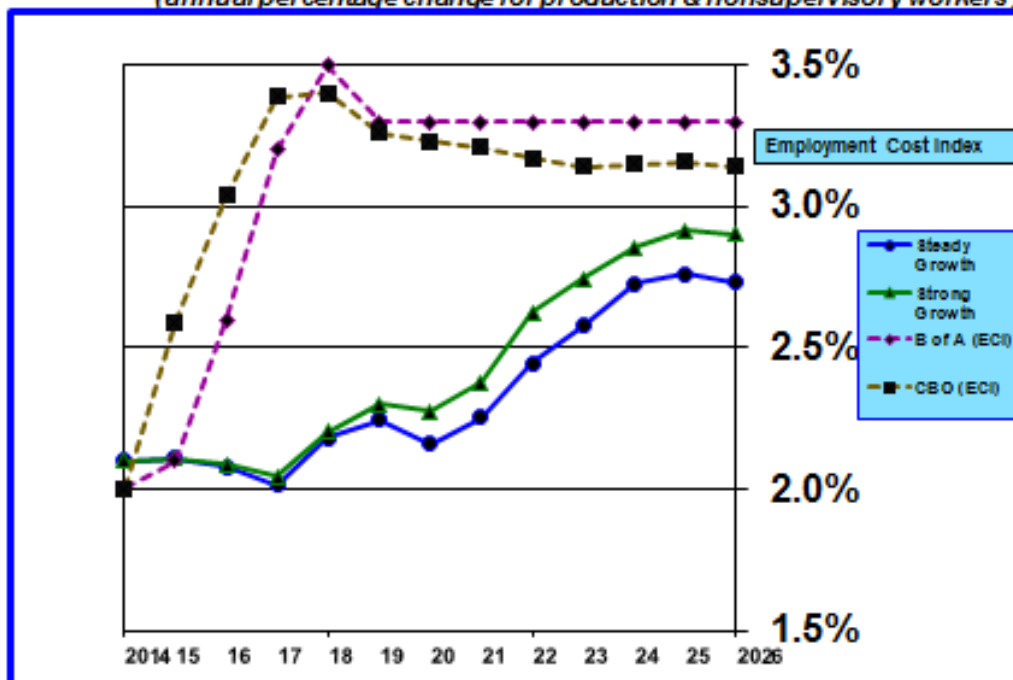
**CHART 11 – Employment Cost Index**  
(annual rate of change)



Page 11

**CHART 12 – Hourly Wage Rate Forecasts**

(annual percentage change for production & nonsupervisory workers)



Page 12



Who is right? That is unclear and time will give us the answer. However, based on the failure of wage rate growth to escalate much to date contrary to expectations, I would suggest that a little pessimism is in order. There is an important implication. If nominal wages do not rise as rapidly as most expect, nominal consumer spending will not grow as fast and upward pressure on inflation will be less. Stay tuned.

## IX. Prospects for Inflation

Core PCE inflation was 1.68 percent in February and has now risen about 0.4 percent from its recent low of 1.26 percent last July. Total PCE inflation, which continues to be depressed by the plunge in oil prices and lower import prices, was 0.96 percent in February, up from the 0.66 percent rate of increase that prevailed in 2015 (see **Chart 12**).

### 1. Core PCE Inflation Forecasts

As can be seen in **Table 3** (**Chart 13** shows historical core PCE price index data and data from **Table 3** in graphical form), forecasts of the core PCE inflation index indicate that inflation increase modestly during 2016. Over the longer run, **B of A** and **GS** expect core PCE inflation to rise gradually, reaching 2.0 percent sometime during 2018. FOMC projections also reflect a gradual rise.

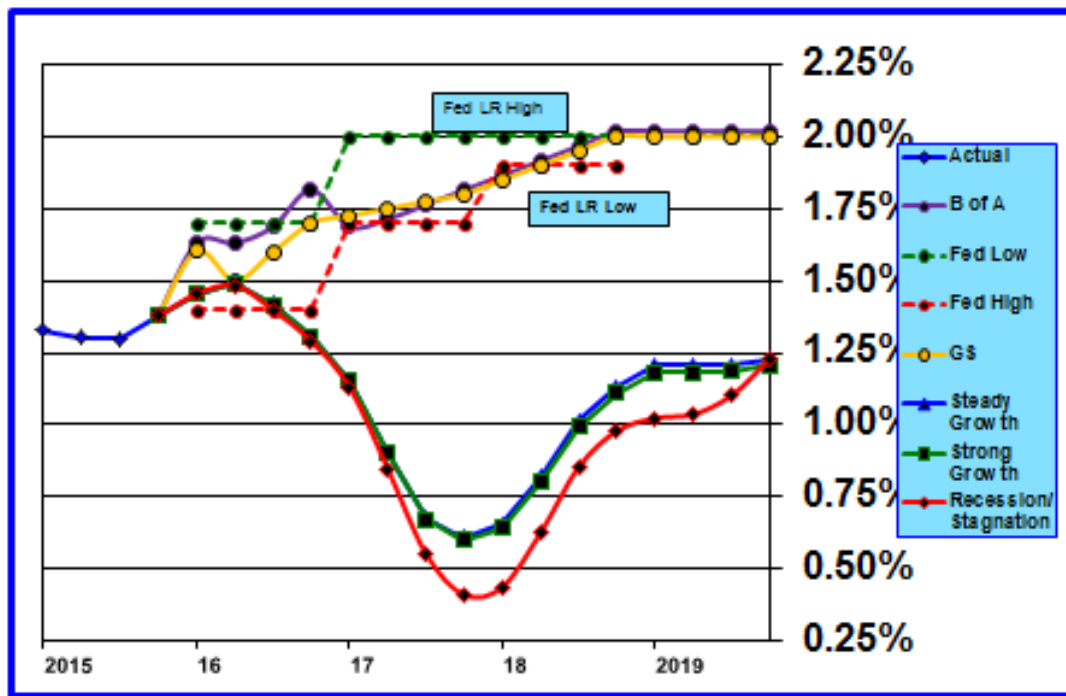
**Table 3**  
**Core PCE Inflation Forecasts — B of A, GS, Bill’s “Steady Growth”, Bill’s “Strong Growth” and FOMC High and Low**

Core CPE	2013	2014	2015	2016	2017	2018	2019
B of A	1.54	1.37	1.44	1.8	1.8	2.0	2.0
GS	1.54	1.37	1.44	1.7	1.8	2.0	2.0
Bill’s Steady Growth	1.54	1.37	1.44	1.25	0.61	1.16	1.23
Bill’s Strong Growth	1.54	1.37	1.44	1.25	0.59	1.14	1.21
FOMC — High				1.7	2.0	2.0	
FOMC — Low				1.4	1.7	1.9	

As can be seen in **Chart 13**, my inflation forecasts diverge considerably from the consensus, falling in the near-term rather than rising and do not reach 2.0 percent until 2024.

Naturally, the question arises as to why my forecasts deviate from the consensus to such a great extent in the next few years. It might be simply that my statistical analysis is methodologically unsound or that historical impacts of various economic variables on inflation have undergone a profound structural change. Or, it could be that my statistical analysis is capturing important drivers of inflation that others have missed.

**CHART 13 – Core PCE Inflation**  
(annual percentage rate)



Page 13

Much of the difference between my inflation forecast and those of others has to do with the impact of changes in the value of the dollar on core PCE inflation. In my model, inflation changes by 8.6 basis points for each 1 percentage point change in the value of the dollar, but the full impact is not realized for more than three years. Over the 18-month period from July 2014 and January 2016 the trade-weighted value of the dollar rose 25 percent. Based on my statistical analysis, this would have a cumulative effect over several years of reducing inflation by over 200 basis points. Moreover, the long lags in my model account for the slow rise of core PCE inflation back to 2.0 percent. It is well understood that a stronger dollar decreases prices of imports and this filters into lower overall inflation over time. However, my statistical analysis suggests that the impact is considerably greater than other analysts believe based upon their own work.

**2. Are the Recent Increases in Core PCE Inflation Transitory or Indicative of a Sustained Trend Back to the FOMC’s 2.0 Percent Target?**

Core PCE inflation has risen from 1.3 percent in October of last year to 1.7 percent in February, which is the most rapid rate of increase since February 2013; core CPI inflation has risen from 1.7 percent in June of last year to 2.2 percent in March. More recently commodity prices have rebounded sharply from their early February lows. And, the value of the dollar is now falling. These developments have prompted some maintain forecasters to declare that at long last inflation is headed up.

There are some statistical reasons for the recent increases that will wash out over time, but there are

also some developments which may turn out to be sustained rather than temporary. For example, inflation was depressed a year ago by one-time reductions in healthcare reimbursements. This alone accounts for about 0.2 percent of the 0.4 percent increase in core PCE inflation. Housing price increases continue to surprise on the up side (although the rise in that component moderated in March's CPI), reflecting ongoing scarcity of housing supply relative to demand. The effect of higher housing prices flows through to inflation measures through estimates of owners' equivalent rent, which accounts for a particularly large share of the CPI. Some of the recent increase in core inflation, however, may be transitory due to faulty seasonal adjustments that overstate inflation in the first half of the year and understate it in the second half of the year.

As discussed in the examination of inflation forecasts above, a tightening labor market should lead to acceleration in wage rate growth and that, in turn, should place upward pressure on inflation. And, if the dollar continues to weaken, this should eventually contribute to upward pressure on inflation as the prices of imports rise.

Many are now saying that the recent uptick in core inflation measures will be sustained and that the FOMC's 2.0 percent target will be reached within the next two to three years. A few are expressing concern that the FOMC is "behind the curve" and risks inflation breaking well above its 2.0 percent target, especially because potential real GDP growth is so low.

So, what could alter the upward march of core inflation? For one thing, wage inflation is barely discernible and seems likely to be moderate and take a long time to develop. This would delay increases in core inflation. Perhaps more importantly is that the global economy is still dominated by powerful deflationary forces. In our interlinked global economy it is hard to imagine how U.S. inflation can rise on a sustained basis when it is very low and not rising in other parts of the global economy.

### **3. Depressed Inflation Expectations — Noise or Truly Reflective of Market Expectations for Lower Inflation in the Future?**

When financial panic gripped global financial markets in January and February, the 10-year U.S. Treasury note yield fell from 2.27 percent on December 31, 2015 to 1.63 percent on February 11, 2016. Since then this yield has reversed only a few basis points of the decline, rising to 1.79 percent on April 19, 2016. By contrast, U.S. stock prices are within spitting distance of their all-time high reached on May 21, 2015.

It appears that the market has decided that interest rates will remain lower for longer. This is validated by the decline in inflation expectations embedded in market interest rates. The five-year forward yield for the five-year Treasury note was 1.8 percent in December and is now 1.6 percent, although it has been edging up recently as oil prices firm. This yield is often interpreted as reflecting the market's long-term expectations for inflation. Obviously, a 0.2 percentage point decline in inflation expectations is at odds with the 0.4 percentage point increase in core PCE inflation that has occurred over approximately the same period of time.

Perhaps, however, other factors have depressed this measure of inflation expectations, which would mean that it is not necessarily a reliable indicator of future inflation. **GS** has cited three reasons that this may well be the case. First, limited liquidity and heightened demand, which have nothing to do with

inflation expectations, may have depressed yields on this benchmark security. Second, the price of this security has tended to fluctuate in lockstep with the price of oil, which has been very volatile. The price of oil may be a poor indicator of general trends in inflation because fluctuations in its price are reflecting unique aspects of the dynamic interaction of supply and demand for oil.

Another reason that U.S. interest rates have not bounced back to pre-panic levels is that long-term interest rates for all developed economies have moved lower. In that sense lower U.S. interest rates have paralleled broader global developments. But that begs the question of why global interest rates have moved lower. Most would acknowledge that the reasons are slowing global growth and the existence of powerful deflationary forces. But by extension, can U.S. inflation really move higher on a sustained basis if the rest of the world is moving in the opposite direction? Perhaps the decline in inflation expectations embedded in U.S. Treasury security prices is not wholly due to non-germane factors.

## X. Monetary Policy

Given that the labor market is nearing full employment, past experience indicates that the FOMC should be normalizing monetary policy and raising interest rates to a level that assures that inflation does not become unanchored. Such thinking was clearly behind the FOMC's decision in December to begin raising interest rates and was further telegraphed at that time by the median projection of four additional 25 basis points increases during 2016. Most analysts bought into the FOMC's view, debating only whether there would be three or four increases. However, the market was of a different mind. Going into the new year, the forward yield curve indicated an expectation of only one to two increases.

Then the market was trashed in the early days of January by global panic in financial markets and expectations of rate increases disappeared entirely. Dismayed FOMC members began to utter soothing words and by mid-February market panic abated. However, now that risk-on is the order of the day and the stock market appears to be seriously overbought, the forward yield curve is signaling only one 25 basis points increase at most during the remainder of 2016. The FOMC included dovish language in its February policy statement that aided the reemergence of optimism.

Then the FOMC surprised markets at its March meeting with the continuation of surprisingly dovish language, particularly with respect to inflation prospects, and reduced its median number of projected rate increases during 2016 from four to two. This dovish guidance was reinforced more recently when the minutes of the March FOMC meeting were released.

**B of A** agrees with two rate moves and believes market expectations are unreasonably pessimistic. **GS** goes further and expects three rate increases. What is behind the concern of professional analysts and forecasters is the rapidly tightening labor market, some preliminary indications of acceleration in wage growth, and, importantly the 0.4 percent increase in core inflation in recent months. These views, of course, reject the worries of market bears that the underlying fundamentals of the global economy are fragile and the continued ability of monetary authorities to hold things together is tenuous.

To the FOMC's credit, part of its dovish policy statement language reemphasized its global concerns: *"However, global economic and financial developments continue to pose risks."*

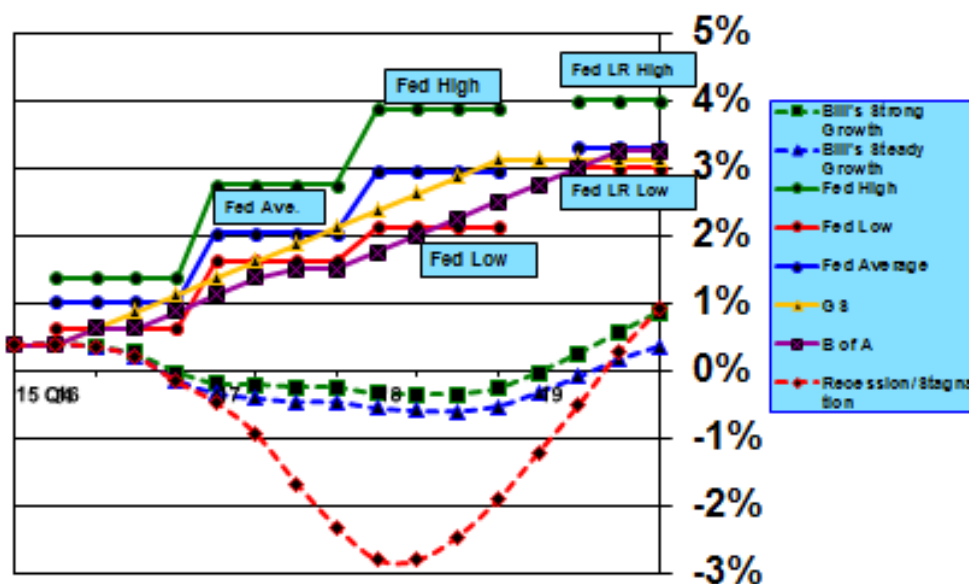
Also, the FOMC noted the recent uptick in inflation but did not express the kind of worry that many market participants possess: *“Inflation picked up in recent months; however, it continued to run below the Committee’s 2 percent longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed, on balance, in recent months.”* This statement really just stated known facts, but was interpreted by market participants to mean that the FOMC wasn’t ready to accept the recent pickup in inflation as a defining reversal. Chair Yellen reinforced this view during her press conference by suggesting that some of the inflation components responsible for the recent uptick are volatile.

In a subsequent speech delivered on March 29, Chair Yellen cited ongoing risks posed by international developments, weakness in indicators of inflation expectations, and the asymmetric limitation on FOMC flexibility. Asymmetry means that it is easier to raise rates than lower them when the federal funds rate is so near the zero boundary. If inflation really does begin to move up convincingly, she implied that the FOMC can catch up quickly. Bottom line — the FOMC is in no hurry to raise the federal funds rate.

Thus, it is unlikely that the FOMC will raise rates at its upcoming meeting. Furthermore, the market does not expect the FOMC to raise rates at the June meeting. Of course, that view could change quickly depending upon the language in the April FOMC policy statement.

**Chart 14** shows the quarterly progression in the federal funds rate from the present through 2019 implied by the FOMC’s projections. It also shows forecasts for **B of A**, **GS**, and my three scenarios — **“Steady Growth,” “Strong Growth,”** and **“Recession/Stagnation.”**

**CHART 14 – Federal Funds Rate Forecasts**



My forecasts continue to be outliers. They are driven by my expectation that inflation will remain lower for longer than others expect and also by an even smaller expected value for the real rate of interest than the 1.25 percent level now embraced by a majority of the FOMC. It certainly is tempting to dismiss my forecasts of future values of the federal funds rate as being unrealistically low, particularly if you believe that inflation will rise. I would simply point out that I have had similarly low forecasts for a very long time and during that time the market has come my way. This is not an argument that I am smarter than others or that I am particularly prescient. The point I would make, however, is that analysis and forecasting often is rooted in past experience and beliefs and this risks overlooking or discounting the importance of significant changes in how the global economy works.

**B of A** and **GS** are becoming increasingly adamant that wages and inflation are rising and are critical about the FOMC's dovish view of inflation prospects. Neither believes that global risks are sufficiently great to justify delaying rate increases. They fear that the combination of relatively tight labor market and low real potential GDP growth has set the stage for a surge in inflation if the FOMC delays too long in raising rates.

Obviously, markets and the FOMC are of a different mind. **B of A's** and **GS's** views appear to be based on their belief, rooted in past experience and fear of inflation, that the harm higher rates might inflict on U.S. economic activity through feedbacks from slower global growth will be limited. This view discounts the potential importance of the impact of financial conditions on economic activity in the U.S. and places a low weight on global financial fragility. In fairness, however, **GS** has done extensive statistical analysis about the size and timing of tighter financial conditions on real U.S. GDP. The impacts are significant but not cataclysmic.

My view is that January's panic was a warning shot across the bow. The weaker dollar and lower interest rates were essential and necessary to defuse that panic, particularly with respect to emerging markets. But, the policy shift that helped calm financial markets and bought time for emerging markets is inflicting damage on Europe and Japan. Both countries are struggling to avoid deflation. Their currencies are strengthening and that, in time, will depress economic activity. Moreover, neither country appears to have policy options any longer that could parry yet another negative shock.

Caution on the part of the FOMC is warranted. Given the breadth of global imbalances and the extreme overbought state of the U.S. stock market, an FOMC rate increase and more hawkish commentary could well unleash a repeat of January's market panic.

## APPENDIX

## Outlook — 2016 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 2016 U.S. and global economic outlook and risks to the outlook are listed below.

*Financial markets started the year off in ugly fashion with stock prices plunging in all global stock markets, prices of commodities in free fall, and long-term bond yields heading toward zero in many global markets. Concerns about slowing global growth and potential recession in the U.S. were amplified by unexpectedly weak data reports during the opening weeks of 2016. Consequently, many forecasters lowered their estimates of economic activity during 2016, but virtually none expected recession.*

*Market sentiment reversed rather abruptly in late February and recent data reports have generally been more upbeat. Thus, it is not at all surprising that recession fears have faded into the background. Nonetheless, the 2016 outlook generally remains less favorable than when forecasts were prepared in December 20 15.*

### 1. U.S.

- **2016 real GDP Y/Y** growth projections range from 2.3% to 2.5%. The FOMC's central tendency Q4/Q4 projections range from 2.3% to 2.5%. (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 the substantial federal tax reductions and spending increases Congress enacted at the end of 2015.
  - *B of A has reduced its estimate of 2016 year-over-year growth to 1.7% and GS has reduced its estimate to 1.8%; my estimates now range between 1.8% and 2.0%; the FOMC has reduced its 2016 Q4/Q4 projection range from 2.3%2.5% to 2.1%2.3%*
  - *B of A is currently projecting Q1 annualized GDP growth of 0.0%; GS is forecasting 0.8%*
- **Real GDP output gap** will remain high, but will close rapidly during 2016 from about 2.6% to 2.0%. (*CBO revised potential GDP assumptions in January and this reduced the output gap from 2.6% to 2.1%; accordingly, the revised forecast is for the output gap to close to 1.5% during 2016*).
- **Potential structural rate of real GDP growth** has declined significantly in recent years. I expect potential growth to be about 1.4% in 2016. Long-term potential real GDP growth will edge up in coming years to between 1.8% and 2.1%.
  - *I have lowered my estimate of potential growth in 2016 to 1.3%*
  - ? *B of A reduced its estimate of long-term potential growth to 1.7%; GS's estimate is 1.75%; CBO's updated estimate is 2.0%; and the FOMC's central tendency range is 1.8%2.1%; my long-term range remains between 1.8% and 2.1%*
- **Productivity** should rise during 2016 as growth improves and investment increases, but should still fall well short of the historical 2.1% average.
  - *Nonfarm productivity averaged 0.6% in 2015; the five-year average was 0.4%; my current productivity projection for 2016 is 0.6%; B of A's is -0.4%*

*- Productivity is likely to be low or negative in the first quarter because annualized GDP growth is forecast to be less than 1.0%, while annualized growth in total hours worked has also slowed to less than 1.0%; B of A is forecasting -2.0% productivity growth in the first quarter*

- **Employment** growth should slow considerably during 2016 as full employment is reached and slow growth in the labor force becomes binding; payroll growth should average 130,000 to 165,000 per month.

*- Payroll employment increased an average of 209,000 over the first three months of 2016 due primarily to a rising participation rate*

- **Employment participation** will be relatively stable during 2016 as labor market conditions tighten and discouraged workers find jobs, offsetting the demographically-embedded decline stemming from retirements of baby boomers.

*- Participation rose to 63.02% in March from 62.65% in December and from its low of 62.42% in September 2015*

*? According to GS's estimate the remaining participation gap is about 0.2%; thus, if long-term participation is declining 0.25% annually and the participation gap closes by the end of 2016, the participation rate for the remainder of 2016 should stabilize near 63.0%*

- **Unemployment rate** should edge down to between 4.6% and 4.8%.

*? Unemployment rate was 5.03% in March slightly above the long-term structural rate of 4.85%, according to CBO*

*? The overall full employment gap is about 0.4% (unemployment gap = 0.2% and participation gap = 0.2%)*

- **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 2.2% to 2.5%.

*- Disposable income growth in February ran 3.7% ahead of the year earlier level due to strong employment gains during the last year; growth is projected to fall to 2.8% by the end of 2016 provided that employment growth slows as expected*

- **Nominal consumer spending growth** on the Y/Y basis will be relatively s in a range of 3.3% to 3.5%.

*? While nominal spending growth over the past year as of February was rising at a 3.5% annual pace, nominal spending growth in 2016 will probably be considerably lower because the sharp decline in energy prices in early 2016 will depress total inflation; current 2016 growth estimates have fallen to a range of 3.2%3.3%*

*- Growth in nominal retail sales has been much weaker than expected over the first three months of 2016*

*? Consumer sentiment measures are lower than a year ago; University of Michigan's index was 91 in March compared to 92 in February and 93 a year ago; the Conference Board was 96.2 in March up from 94.0 in February, but down from 101.4 a year ago; Evercore ISI's weekly company surveys have been edging down and have fallen from 52.4 to 48.5 since March 2015*

- **Household personal saving rate** will decline slightly as growth in spending exceeds growth in disposable income.



- *The saving rate was 5.32% over the first two months of 2016 compared to the 2015 average rate of 5.06%*
- **Stock prices**, as measured by the S&P 500 average, should be between 5% higher or lower, reflecting the slowing growth in profits and rising short-term interest rates.
  - + *Stock prices are up 2.8% since the beginning of the year*
- **Manufacturing** will continue to be weak with the PMI index just slightly above or below 50.
  - + *The PMI manufacturing index was 51.8 in March compared to 49.5 in February, 48.2 in January and 48.0 in December, reflecting a moderate improving trend that now indicates modest growth*
  - + *The PMI service index was 54.5 in March compared to 53.4 in February, 53.5 in January, and 55.8 in December, reflecting modest, but stable growth in services*
  - + *The NFIB optimism index for small businesses fell to 92.6 in March from 92.9 in February, 93.9 in January, and 95.2 in December, reflecting softer growth; this index is now down substantially from the recent cyclical peak of 100.3 reached in December 2014*
  - + *GS's business conditions index rose to 46.5 in March from 40.4 in February, 39.9 in January, and 48.6 in December, marking the 12th consecutive month below 50*
- **Business investment** spending growth should edge down slightly and be in a range of 2.0% to 3.5% as employment and consumer spending growth slows.
  - *GS expects business investment growth to be negative in the first quarter of 2016, reflecting energy investment cutbacks, and then rebound, rising 1.25% overall during 2016; B of A and an industry estimate forecasts somewhat lower growth of 1.0% in 2016*
- **Residential housing investment** should remain relatively strong in a range of 6% to 8%, but should edge down a bit from 2015's level; housing starts should rise 10% to 15%.
  - ? *GS expects housing investment to increase 9.7% in 2016; B of A expects an increase of 8.6%; both estimates are slightly above the expected range*
  - ? *Over the first two months of 2016 housing starts are 3.8% above 2015's average, but 16.1% above the first two months of 2015*
- **Residential housing prices** should rise more slowly in 2016 in a range of 2% to 4% in 2016.
  - ? *B of A recently raised its forecast of housing prices to increase 3.6% in 2016 instead of 1.8%*
- **Trade deficit** should rise in 2016 as the increase in the value of the dollar continues to depress exports and increase imports. The **dollar's value** on a trade-weighted basis should rise slightly.
  - + *The trade deficit has risen slightly over the last 12 months from 2.88% to 3.02%*
  - *The trade-weighted value of the dollar has fallen 3.0% since December and momentum appears to be slightly in the direction of greater weakness*
- **Monetary policy** — the Federal Reserve will raise the federal funds rate two to three times during 2016 in 25 basis point increments.
  - + *The market currently expects only one 25 basis points increase in the federal funds rate during 2016; B of A expects two increases and GS expects three increases during 2016; at its March meeting the FOMC revised its median estimate of the number of increases during 2016 from four to two*

- **Total inflation** measures (CPI and CPE) will rebound sharply in 2016 as the depressing effects of 2015's collapse in oil prices passes out of the indices.  
*+ CPI is on track to rise from 0.7% in 2015 to 2.2% in 2016 according to B of A; PCE is expected to rise from 0.7% to 1.5%*
- **Core PCE inflation** will be relatively stable in a range of 1.2% to 1.6%, reflecting global disinflationary trends offset somewhat by the closing U.S. employment and output gaps. Core PCE inflation will remain well below the FOMC's 2% objective at least through 2018 and perhaps much longer.  
*- Core PCE inflation forecasts have been raised to 1.6% to 1.8%; FOMC's March projection range for 2016 is 1.4% to 1.7%*
- The **10-year Treasury rate** is likely to fluctuate in a range between 2.25% and 2.75% in 2016. 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 rate was 1.79% on April 19*
- **Fiscal policy** will have a positive impact on real GDP growth during both fiscal year and calendar year 2016, raising real GDP growth by 0.4 to 0.6%. The deficit as a percentage of nominal GDP will increase substantially from fiscal year 2015's level of 2.46% to a range of 3.25% to 3.50%. Stronger than expected growth would push the deficit toward the lower end of the range.  
*? With GDP revisions, the 2015 calendar year fiscal deficit was 2.63%; based on expected modest growth in first quarter 2016 nominal GDP and the 12-month cumulative deficit, the deficit to GDP ratio was 2.52% in March 2016 compared to 2.89% in March 2015 but is expected to rise to at least 3.10% by the end of 2016*
- **State and Local investment** spending growth should range between 1.5% and 2.0%.

## 2. Rest of the World

- **Global growth** is likely to improve to 3.4% in 2016 from 3.1% in 2015. Risks are tilted to the downside.  
*- Global growth forecast has declined to 3.2% in 2016*  
*- The global manufacturing index is in a declining trend and at 51.3 indicates weak expansion*  
*- The OECD leading indicator is declining and is at its lowest level since the Great Recession*
- **European growth** will be positive but will likely fall short of the consensus 1.7% as the benefits of 2015's fall in the value of the euro wane and social and political disruptions occur.  
*- European growth forecast has declined to 1.5% in 2016; risks are tilted toward further reductions*
- **European inflation** will rise from 2015's 0.1% but will probably fall short of the expected 0.9%.  
*- Final 2015 European inflation was 0.0%; 2016 forecast is 0.1%*  
*- The ECB is slowly losing its battle to push inflation to 2.0% as reflected in market long-term inflation expectations, which have declined below 1.5%*

- **European financial markets** should be relatively stable with periodic episodes of volatility prompted by specific events.
  - *European stock markets declined broadly in early 2016; bank stocks plunged 45% since their recent peak to a level not experienced in 30 years; however, stock prices rallied vigorously in March as panic subsided and the ECB ramped up monetary easing; however, bank stocks continue to underperform, a worrying development*
- **European political dysfunction, populism and nationalism** will continue to worsen gradually. Countries to watch closely include Greece, Spain, Italy and Portugal.
  - + *Political fragmentation is worsening slowly; the immigration crisis is hollowing out centrist political parties*
  - + *Spain's election was inconclusive and the four parties have yet to forge a governance arrangement — this impasse has continued for several months*
  - + *Italy's banking crisis has the potential to erupt and could derail Renzi's fall constitutional referendum — a no vote would force Renzi to resign and political instability would escalate; however, recent ECB monetary policy initiatives could buy additional time for Italian banks*
  - + *Greece's third bailout is increasingly in jeopardy of failing; bond rates are rising; farmers are protesting tax and pension reforms*
- **U.K. growth** is expected to remain a solid 2.5% in 2016 compared to 2.4% in 2015; some risk to this outlook could evolve from the proposed referendum for the U.K. to leave the European Union.
  - *U.K. growth forecast has declined to 2.0% (IMF 1.9%) in 2016*
  - *Prime Minister Cameron reached an agreement with the EU responding to reforms the U.K. has demanded; Cameron has scheduled a referendum for June 23, which is expected to narrowly favor remaining in the EU*
- **China's GDP growth** will slow below 6.5% and could be as low as 6.0% by the end of 2016 as economic reforms are implemented and the shift to a consumer-focused economy gathers momentum.
  - ? *China's 2016 GDP growth is forecast to be 6.6% (IMF 6.5%) but risks are tilted toward a lower outcome*
- **China's leadership** will continue to be slow in implementing **economic reforms** but financial and political stability will be maintained.
  - ? *President Xi's anticorruption campaign and centralization of power is smothering the consensus governance approach in place for the last 30 years and may be creating latent political instability*
- **Japan's** economic policies will continue to fall short of achieving the 2.0% inflation target; inflation is expected to rise from 0.5% in 2015 to 1.0% in 2016. GDP growth will also continue to fall short of the policy target, but should rise from 0.7% in 2015 to 1.2% in 2016. Population decline and slow implementation of market reforms will continue to weigh heavily on both growth and inflation.
  - *Japan's economy grew 0.5% in 2015; the 2016 growth forecast has been revised down to 0.7% (IMF 0.5%)*

- *Japanese markets responded very negatively to the Bank of Japan's imposition of negative interest rates; the yen has strengthened*
- *Inflation is now expected to be -0.2%*
- *Evidence is increasing that Abenomics is failing; Abe's popularity has declined to 35%*
- **India** should continue to experience relatively strong real GDP growth in a range of to 6.0% to 7.0% in 2016.
  - + *IMF is forecasting 7.5% GDP growth*
- **Emerging market countries** should experience better growth in 2016 than in 2015 when falling prices for commodities depressed economic activity in many countries.
  - *Declines in the prices of commodities and capital outflows have depressed growth in most emerging market economies in 2016*
  - *2016 GDP IMF forecast has been revised downward from 4.3% to 4.1%*
- **Brazil, Russia, and Venezuela** will continue to struggle the consequences of the steep decline in the prices of commodities and particularly in the price of oil.
  - + *Economic and political conditions continue to deteriorate in all three countries; escalation of political tensions and the potential for social disruption is greatest in Venezuela; political instability is building in Brazil with the impending impeachment of President Dilma Rousseff*
  - + *Russia's 2016 GDP forecast has been revised from -1.0% to -1.8%*
  - + *Brazil's 2016 GDP forecast has been revised from -3.5% to -3.8%*

### 3. Risks — stated in the negative relative to the forecast.

- **U.S. potential real GDP growth** falls short or exceeds expectations; falling short is the more serious risk.
  - ? *Too early to determine; however, forecasts have been reduced*
- **U.S. employment growth** is slower or faster than expected; slower growth is the more serious risk.
  - + *Employment growth over the first three months of 2016 has been faster than expected*
- **Employment participation rate** rises rather than remaining stable or falling modestly
  - + *The participation rate has risen so far in 2016 helping to keep the unemployment rate from falling*
- **U.S. hourly wage rate growth** falls from its 2015 level of 2.2% or rises much more rapidly than expected; falling wage growth is the more serious risk
  - *Risk not realized — average hourly wages of all employees have risen slightly from 2.30% in December to 2.35% in March (12-month moving average); however, the rate of increase in weekly average wages has fallen from 2.42% in December to 2.19% in March as the length of the workweek has decreased*
- **US. Unemployment rate** falls less than expected
  - *Risk not realized, although the increase in the participation rate has stopped the decline for the time being*

- **U.S. productivity** remains below 1%  
*? Too early to determine, but forecasts indicate that productivity is likely to remain well below 1%*
- **Real U.S. consumer income and spending** increase less or more than expected; less than expected increases are the more serious risks  
*? Income is rising a little faster than forecast and spending is rising about as expected with consequence that the saving rate has risen slightly*
- **U.S. stock prices** fall more than or rise more than the expected range of -5% to +5%  
*- Risk not realized*
- **Growth in U.S. residential housing investment and housing starts** are less than or more than expected; below expectations is the more serious risk  
*? Too early to determine*
- **U.S. residential housing price increases** are less than expected  
*? Too early to determine*
- **U.S. private business investment** does not improve as much as or more than expected; falling short of expectations is the more serious risk  
*? Too early to determine, although forecasts have been reduced*
- **Oil price declines** that occurred in 2015 trigger bankruptcies and cause tighter financial conditions with negative implications for economic activity and growth  
*+ Risk in process of being realized; however, market contagion has not occurred*
- **U.S. manufacturing growth** contracts or expands more than expected; contraction is the more serious risk  
*- Risk not realized*
- **U.S. trade deficit** does not widen as expected  
*- deficit has widened slightly*
- **Value of the dollar** rises substantially  
*- Risk not realized; value of the dollar has declined about 3.0% since December*
- **U.S. monetary policy** spawns financial market uncertainty and contributes to financial instability  
*+ Risk was realized briefly at the beginning of the year but has abated due to less aggressive monetary policy and a weakening U.S. dollar*
- **U.S. inflation** falls, rather than remaining stable or rising as expected  
*- Risk not realized; inflation rising a bit more rapidly than expected*
- **U.S. interest rates** fall or rise more than expected  
*+ Risk realized; rates have fallen much more than expected*
- **U.S. fiscal policy** is more expansionary than expected  
*- Risk not realized — increase in spending about as expected*
- **Federal budget deficit** increases more than expected

- *Risk not realized deficit about as expected*

- **U.S. state and local spending** does not rise as fast as expected  
*? Too early to determine*
- **Global GDP growth** does not rise as fast as expected  
*+ Risk realized*
- **European growth** is considerably less than expected  
*+ Risk realized — modest reduction in forecast growth, but with downside risks because of a stronger euro*
- **ECB's** quantitative easing program is not successful in raising inflation and stimulating the European economy  
*+ Risk realized — inflation forecast is 0.1% for 2016; IMF estimates a 35% probability that Europe is headed to deflation*
- **Europe** — financial market turmoil reemerges  
*+ Risk realized temporarily early in the year but calm has returned; bank stocks continue to perform poorly relative to other industries, reflecting continuing investor concerns*
- **Europe** — political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union  
*+ Risk realized — euroskeptic parties continue to gain ground and are forcing centrist parties to take policy positions that feed centrifugal forces eating away at the cohesion of the European Union*
- **Chinese** leaders have difficulty implementing **economic reforms**  
*? Too early to determine; however, leverage continues to build and profitability is declining*
- **China's growth** slows more than expected  
*? Growth is about as expected but downside risks outweigh upside risks*
- **Japan** — Abenomics and monetary policy are unsuccessful in raising inflation to the 2 percent target and economic growth continues to be below expectations  
*+ Risk realized — conditions are slowly deteriorating and the popularity of the Abe government is eroding*  
*+ Kyushu earthquakes pose a severe threat to Japan's economy*
- Severe and, of course, unexpected **natural disasters** occur, which negatively impact global growth  
*? Japan's Kyushu earthquakes may have negative consequences for the global economy*

*Bill Longbrake is an Executive in Residence at the Robert H. Smith School of Business at the University of Maryland.*